SIERRA MADRE GENERAL PLAN

CONSERVATION ELEMENT

Adopted: Month, Year

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INTRODUCTION

Sierra Madre is a small, vibrant community tucked into the foothills of the San Gabriel Mountains. While much of the City is already developed, residents still enjoy close connections to nature and the area's diverse plants and wildlife. With very little undeveloped land remaining and continued development pressure, the Conservation Element focuses on protecting, managing, and enhancing the natural resources that already exist, while identifying creative and practical ways to carry these resources forward for future generations.

This Element discusses Sierra Madre's natural and cultural resources and serves as a guide for how the City can manage water, land, and open space responsibly. It also highlights the importance of clean air, protecting cultural and historic places, preparing for natural hazards, and maintaining the scenic beauty that makes Sierra Madre unique.

Purpose

The purpose of the Conservation Element is to guide the City of Sierra Madre in protecting and managing its natural and cultural resources. It provides a framework for conserving water, land, air quality, and scenic areas, while also addressing wildlife habitat preservation and disaster preparedness. The Element helps the City plan for responsible growth and development in a way that preserves the environment, maintains the community's unique character, and ensures that natural and cultural resources are available and healthy for future generations.

RELATIONSHIP WITH OTHER ELEMENTS

The Conservation Element maintains a strong relationship with the other Elements of the General Plan, specifically:

Open Space

Open space is vital for conserving Sierra Madre's natural and cultural resources. It includes parks, trails, and natural areas that support wildlife and offer recreational opportunities. The Conservation Element guides the protection and management of these areas, ensuring they are preserved for enjoyment and environmental health.

Land Use

The Land Use Element directs Sierra Madre's growth and development and dictates new building and infrastructure placements. On the other hand, the Conservation Element protects the City's natural and cultural resources such as open spaces, wildlife, water, air quality, and scenic areas. Together, they promote responsible growth while preserving the City's natural beauty and unique character.

Environmental Justice

Environmental justice ensures everyone in Sierra Madre, regardless of age, income, or background, has equal access to a healthy and safe environment, including clean air, water, and safe and open spaces. The Conservation Element supports this by promoting policies that reduce risks, preserve natural resources, and ensure fair access to parks, open spaces, and environmental programs throughout the community.

EXISTING CONDITIONS

Hydrology, Flooding, and Water Quality

Watersheds

A watershed is an area of land in which all rainfall and surface water drain to a common outlet, such as a river or the ocean. Although the City of Sierra Madre is landlocked and contains no harbors or major bodies of water, it lies within the Rio Hondo tributary to the Los Angeles River Watershed.

Much of the water within the Rio Hondo tributary to the Los Angeles River Watershed is used for groundwater recharge during dry seasons. The Rio Hondo and its smaller sub-watersheds help replenish the Raymond Basin Aquifer. Together, these water systems form part of the larger Los Angeles River system.

The Los Angeles River Watershed covers approximately 834 square miles. Its boundaries extend from the Santa Monica Mountains to the Simi Hills to the west, and from the Santa Susana Mountains to the San Gabriel Mountains to the east. The Los Angeles River originates in the surrounding mountains, flows eastward to the northern edge of Griffith Park, then curves south through the Glendale Narrows, continues across the coastal plain, and ultimately empties into San Pedro Bay near Long Beach.

The Rio Hondo tributary to the Los Angeles River Watershed Management Group includes Sierra Madre as a member agency for two regional efforts: the Enhanced Watershed Management Program (EWMP) and the Coordinated Integrated Monitoring Program (CIMP). These programs are developed in partnership with the neighboring cities of Arcadia, Bradbury, Duarte, and Monrovia to protect and manage local water resources. The Los Angeles Regional Water Quality Control Board (RWQCB) regulates the Los Angeles River Watershed. The City of Sierra Madre also holds a National Pollutant Discharge Elimination System (NPDES) permit, which authorizes the City to implement measures to prevent stormwater pollution.

Surface Water

The City of Sierra Madre is a fully built-out community with no major natural surface water bodies. The few existing water features are primarily small reservoirs, stormwater channels, and spreading grounds that support local water management and recharge efforts.

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps, the City of Sierra Madre is situated within an area of minimal flood risk and lies outside the designated 100-year and 500-year floodplains. Nevertheless, localized flooding may still occur during periods of intense rainfall, particularly in areas where storm drains become obstructed or exceed capacity.

It is important that the City be prepared for flooding events, particularly in more mountainous areas, such as the Little Santa Anita Canyon. In these regions, access is limited, and the terrain is more likely to flood, posing significant risks. Proper preparation may include implementing early warning systems, improving infrastructure to manage floodwaters, and ensuring that residents have clear evacuation routes and emergency plans.

Water Quality

Water resources in Sierra Madre are managed by the City's Water Division, a branch of the Public Works Department. The City's water supply is derived primarily from local sources, including groundwater wells in the East Raymond Basin and natural spring tunnels located in the Sierra Madre foothills. Due to historical droughts, in 2013 the City also began importing treated surface water from the San Gabriel Valley Municipal Water District (SGVMWD) into the Raymond Basin to meet demand. All collected water is treated with chlorine prior to distribution to ensure public health and compliance with state and federal water quality standards.

Urban stormwater runoff is one of the main contributors to pollutants entering local waterways. During periods of heavy rainfall, the City also faces increased risks of mudslides, erosion, and infrastructure damage. Despite these challenges, Sierra Madre upholds strict water quality monitoring and management practices. Regular testing and reporting are conducted in accordance with regulatory requirements, and the City publishes annual Water Quality Reports. According to the 2024 Water Quality Report, no violations or exceedances of drinking water standards were detected, demonstrating the City's commitment to maintaining a safe and reliable water supply.

In addition to its groundwater sources, the City holds surface water diversion rights from Big Santa Anita Canyon (3,500 acre-feet) and Little Santa Anita Canyon (1,500 acre-feet). Stormwater, including water stored behind the Santa Anita Dam, may be diverted to the Sierra Madre Spreading Grounds for groundwater replenishment. This practice supports the long-term sustainability of the City's local aquifers and enhances drought resilience through managed recharge efforts.

Drought and Water Needs

The City of Sierra Madre is located within a desert climate, making it particularly susceptible to drought conditions. As a result, drought management and water conservation remain top priorities in the City's resource planning efforts.

Due to drought conditions, Sierra Madre has historically relied on supplemental water from the San Gabriel Valley Municipal Water District (SGVMWD). Future droughts could not only further affect the City, but may also impact SGVMWD's ability to provide sufficient water to its sub-agencies during multi-year droughts or under other conditions that limit available supplies.

To enhance local water supply reliability, the City is developing a new well in the Main Basin. Once operational, this well will eliminate the need to use treated imported water to replenish the Raymond Basin. Additionally, the City maintains a cyclic storage account with the Main Basin Watermaster, which allows imported water to be stored for use during future drought conditions when imported supplies may be constrained.

Collectively, these measures indicate that the City can meet water demands during normal hydrologic years for at least the next 25 years, while continuing to strengthen resilience against future droughts.

BIOLOGICAL RESOURCES

Although Sierra Madre is largely urbanized, the City remains uniquely connected to its natural surroundings. Large portions of undisturbed open space blend into the community, providing habitat for a wide variety of native wildlife and plant species. This section describes the City's existing biological resources and establishes the environmental baseline used throughout the General Plan.

The Planning Area is not included within a regional Multiple Species Habitat Conservation Plan (MSHCP) or a Natural Community Conservation Plan (NCCP). A Multiple Species Habitat Conservation Plan (MSHCP) is a regional, long-term conservation and permitting framework designed to protect multiple plant and animal species, especially threatened and endangered species, while still allowing cities, counties, and agencies to carry out development and infrastructure projects. A Natural Community Conservation Plan (NCCP) is a California-specific, ecosystem-based conservation program that protects entire natural communities and landscapes not just individual species, while allowing planned development to proceed in designated areas. Since the City of Sierra Madre is not included in these plans, compliance with state and federal biological regulations occurs at the project level, with each development or improvement activity evaluated individually to ensure adherence to applicable laws and resource-protection requirements.

While the City is not part of a regional conservation plan, Sierra Madre has adopted its own Community Forest Management Plan (CFMP). The CFMP provides a framework for maintaining, enhancing, and expanding the community's urban forest, supporting both ecological health and the quality of life for residents.

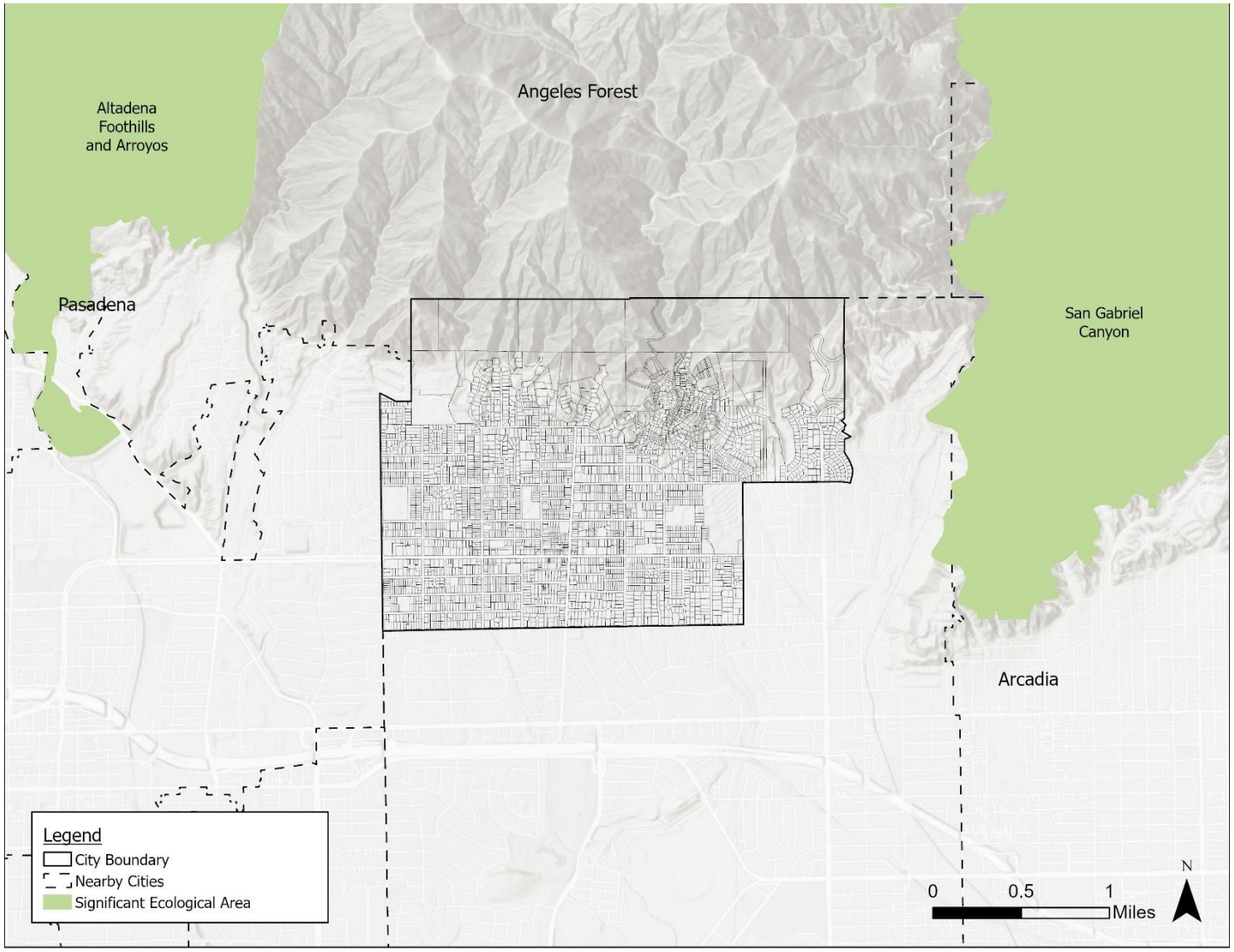
Ecological Setting

Significant Ecological Area (SEA)

Sierra Madre is bordered by two significant ecological areas (SEAs): The Altadena Foothills and Arroyos, and San Gabriel Canyon. SEAs are designated regions within Los Angeles County that contain irreplaceable biological resources. They were established to conserve genetic and physical diversity by identifying areas capable of sustaining themselves into the future. Development and design standards are enforced in these areas to ensure their protection.

As shown in ***Figure 1***, there are no SEAs within Sierra Madre's boundaries. However, any future development, particularly along the northwest and northeast edges of the City, should be undertaken with special caution to minimize potential environmental impacts on these SEAs. This careful approach will help preserve the ecological integrity of the surrounding areas.

Figure 1: Significant Ecological Areas



Special Status Species and Natural Communities

Sierra Madre's natural environment supports a variety of special-status species and sensitive vegetation communities. The term 'special-status' refers to plant and animal species, as well as habitat types, which are recognized by federal, state, or local agencies as rare, threatened, endangered, or otherwise particularly vulnerable to human disturbance or environmental change. These species are protected from harming or killing under the Endangered Species Act (ESA). Special-status species are documented by U.S. Geological Survey (USGS) quadrangle, which is a standardized map area, typically a 7.5-minute, 1:24,000-scale map, used to consistently document and analyze geographic and environmental features.

Sierra Madre lies within the Mount Wilson quadrangle, which is centered on Mount Wilson in the San Gabriel Mountains. Although no special-status species habitats are located directly within the City's boundaries, multiple special-status species have been documented within the Mount Wilson quadrangle, including those listed under the federal Endangered Species Act (ESA) and the California Endangered Species Act (CESA). In addition to formally listed species, the area also supports species of special concern, locally sensitive habitats, and natural communities that contribute to the region's overall biodiversity. ***Table 1*** lists the Special-Status Species in the Mt. Wilson quadrangle.

Critical Habitat

According to the U.S. Fish & Wildlife Service, critical habitat is defined as any area essential to the survival and recovery of endangered or threatened species. This includes areas currently occupied by the endangered or threatened species, as well as unoccupied areas that are nonetheless necessary for their conservation. Unlike special-status species, which designate endangered species, a critical habitat refers to designated geographic areas containing the physical or biological features essential for a species' recovery.

Located in the foothills of the Angeles Forest, the City of Sierra Madre is characterized by abundant native vegetation and frequent encounters with local wildlife. As shown in ***Figure 2***, there are no designated critical habitats within Sierra Madre's city limits. However, a critical habitat area encompassing approximately 285 acres lies less than a quarter-mile east of the City boundary. This area supports *Braunton's milk-vetch* (*Astragalus brauntonii*), a perennial herb native to Southern California's coastal and foothill regions and listed as a federally endangered species. Although located outside the City, this nearby habitat highlights the ecological importance of the region.

Braunton's milk-vetch

Table 1: Special-Status Species Documented in the Mt. Wilson Quadrangle

Species	Scientific Name	Federal Status	State Status
California Condor	*Gymnogyps Californianus*	Endangered	Endangered
Southwestern Willow Flycatcher	*Empidonax Traillii Extimus*	Endangered	Endangered
Braunton's Milk-vetch	*Astragalus Brauntonii*	Endangered	Endangered
Nevin's Barberry	*Berberis Nevinii*	Endangered	Endangered
Slender-horned Spineflower	*Dodecahema Leptoceras*	Endangered	Endangered
Mountain Yellow-Legged Frog	*Rana Muscosa*	Endangered	Endangered
Coastal California Gnatcatcher	*Polioptila Californica*	Threatened	__
California Spotted Owl	*Strix Occidentalis*	Proposed Threatened	__
Southwestern Pond Turtle	*Actinemys Pallida*	Proposed Threatened	__
Western Spadefoot	*Spea Hammondii*	Proposed Threatened	__
Monarch Butterfly	*Danaus Plexippus*	Proposed Threatened	__

Sources: California Department of Fish and Wildlife (CDFW). 2025. *California Natural Diversity Database (CNDDB), Mt. Wilson Quadrangle Query.* https://wildlife.ca.gov/Data/CNDDB;
U.S. Fish and Wildlife Service (USFWS). *Information for Planning and Consultation (IPaC)*. Available at: IPaC Project Planning Tool, Accessed June 10, 2026.

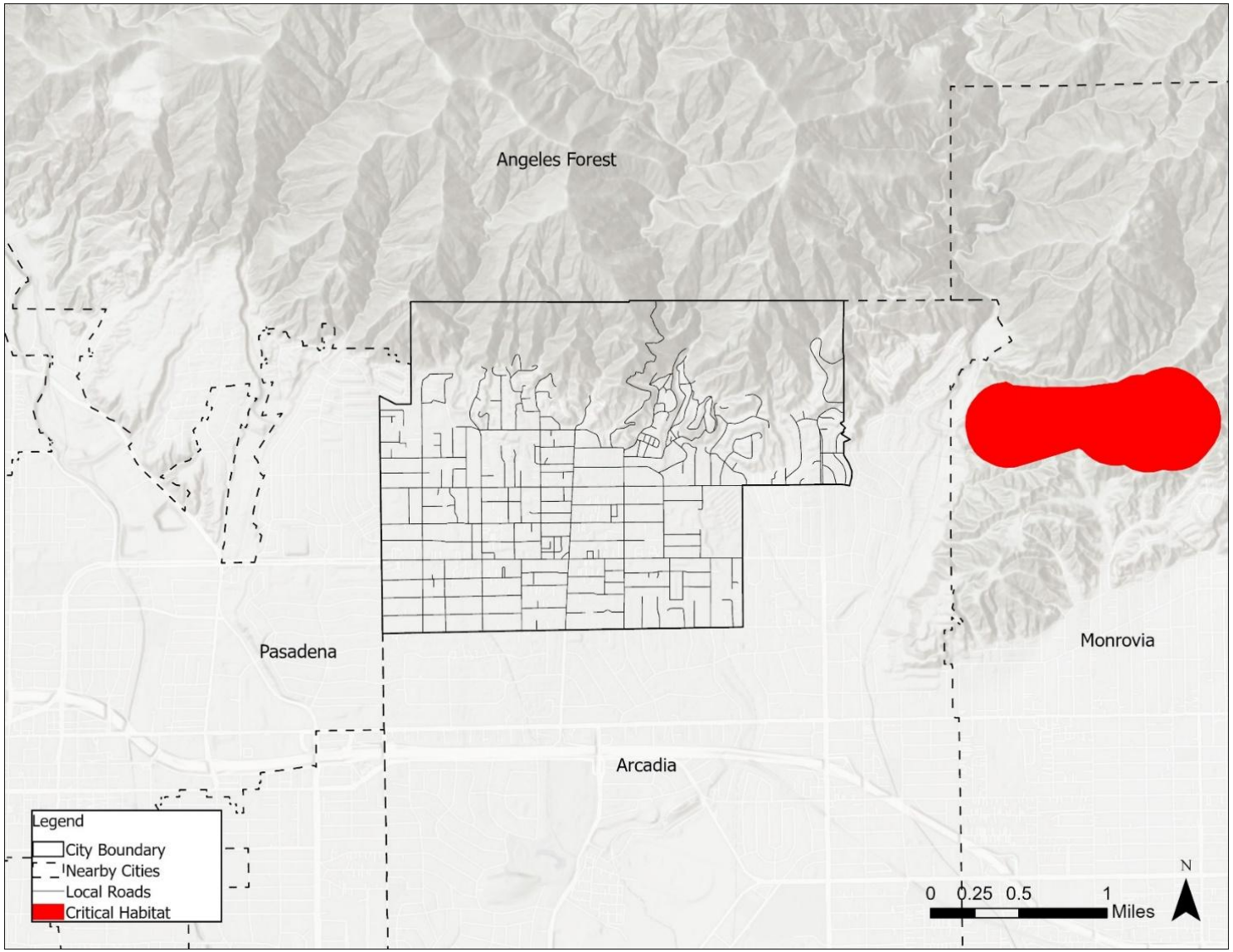
California Condor

Nevin's Barberry

Southwestern Willow Flycatcher

Monarch Butterfly

Figure 2: Critical Habitats



WILDLIFE CONNECTIVITY

Wildlife movement across undeveloped landscapes is essential to long-term species persistence in Southern California. Large blocks of open space and the corridors that connect them, must be identified, protected, and enhanced to maintain functional wildlife movement. Connectivity between core habitat areas allows species to move in response to seasonal needs, disturbance, and climate change, and should be evaluated at multiple scales, from statewide and regional systems to localized movement within the Planning Area.

Recent state legislation reinforces this responsibility. SB 1425 (2022) directs cities to consider how open space contributes to climate resilience, including the preservation of habitat corridors and the reduction of habitat fragmentation. AB 1889 (2024) builds on this requirement by mandating that Open Space Elements explicitly identify wildlife corridors, evaluate barriers to movement, and include strategies to protect or restore habitat linkages using best available science and coordination with the California Department of Fish and Wildlife. Together, these laws position the General Plan as a proactive tool for supporting biodiversity, ecosystem function, and species adaptation in a changing climate. In addition to rising temperatures and frequent wildfires, prolonged drought and altered precipitation patterns influence vegetation health and the availability of forage and cover, affecting how and when species move through the landscape.

Sierra Madre's biodiversity includes a variety of small to large mammals, bird species, herpetofauna, and invertebrates; these animals use the City's natural areas and adjacent wildlands for cover and dispersal. Large-ranging species, including mountain lions and black bears, rely on connected foothill and canyon landscapes to move between regional habitat areas and avoid prolonged use of developed neighborhoods.

California Department of Fish and Wildlife (CDFW) provides mapping of wildlife connectivity and natural habitat blocks throughout the state. These terrestrial connectivity maps provide spatial data on wildlife, vegetation, and habitat connectivity, summarized in 2.5-square-mile hexagons, to support biodiversity conservation and climate resilience planning. The blocks are ranked on the scale of 1 to 5 as follows.

- 1 - Limited Connectivity Opportunity
- 2 - Large Natural Habitat Areas
- 3 - Connections with Implementation Flexibility
- 4 - Conservation Planning Linkages
- 5 - Irreplaceable and Essential Corridors

While these datasets provide valuable regional context, they represent broad screening-level information and may not capture species-specific or seasonal movement patterns at the neighborhood scale.

According to the CDFW's terrestrial connectivity mapping, a majority of Sierra Madre has a Connectivity Rank of 1- Limited Connectivity Opportunity, given its current built condition as shown in ***Figure 3***. Connectivity potential improves slightly in the northern portion of the City, which is mapped with a Connectivity Ranking of 2- Large Natural Areas. This area includes the foothills of the San Gabriel Mountains, connecting wildlife populations to the Angeles National Forest to the north and beyond. Wildfire and post-fire recovery in the foothill areas can temporarily

reduce habitat cover and disrupt movement patterns, particularly where repeated disturbance slows vegetation regeneration.

The City's significant connection to the northern wilderness is also identified in California Essential Habitat Connectivity Project which maps Large Natural Landscape Blocks. Large Natural Landscape Blocks are relatively intact habitat areas identified through the California Essential Habitat Connectivity analysis and exceed 2,000 acres functioning as core areas for regional biodiversity, wildlife movement, and ecosystem resilience. Smaller blocks, on the other hand are more limited in size (less than 2,000 acres), but still providing important local ecological value and supporting fine-scale wildlife movement and connectivity. Large Natural Landscape Blocks in planning area extends into the mountains (***Figure 4***). Functional connectivity in this area relies heavily on habitat lands outside City boundaries, underscoring the regional nature of wildlife movement across the San Gabriel foothills. Consistent with the identification of open space areas, several small natural areas are also mapped within the City's northern foothills.

Communities at the urban-wildlands interface are likely to have more interactions with wildlife attempting to move through adjacent habitat areas in search of resources and cover or for dispersal throughout their home ranges. Wildlife occurrences within the Sierra Madre, especially within the northern portion of the city, are not uncommon. For example, rabbits, racoons, and opossum may use dens and trees near residential and commercial development. Large mammals such as mountain lions and black bears wander into rural areas and canyons in search of food. These conditions contribute to increased human–wildlife interactions, where attractants such as unsecured refuse, outdoor pets, and landscaping influence wildlife movement into developed areas.

This notable presence of wildlife is valued by the City, as Sierra Madre adopted Resolution 72-62 in 1972, designating the City as a Wildlife Sanctuary. Existing hillside development controls and open space protections further shape how wildlife habitat is retained and connected within the City. Additionally, the City created its own Wildlife Management Plan in 2022, with its most recent update in 2024.

Given the City's largely built-out condition, opportunities to support wildlife movement occur primarily along the urban edge and through fine-scale interventions within developed areas. To maintain the movement of wildlife within the City and surrounding landscape, the enforcement of development restrictions in the foothill region should continue. Remaining open space areas containing native habitat for wildlife species should be preserved to the greatest extent feasible. For developed areas where wildlife may pass through, structures and other manmade components should incorporate wildlife-friendly design. These design elements could include spikeless fencing to prevent wildlife injury and mortality, shielded or warm-colored light fixtures to minimize disruption to adjacent natural areas, covered garbage receptacles to discourage scavenging wildlife, and traffic signage for the avoidance of vehicle collisions. Additionally, interpretive centers should be considered for open space recreational areas to educate the public about Sierra Madre's wildlife and encourage its protection.

As much of Sierra Madre is developed, strategic planting could provide small pockets of wildlife refugia throughout the City. Landscape plans should prioritize drought-tolerant native species that are suitable for smaller wildlife such as native birds and pollinators. Where feasible and safe, trees should be planted and maintained throughout interstitial spaces such as roadsides, traffic medians, stormwater channels,

parkways, and other green spaces for the creation of an urban forest canopy.

In fire-prone foothill and interface areas, vegetation management practices must balance fuel-reduction objectives with the retention of habitat structure that supports wildlife movement and cover. Regional wildfire preparedness, emergency response, and recovery planning play an important role in maintaining habitat connectivity, particularly where fires temporarily disrupt movement corridors or displace wildlife into developed areas. Post-fire recovery efforts, including habitat restoration, erosion control, and re-vegetation with native species, can help re-establish movement pathways, reduce long-term fragmentation, and support the gradual return of wildlife to affected areas.

Additional strategies to address wildlife connectivity throughout Sierra Madre should be explored with the help of its stakeholders. The City should coordinate with land managers (e.g., Sierra Madre Mountain Conservancy) to further identify areas crucial for wildlife movement and conservation. The City should also partner with various community groups utilizing open spaces areas to help balance recreational interests with wildlife preservation. Furthermore, with the help of biological resource specialists, follow up studies should be conducted to provide a baseline understanding of wildlife activity throughout Sierra Madre to help inform future efforts to support wildlife movement and habitat connectivity. Future planning efforts should explore ways to enhance local and regional pathways for ecological connectivity. Such initiatives would align with statewide objectives under the Room to Roam Act (AB 1889), which promotes the restoration and protection of habitat linkages in urban and suburban areas.

Pollinator Corridors

Pollinator corridors represent an additional layer of ecological connectivity within Sierra Madre's urban landscape. They operate as a fine-scale connectivity network within a largely built-out environment. These corridors are formed by interconnected native and pollinator-supportive vegetation in private gardens, parkways, street medians, parks, foothill open spaces, and natural drainages. They support native bees, butterflies, moths, hummingbirds, and other beneficial insects that are essential for pollination and plant reproduction. Pollinator corridors complement larger wildlife corridors and Natural Landscape Blocks by strengthening connectivity where roads, development, and fencing limit movement for larger species.

In Sierra Madre, these corridors can help bridge gaps between foothill habitats and urban green spaces, supporting ecosystem resilience under drought, wildfire, and changing climate conditions. The City's extensive tree canopy plays an important role in this system by providing shade, microclimates, nesting habitat, and seasonal flowering resources that help pollinators move through and persist within developed areas.

The City can integrate pollinator corridors into planning by prioritizing native and drought-tolerant species in landscape standards, leveraging the existing tree canopy through preservation and appropriate species selection, incorporating pollinator-friendly design into streets, parks, and stormwater facilities, and minimizing pesticide use in public spaces. Together, these measures reinforce regional connectivity goals.

Figure 3: Habitat Connectivity

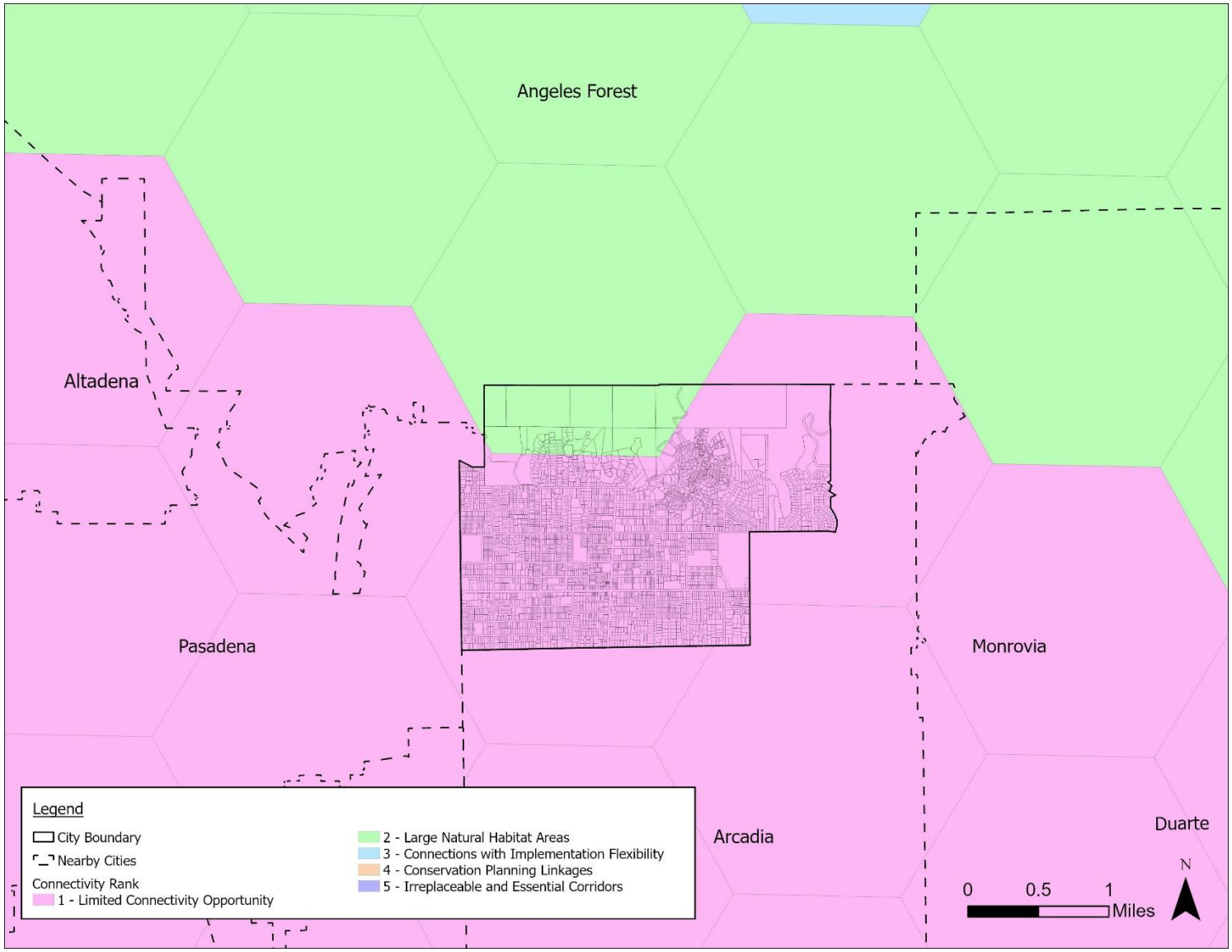
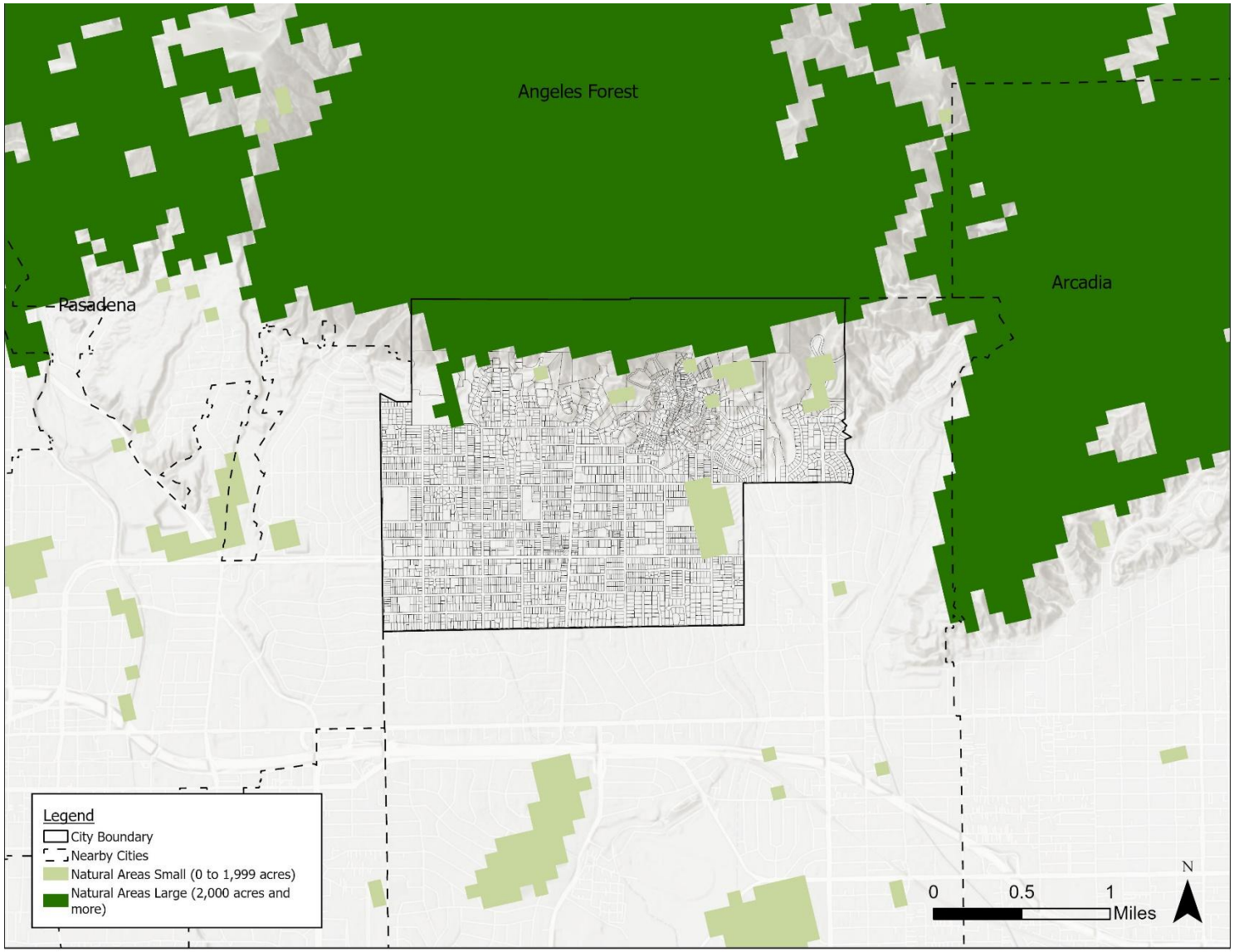


Figure 4: Natural Landscape Blocks

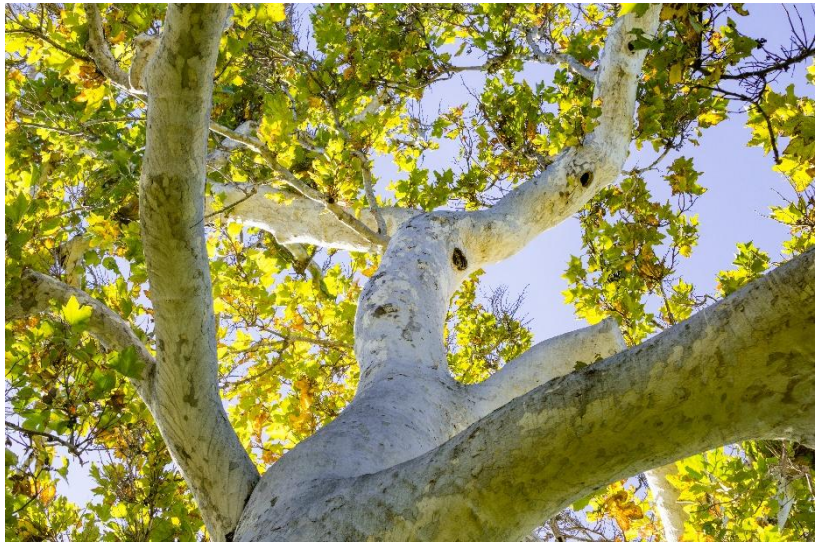


Vegetation

Sierra Madre's position at the base of the San Gabriel Mountains provides the City with a diverse natural setting that supports a wide range of native plant communities. As shown in ***Figure 5***, the City contains varied vegetation types, including California Sycamore, Coast Live Oak, and numerous mixed chaparral species. These plant communities are characteristic of Southern California's Mediterranean climate and contribute significantly to the ecological richness of the region.

Most of Sierra Madre's vegetation is concentrated in the foothill areas, where natural conditions remain largely untouched. These slopes are covered with dense chaparral, oak woodlands, and riparian corridors that provide wildlife habitat, stabilize soils, and help regulate local water flow. Even within more developed parts of the City, remnants of native vegetation are found along washes, canyon edges, and open space parcels, maintaining a link between the built environment and the surrounding mountains.

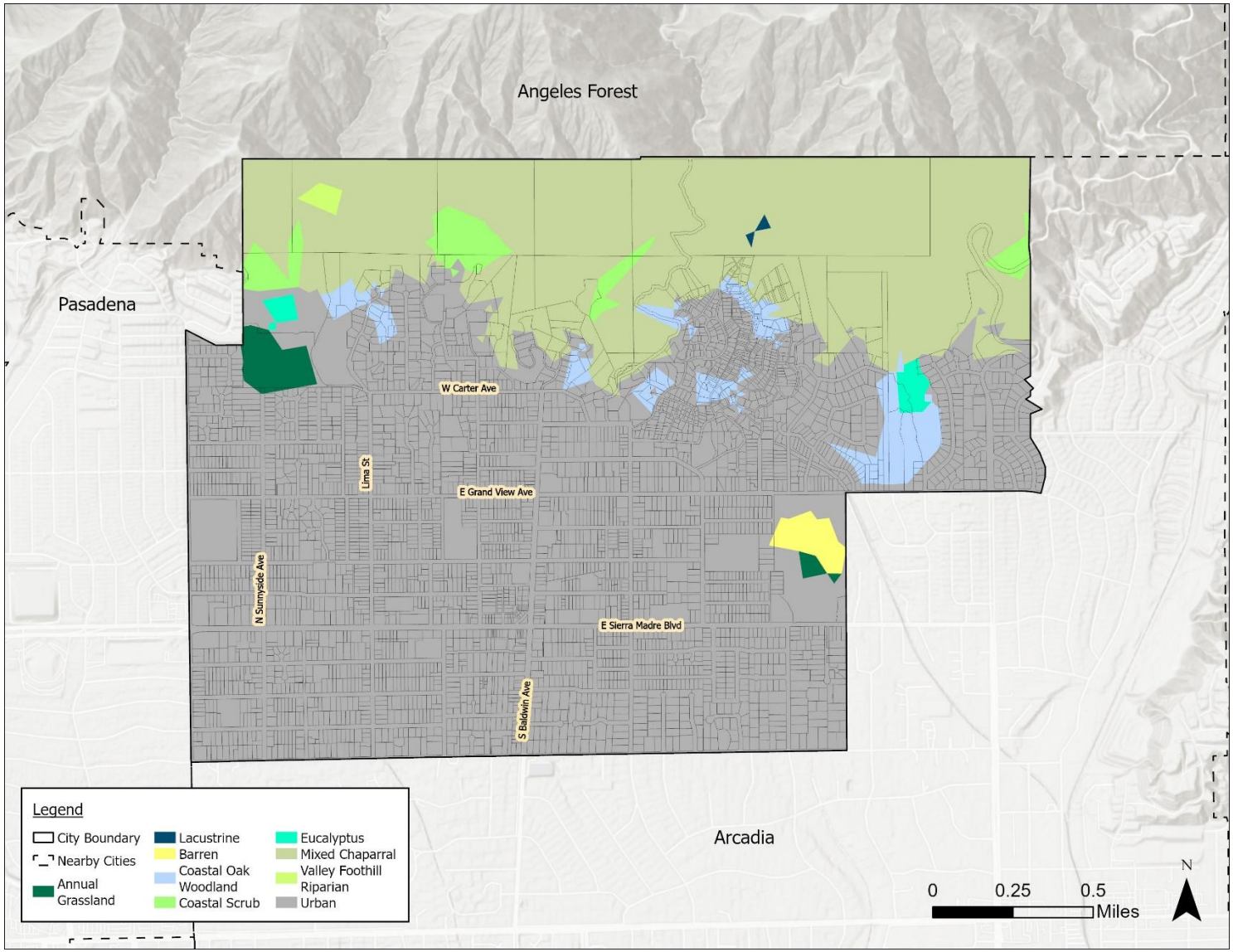
The City's vegetation not only enhances the scenic character of Sierra Madre but also improves environmental health by enhancing air quality, providing shade, and supporting biodiversity. This natural landscape is an essential aspect of the community's identity and plays a crucial role in conservation efforts and overall quality of life.



California Sycamore

Coast Live Oak

Figure 5: Vegetation within Sierra Madre's Boundary



Trees and Fire Hazard

Complementing the natural vegetation is an extensive tree canopy that contributes significantly to Sierra Madre's scenic beauty, ecological value, and small-town character. A healthy tree canopy also plays an important role in residents' well-being, providing shade, improving air quality, and supporting climate resilience. These benefits are further discussed in the General Plan's Open Space and Recreation Chapter.

The City of Sierra Madre maintains a list of protected trees, which includes legacy Trees, parkway trees, and any trees planted on City-owned property. The designated protected species are:

- California Scrub Oak (*Quercus berberidifolia*)
- Coast Live Oak (*Quercus agrifolia*)
- Coastal Scrub Oak (*Quercus dumosa*)
- Engelmann Oak (*Quercus engelmannii*)
- Southern California Black Walnut (*Juglans californica*)
- Western Sycamore (*Platanus racemosa*)

**The Engelmann Oak (Pasadena Oak) is a locally limited species and should be carefully maintained, with support provided to homeowners' efforts.*

While trees and vegetation are integral to the community's identity, they also play a key role in local fire safety. The same natural landscape that defines Sierra Madre's charm also places it at heightened risk of wildfires, particularly in the foothill and mountain-adjacent areas. Careful vegetation management and thoughtful plant selection are therefore essential components of conservation and public safety planning.

When planning urban landscaping, it is important to consider the flammability of certain tree species. Species such as Eucalyptus, Pine, Palm, Acacia, and Cedar contain oils, resins, or other highly combustible materials that can ignite easily and contribute to the rapid spread of fire. In contrast, using fire-resistant native and drought-tolerant species helps reduce wildfire hazards while supporting local ecosystems.

To further mitigate fire risks, Sierra Madre actively participates in fire fuel reduction projects through its Fire Department. Because the entire city lies within a high-risk fire zone, these efforts are critical for protecting the community and surrounding natural areas. Programs include controlled burns, removal of excess vegetation, creation of fuel breaks around structures, and application of mulch in cleared zones. Through these strategies, Sierra Madre works to preserve the health and diversity of its vegetation while reducing the potential for catastrophic wildfires. In doing so, the City balances ecological conservation with public safety—ensuring that the community's vegetation remains both a defining natural asset and a responsibly managed resource.

Southern California Black Walnut

GEOLOGY AND SOILS

Sierra Madre's lithology includes both marine and non-marine sedimentary rocks, creating a diverse geologic foundation. As shown in ***Figure 6***, most of the City is underlain by Quaternary older alluvium (Qoa), which consists of sand, silt, clay, and gravel. These materials are typically loose to moderately compacted and are found in historic floodplains and valley bottoms, where past water flows shaped the landscape.

Understanding the City's lithologic conditions is important because they influence groundwater movement, erosion potential, and land suitability for development. Areas underlain by Qoa generally exhibit higher infiltration rates and variable soil stability, factors that must be carefully considered during construction and infrastructure planning. In contrast, the hillside and mountainous areas of Sierra Madre are primarily underlain by granite bedrock (grMz). Granite is a hard, durable igneous rock composed mainly of quartz, feldspar, and mica, formed deep underground as magma cooled slowly over time. Its resistance to weathering contributes to the steep slopes, ridges, and mountainous terrain that characterize the City's foothill areas. Recognizing the properties of granite bedrock is essential for planning and development in these areas, as it affects slope stability, drainage patterns, and the design of foundations and other hillside infrastructure.

Together, the City's alluvial soils and granite bedrock play a significant role in shaping Sierra Madre's physical environment and guiding future land-use decisions.

Soil

Soil is a critical component of conservation because it supports vegetation, regulates water flow, prevents erosion, and provides habitat for wildlife. As shown in ***Figure 7*** Sierra Madre is primarily made up of two soil types: Urban Land–Soboba–Tujunga Complex (1011) and Trigo Family, Granitic Substratum (313af).

Soil 1011a, found on slopes of 5 to 15 percent, is composed of discontinuous human-transported material over alluvium derived from granite. It consists of sandy loam, gravelly sandy loam, and very cobbly sand, with a depth to restrictive features and the water table of more than 80 inches. This soil is excessively drained, has a low runoff potential, and experiences no flooding or ponding.

The mountainous portions of the City contain 313af, with slopes ranging from 60 to 90 percent. These soils are derived from residuum weathered from granodiorite and include loam, gravelly sandy loam, and bedrock. The depth to paralithic bedrock ranges from 3 to 19 inches, while the water table remains more than 80 inches deep. These soils are somewhat excessively drained and have very high runoff potential, with no flooding or ponding.

Figure 6: Sierra Madre's Lithologic Types

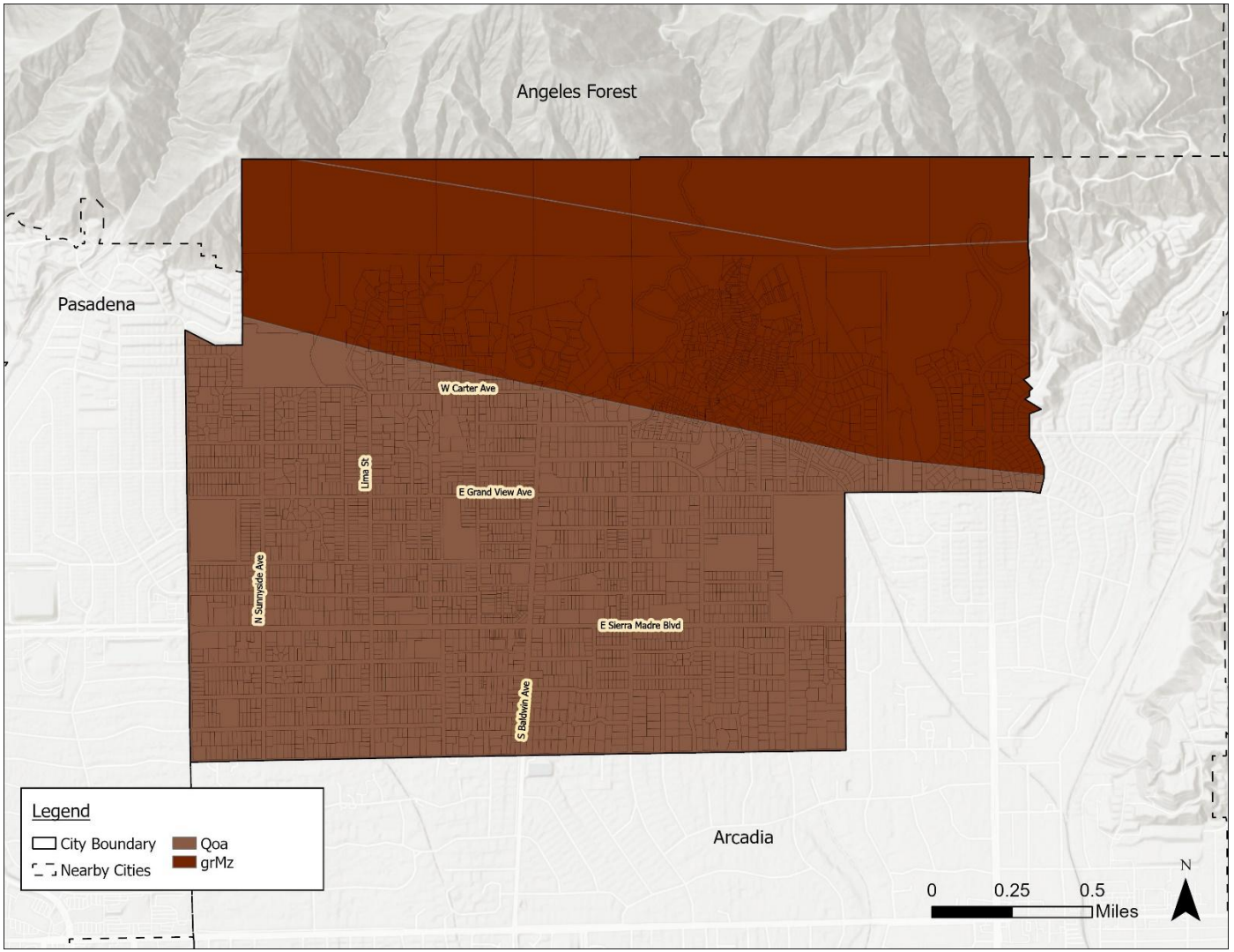
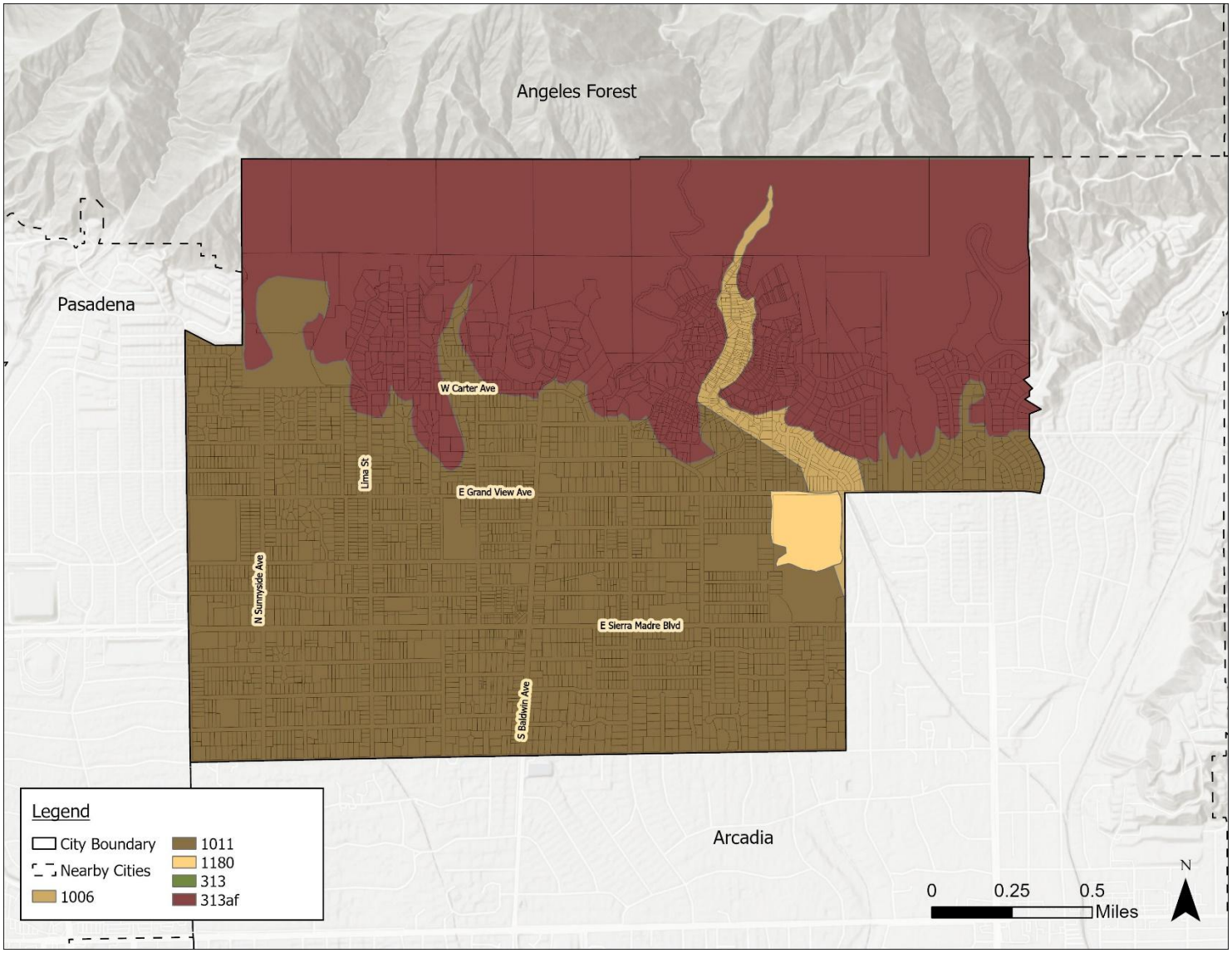


Figure 7: Sierra Madre's Soil Types



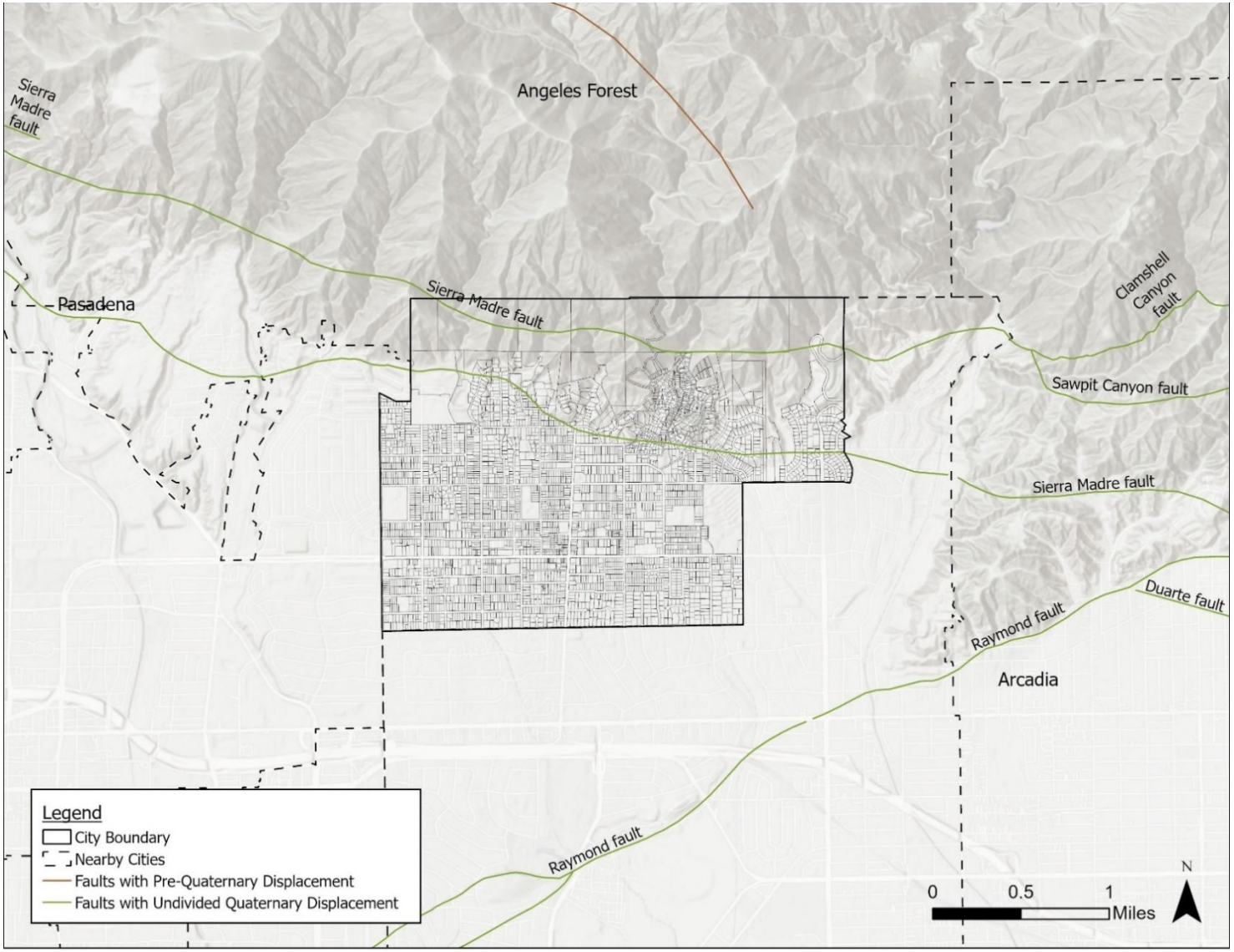
Faults

Understanding the location and behavior of fault zones is important for conservation planning because earthquakes can impact natural habitats, water resources, soil stability, and the safety of open spaces and infrastructure. As shown in ***Figure 8*** Sierra Madre is located on, and borders, several significant fault zones. The southern boundary of the City lies on the Raymond Fault, a left-lateral fault approximately 26 km long that extends through San Marino, Arcadia, and South Pasadena. According to the Southern California Earthquake Data Center, the Raymond Fault dips about 75 degrees to the north. Geological evidence indicates that at least eight surface-rupturing events have occurred along this fault in the past 36,000 years. Future movements along the Raymond Fault could produce earthquakes with magnitudes between 6.0 and 7.0 Mw.

The northern portion of the City is situated on the Sierra Madre Fault, which is roughly 55 km long, with the total length of its main fault segments measuring about 75 km. The fault passes through Sunland, Altadena, Sierra Madre, Monrovia, Duarte, and Glendora. The Sierra Madre Fault Zone is often divided into five main segments, labeled A through E, each approximately 15 km long, with the City located in segment C. While fault rupture may theoretically be limited to one segment at a time, research suggests that a large event on the San Andreas Fault to the north, such as the 1857 earthquake, could trigger simultaneous rupture on reverse faults south of the San Gabriel Mountains.

To the north of the City, within the Angeles National Forest, lies the San Gabriel Fault, a primarily right-lateral strike-slip fault approximately 140 km long. Its most recent rupture occurred in the Late Quaternary, west of its intersection with the Sierra Madre Fault Zone.

Figure 8: Fault Lines



CULTURAL AND HISTORICAL RESOURCES

Sierra Madre has long played an important role in the Pasadena area and the San Gabriel Valley as a historic foothill community, providing access to the San Gabriel Mountains, agricultural and recreational resources, and cultural landmarks. Its early development, scenic trails, festivals, and historic sites have contributed to the region's identity, and its outdoor heritage.

Tribal and Pre-Contact History

Before the formal founding of Sierra Madre, the land was originally inhabited by the Tongva people, a Native American tribe indigenous to the Los Angeles Basin and Southern Channel Islands. The Tongva lived in established villages throughout the region, relying on the area's abundant natural resources for food, materials, and cultural practices.

In the early 1770s, Spanish settlers arrived in the region and established Mission San Gabriel Arcángel, located just south of present-day Sierra Madre. The creation of the Mission marked the beginning of major cultural and environmental changes to the area, as Indigenous lands were incorporated into the Spanish mission system.

Historic Development

Sierra Madre's modern history reflects the broader patterns of development observed throughout Los Angeles County during the nineteenth and early twentieth centuries. The area's recreational and outdoor heritage originated in the 1850s, when Benjamin Wilson, with the assistance of Mexican and Chinese laborers, constructed the Mount Wilson Trail, one of the first access routes into the San Gabriel Mountains. This trail laid the foundation for Sierra Madre's enduring connection to mountain recreation and open space.

In 1881, Nathaniel Carter acquired approximately 1,103 acres of land that would later comprise the City of Sierra Madre. The purchase included 845 acres from Elias J. "Lucky" Baldwin, 108 acres from the Southern Pacific Railroad Company, and 150 acres from Levi Richardson. Carter's acquisition marked the formal beginning of settlement in the area and established the framework for the town's early development.

Today, Sierra Madre remains a small hillside community with a cultural identity deeply rooted in nature, community traditions, and local pride. The City is widely recognized for its long-standing participation in the Tournament of Roses Parade and as the home of the world-famous Wistaria Vine, one of the largest flowering plants in the world.

Documented Resources

Sierra Madre contains numerous properties designated as historic at both the national and local levels. Together, these sites reflect the town's unique character and rich history. A few notable landmarks include:

Mt. Wilson Trail

Located at 167 East Mira Monte Avenue, the Mount Wilson Trail is the oldest trail route in the San Gabriel Mountains. It was created in 1864 by Benjamin D. Wilson, who adapted an existing Gabrielino Tongva tribe trail to harvest timber and items to build his ranch. The trail later served as the access route for transporting the first telescope to Mount Wilson in 1889. During the Great Hiking Era (1895–1938), thousands of visitors arrived in Sierra Madre via the Pacific Electric red cars and hiked the trail to the popular Orchard Camp. After falling into disuse, the trail was restored in the late 1950s through the Sierra Madre community and Boy Scout efforts and is now maintained by volunteers, preserving its role as a historic and recreational landmark.

Sierra Madre Wistaria Vine

The Sierra Madre Wisteria vine was planted in 1894 by Mrs. William (Alice) Brugman, who purchased it from the Wilson nursery in Monrovia for 75 cents and planted it at her Sierra Madre home. Over the years, successive homeowners encouraged its growth with trellises and arbors, allowing the vine to grow in size. Its immense size eventually destroyed the original house, and care of the vine has since involved local horticulturists and university experts. The vine became the centerpiece of the Wistaria Festival, an annual town celebration, and today it is recognized as one of the Seven Horticultural Wonders of the World.

Sierra madre Mountains 1900
Source: California Historical Society Collection, University of Southern California Libraries

Sierra Madre Wistaria Vine 1938
Source: California Historical Society Collection, University of Southern California Libraries

Hart Park House (Senior Citizen's Center)

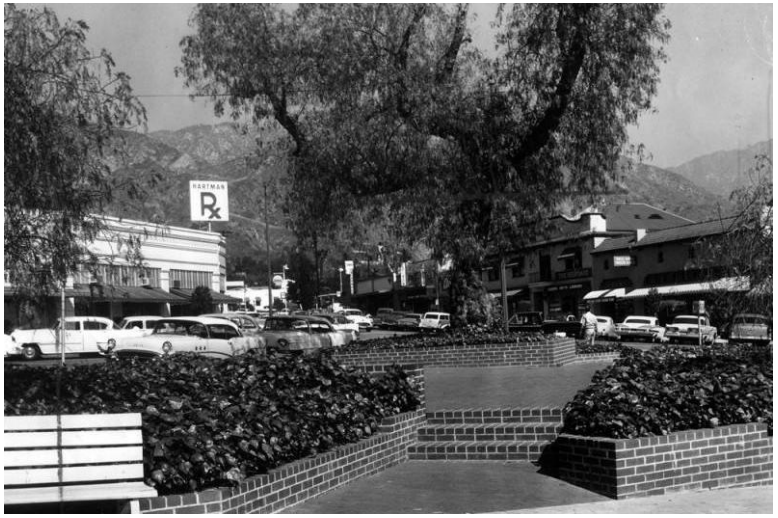
Located at 222 West Sierra Madre Boulevard, the Hart Park House was entered into the National Register of Historic Places in 1884. The Hart Park House, originally called the Park House or Hart Winery Building, was constructed around 1884 by city founder John Jacob Hart, who ran his successful "Monte Vina" winery from the adobe on his 40-acre estate. After Hart's passing, the property was incorporated into Memorial Park, and the building now functions as the Sierra Madre Senior Citizens' Center. Despite renovations over the years, it still preserves its original grand fireplace, maintaining a tangible connection to its historic origins.

Kersting Court Triangle Historical Site

Located at the northwest corner of Baldwin Avenue and Sierra Madre Boulevard, Kersting Court was historically the site of Sierra Madre's second school in 1885. Today, it serves as a small community park, used for local gatherings, weekend leisure, and as a popular filming location for major movies.

Episcopal Church of the Ascension

Located at 25 East Laurel Avenue, the Episcopal Church of the Ascension was entered into the National Register of Historic Places in 1977. The church was first built in 1886 and has held a key importance in the development of the community. The Church architecture is one of the few remaining examples of the ecclesiastical style of one of Southern California's most accomplished architects, Ernest Coxhead.



Kersting Court – 1961

Source: Herald Examiner Collection, HE box 6987, USC Libraries.

Episcopal Church – 1939

Source: Frasher Foto Postcard Collection. Pomona Public Library.

Old North Church

Located at 191 West Sierra Madre Boulevard, the Old North Church was built in 1890 for the town's first Congregational congregation, replacing earlier meetings in schoolhouses and the town hall. Its bell, added in 1893, served both church and civic purposes. After the congregation moved to a new building in 1928, the Nazarenes owned it, later modifying the steeple. Today, the historic church serves as a teen center, classrooms, and meeting space for multiple congregations.

Pioneer Cemetery

Located at 535 East Sierra Madre Boulevard, the Sierra Madre Pioneer Cemetery was established in 1881 by city founder Nathaniel Coburn Carter. The Pioneer Cemetery is a historic burial ground in Sierra Madre, serving as the final resting place for members of twelve of the city's founding families, as well as military veterans from the Civil War through the Vietnam War. The first recorded burial took place in 1882, and the cemetery has since been preserved by the nonprofit Sierra Madre Cemetery Association.

Mills Act

Under California Government Code Sections 50280–50290, known as the Mills Act, local governments can create and manage historic preservation programs. Through these programs, cities may enter into contracts with owners of qualifying historic properties, offering property tax reductions as an incentive to restore, rehabilitate, and maintain these sites. These properties play a vital role in preserving the City's history.

ARCHAEOLOGICAL RESOURCES

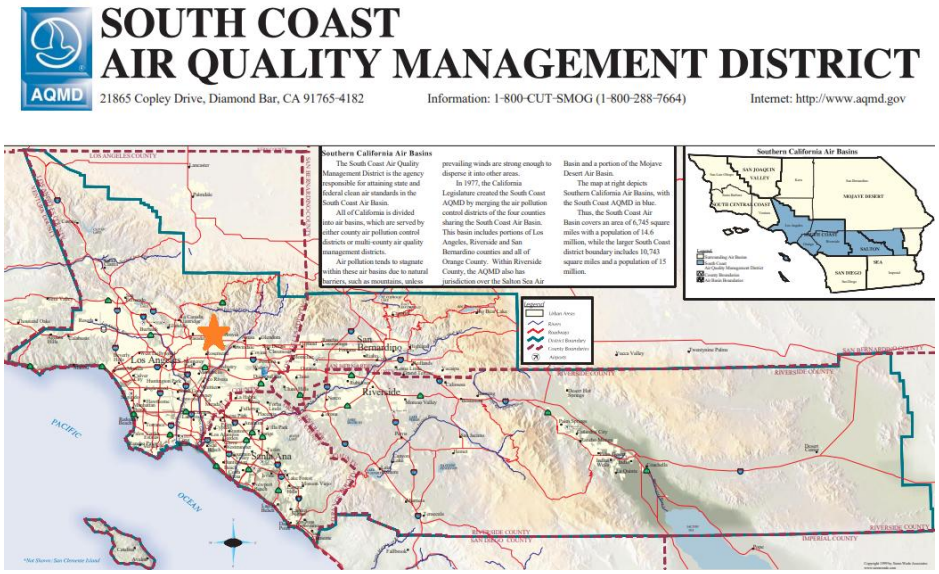
Archaeological resources consist of the physical remnants of past human activity that hold historical, cultural, or scientific significance. These may include artifacts, structural features, sites, and associated records or documentation.

The Planning Area lies within the ancestral territory of the Gabrielino (Tongva) people, a Native American group whose language belongs to the Uto-Aztecan family, which replaced earlier Hokan-speaking populations in the Los Angeles Basin. Historically, Tongva lands encompassed present-day Los Angeles, Orange, and San Bernardino Counties, extending inland into northwestern Riverside County. Tongva settlements were typically located near rivers, wetlands, and coastal areas, including regions associated with the Los Angeles River and its tributaries.

Archaeological evidence of Tongva lifeways may include village sites, burial grounds, lithic tool scatters, shell middens, and ceremonial locations. However, extensive urbanization throughout the Los Angeles Basin has disturbed or destroyed many known archaeological, paleontological, and cultural resources, limiting the preservation of these important historical sites.

AIR QUALITY AND CLIMATE

Land use decisions such as zoning, permitting, and development siting play a key role in supporting local, regional, and state efforts to improve air quality. These decisions can complement air quality regulations and reduce health risks from air pollution, particularly for sensitive land uses and vulnerable populations, including schools, residences, healthcare facilities, the elderly, and individuals with respiratory illnesses. This section provides a framework to guide land use planning and policy development that supports compliance with federal and state air quality standards while promoting healthier communities.



Air Quality Basin

Sierra Madre is situated in the western part of the South Coast Air Basin (SoCAB), which covers all of Orange County and the non-desert areas of Los Angeles, Riverside, and San Bernardino Counties. The basin consists of a coastal plain with broad valleys and low hills, bordered by the Pacific Ocean to the southwest and high mountains along the remaining edges. The region falls under the semi-permanent high-pressure system of the eastern Pacific, giving it a generally mild climate tempered by cool sea breezes. This typically moderate weather may occasionally be interrupted by extreme heat, winter storms, or Santa Ana winds.

Ambient Air Quality

Air quality monitoring in California is conducted by the California Air Resources Board (CARB), local Air Pollution Control or Air Quality Management Districts, private contractors, and the National Park Service. The state operates more than 250 monitoring stations, which typically measure pollutant concentrations at approximately ten feet above ground level.

Within the SoCAB, each monitoring station is located in a designated Source Receptor Area (SRA). Communities within an SRA generally experience similar climatology and ambient pollutant concentrations. Sierra Madre is part of the East San Gabriel Valley Source Receptor Area (SRA 9), where the Pasadena-S Wilson Avenue monitoring station serves as the representative site. This station measures pollutants including ozone (O_3), particulate matter (PM10 and PM2.5), and nitrogen dioxide (NO_2). The primary sources of pollution in this area are mobile sources, such as vehicles, and industrial activities, with additional contributions from local sources like wood burning.

Air pollutants released into the ambient air from both stationary and mobile sources are regulated under federal and state law. Ambient air quality standards (AAQS) have been established by both California and the federal government for several key pollutants, including ozone, carbon monoxide (CO), volatile organic compounds (VOCs), nitrogen oxides (NOx), sulfur dioxide (SO_2), coarse particulate matter (PM10), fine particulate matter (PM2.5), and lead, as shown in ***Table 2***. The SoCAB has historically experienced nonattainment for certain pollutants, particularly ozone and PM2.5, due to a combination of human emissions and natural factors such as topography and climate.

Air Quality Index

In addition to CARB monitoring stations, the U.S. Environmental Protection Agency (EPA) developed the Air Quality Index (AQI) to communicate outdoor air quality and related health risks. The AQI is based on five major pollutants regulated under the Clean Air Act: ozone (O_3), particulate matter (PM_{10} and $PM_{2.5}$), carbon monoxide (CO), nitrogen dioxide (NO_2), and sulfur dioxide (SO_2). The index ranges from 0 to 500 and is divided into six color-coded categories, from Good (0–50) to Hazardous (301–500). Higher AQI values indicate greater air pollution and increased health concerns. As shown in ***Figure 9***, the AQI map representing the average air quality for November 2025, indicates that air quality in the Planning Area is rated Good and does not exceed any National or California Ambient Air Quality Standards (NAAQS or CAAQS).

Air quality in the Planning Area is monitored using data from the Compton and Los Angeles–North stations and reflected in the AQI. Key pollutants include:

Ground-Level Ozone (O_3): While ozone is beneficial in the upper atmosphere, it is harmful at ground level. It forms when reactive organic gases and nitrogen oxides react in sunlight and can irritate the respiratory system and worsen asthma. The Planning Area currently exceeds both NAAQS and CAAQS for ozone.

Particulate Matter (PM_{10} and $PM_{2.5}$): Particulate matter consists of fine particles and droplets from sources such as vehicle emissions, construction activities, road dust, and combustion processes. PM_{10} includes particles smaller than 10 microns, while $PM_{2.5}$ includes finer particles 2.5 microns or smaller. The Planning Area exceeds NAAQS and CAAQS for $PM_{2.5}$ and exceeds CAAQS for PM_{10}.

Carbon Monoxide (CO): CO is a colorless, odorless gas produced by incomplete combustion, primarily from motor vehicles. It reduces oxygen delivery in the bloodstream, causing symptoms such as dizziness and fatigue. CO levels in the Planning Area are below both NAAQS and CAAQS.

Sulfur Dioxide (SO_2): SO_2 is produced by burning sulfur-containing fuels and can cause respiratory irritation, particularly in individuals with asthma. SO_2 levels in the Planning Area are low and meet both NAAQS and CAAQS.

Nitrogen Dioxide (NO_2): NO_2 is a reactive gas and a key precursor to ozone formation. It is commonly emitted from combustion sources such as vehicles and industrial facilities and can cause breathing difficulties at elevated levels. NO_2 levels in the Planning Area are below both NAAQS and CAAQS.

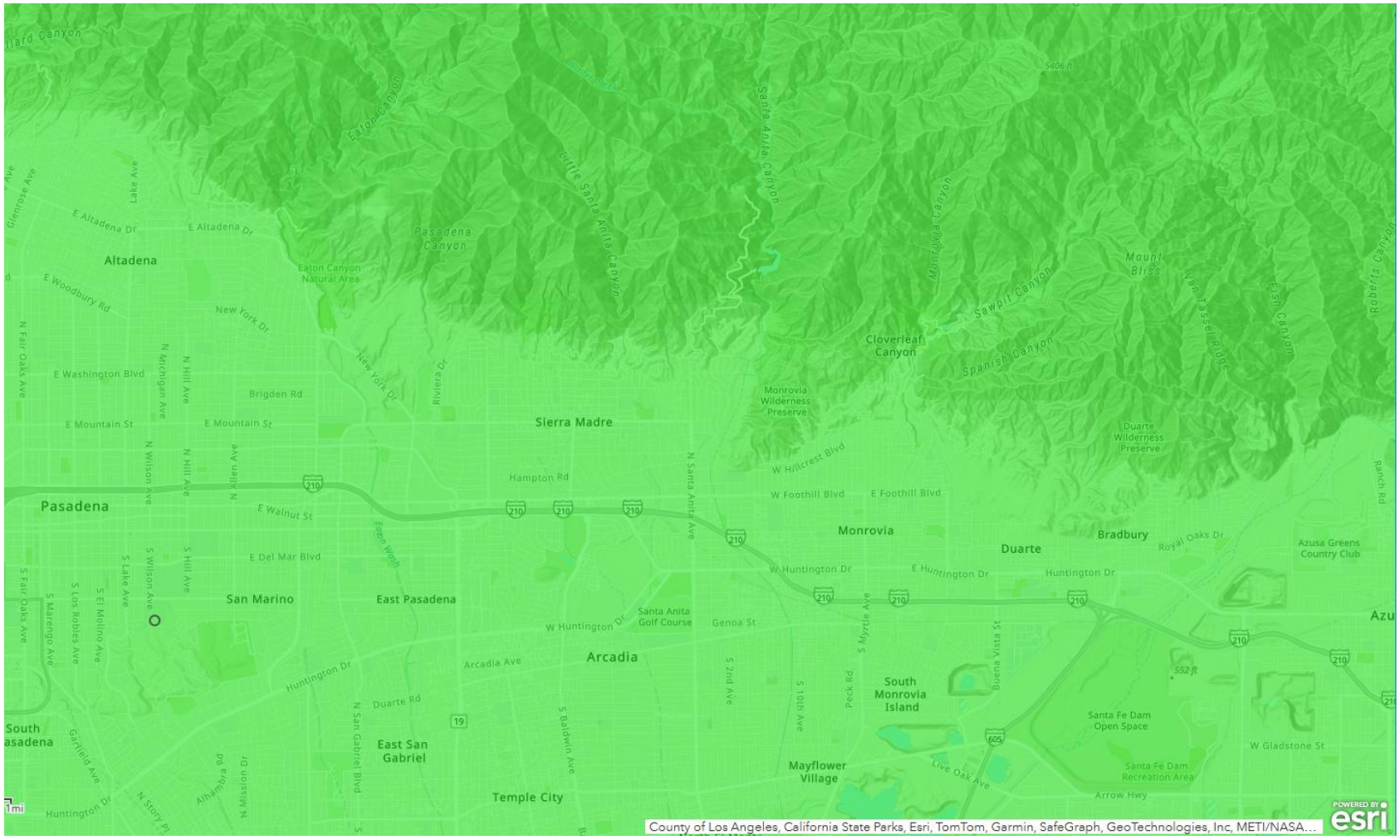
Table 2: Ambient Air Quality Standards for Criteria Pollutants

Criteria Pollutant	Days Exceeding Above Standard	2024 City Data	California Standard	Federal Primary Standard	Pollutant Sources
Ozone (O_3)					
1-hour Maximum Concentration (ppm)	42	0.143	0.09	--	Vehicles, paints, coatings, and solvents
8-hour Maximum Concentration (ppm)		0.099	0.070	0.070	
Carbon Monoxide (CO)					
1-hour Maximum Concentration (ppm)	332	1.4	20.0	35.0	vehicle exhaust, faulty home appliances (furnaces, water heaters, stoves, space heaters), portable generators, and industrial processes
8-hour Maximum Concentration (ppm)		1.1	9.0	9.0	
Nitrogen Dioxide (NO_2)					
1-hour Maximum Concentration (ppm)	42	0.062	0.18	0.053	combustion of fossil fuels in vehicles (cars, trucks, buses), power plants, and industrial facilities.
Annual Day Average		0.038	0.30	0.100	
Respirable Fine Particulate Matter ($PM_{2.5}$)					
Annual Maximum Concentration ($ug/m^{3)}$		N/A	12.0	9.0	

Criteria Pollutant	Days Exceeding Above Standard	2024 City Data	California Standard	Federal Primary Standard	Pollutant Sources
24-hour Maximum Concentration (ug/m^3)	--	117.3	35.0	35.0	vehicle exhaust (especially diesel), industrial emissions, power plants, wildfires, residential wood burning, and, indoors, cooking, candles, smoking, and cleaning products.
Respirable Course Particulate Matter (PM_{10})					
Annual (ug/m^3)	--	N/A	50.0	--	dust, smoke, mold, and pollen
24-hour Maximum Concentration (ug/m^3)		117.3	20.0	150.0	
Lead (Pb)					
8-hour Maximum Concentration (ug/m^3)	--	N/A	10.0	50.0	lead-based paint, contaminated soil/dust, leaded gasoline emissions, industrial processes (smelters, battery plants), and leaded water pipes/solder.
Calendar Quarterly (ug/m^3)		N/A	15.0	15.0	
Sulfates (SO_4)					
24-hour Maximum Concentration (ug/m^3)	--	N/A	25.0	--	natural geological formations, coal combustion, industrial waste, mining drainage, and agricultural fertilizers.

Criteria Pollutant	Days Exceeding Above Standard	2024 City Data	California Standard	Federal Primary Standard	Pollutant Sources
Hydrogen Sulfide					
1-hour Maximum Concentration (ppm)	--	N/A	0.03	--	oil/natural gas refining, wastewater treatment, landfills, paper mills, and animal waste.
Vinyl Chloride					
8-hour Maximum Concentration (ppm)	--	N/A	01.0	01.0	industrial emissions from manufacturing plants, chemical leaks, and improper hazardous waste disposal
24-hour Maximum Concentration (ppm)		N/A	10.0	--	
NAAQS = National Ambient Air Quality Standards; CAAQS = California Ambient Air Quality Standards; ppm = parts per million. µg/m^3 = micrograms per cubic meter; – = not measured; N/A = Data Not Provided					
Notes: Measurements taken at the Pasadena-S Wilson Ave. located at 752 S Wilson Ave, Pasadena, CA 91702 (CARB# 70088)					
Source: All pollutant measurements are from the CARB Aerometric Data Analysis and Management system database (https://www.arb.ca.gov/adam) except for CO, which was retrieved from the CARB Air Quality and Meteorological Information System (https://www.arb.ca.gov/aqmis2/aqdselect.php).					

Figure 9: Air Quality Index Map



AQI is calculated using EPA's NowCast method, which emphasizes recent levels when conditions change rapidly. During fires, AQI may not reflect the latest smoke conditions. If you can smell smoke or see ash from a wildfire, avoid or limit outdoor activities.

AQI

- Hazardous (301-500)
- Very Unhealthy (201-300)
- Unhealthy (151-200)
- Unhealthy for Sensitive Groups (101-150)
- Moderate (51-100)
- Good (0-50)

Air Quality Index (AQI) values are determined using a technique developed by South Coast AQMD scientists and published in a peer-reviewed scientific journal that is considerably more accurate than other methods. **This method blends measurements from high-quality regulatory monitors, hundreds of quality-controlled and calibrated low-cost sensors, and an air quality model.**

Areas often overlap multiple cities and/or neighborhoods. The area name containing your address may display as a nearby city, neighborhood, or landmark, however, the air quality information provided is still the most accurate for your location.

**Index Map represents the average air quality for November 2025.*

GREENHOUSE GASES AND GLOBAL CLIMATE CHANGE

Climate Change

Climate change refers to long-term shifts in typical weather conditions, including rising temperatures, changing precipitation patterns, and an increase in extreme weather events. These changes may occur naturally or be influenced by human activities. Natural climate variability often stems from gradual variations in Earth's orbit, which alter the amount of sunlight the planet receives. Human activities, however, now play a major role by releasing heat-trapping gases into the atmosphere and transforming natural landscapes through deforestation and mass development.

In Sierra Madre, climate change is expected to intensify heat, prolong drought, and increase wildfire risk across the foothill landscape. More frequent extreme heat days and warmer nights may elevate public health risks, strain vegetation, and stress the City's tree canopy and native habitats. Extended dry seasons combined with episodic intense storms may increase erosion, reduce soil moisture, and disrupt natural drainage systems, particularly in post-fire conditions. Warmer, drier vegetation and longer fire seasons heighten the likelihood of large wildfires in the foothills, which can temporarily fragment habitat, displace wildlife into developed areas, and amplify risks of debris flows and flooding. Together, these impacts will challenge both ecological systems and the built environment, requiring integrated, forward-looking planning responses.

In coordination with the Safety Element, the Conservation Element can reduce climate-related risks by reinforcing natural systems as protective buffers. Policies that protect foothill open space and habitat linkages, promote drought-tolerant native landscaping, and sustain a resilient urban tree canopy can moderate heat, support biodiversity, and improve overall ecosystem health. Additional measures such as vegetation management that balances fuel reduction with habitat retention, expansion of pollinator and wildlife corridors, and integration of green infrastructure to enhance infiltration and limit erosion further strengthen the City's capacity to adapt to wildfire, heat, and changing precipitation patterns.

Greenhouse Gases

Greenhouse gases (GHGs) are atmospheric gases that trap heat from the sun and warm the earth in a 'greenhouse' effect, similar to glass in a greenhouse. The main greenhouse gases linked to climate change include:

- carbon dioxide (CO_2),
- nitrogen dioxide (NO_2),
- methane (CH_4),
- hydrofluorocarbons (HFCs),
- perfluorocarbons (PFCs),
- chlorofluorocarbons (CFCs),
- sulfur hexafluoride (SF_6),
- hydrochlorofluorocarbons (HCFCs), and
- nitrogen trifluoride (NF_3).

While GHGs are essential for maintaining the planet's temperature, human activities have increased their concentrations beyond natural levels, intensifying the greenhouse effect and driving global climate change. In

response, Sierra Madre must address GHG emissions through conservation policies and sustainable land use and mobility practices that protect natural resources, public health, and long-term environmental resilience. Because a significant portion of local emissions comes from traffic and automobiles, future development should reduce vehicle dependence, ease congestion, enhance walkability and bikability, and lower overall greenhouse gas emissions in accordance with the Circulation Policies of the General Plan and the VMT thresholds established via Transportation Study Guidelines for Vehicle Miles Traveled Assessment (2024). The City may also consider developing and adopting a Multimodal Mobility Plan to further help reduce GHG emissions.

Dark Sky

Dark sky refers to a night sky in which stars and other natural celestial features remain visible due to minimal artificial light. Reducing light pollution enhances nighttime visibility and preserves the clarity of the night sky. Sierra Madre contains significant natural areas, particularly in the foothills and mountainous regions, where dark skies are an important environmental and aesthetic resource. Excessive or poorly designed outdoor lighting can contribute to light pollution, diminishing views of the night sky and altering the natural nighttime landscape.

Sierra Madre has taken steps to address light pollution through its existing lighting ordinance, which includes dark-sky–oriented provisions such as shielding requirements, directing light downward, and minimizing glare and light spill onto adjacent properties. These standards help reduce skyglow, protect neighborhood character, and limit unnecessary nighttime illumination near foothill open space areas. By incorporating basic dark-sky language into its development regulations, the City has acknowledged the importance of preserving nighttime conditions in a foothill community that values wildlife, natural landscapes, and views of the night sky.

To further strengthen its dark-sky commitment, Sierra Madre could adopt clearer performance standards, such as maximum lumen limits, lower color temperature requirements (e.g., warm-spectrum lighting), and stricter illumination caps near the urban–wildland interface. Expanding requirements for motion sensors, time-of-night dimming, and lighting buffers adjacent to open space would better support wildlife movement and reduce ecological disruption. The City could also establish retrofit triggers for nonconforming fixtures during major renovations and ensure that public infrastructure such as streetlights and park lighting, meets the same standards. These refinements would move the ordinance from general intent to measurable performance, reinforcing both community character and ecological resilience.

GOALS, POLICIES, AND ACTIONS

Goal C-1: Protect, maintain, and expand Sierra Madre's hillside and foothill environments to preserve natural open space, environmental quality, scenic character, ecological resources, and public safety.

Policy C-1.1: The City shall protect hillside areas to preserve their natural landforms, scenic character, environmental quality, and ecological resources.

Action C-1.1.1: Enforce and update at least every five years or following major wildfire events, the Hillside Management Zone Ordinance and related regulations to ensure continued protection of hillside areas including alignment with current State regulations and best practices for grading, vegetation retention, and wildfire risk reduction.

Action C-1.1.2: Coordinate with neighboring foothill communities and regional agencies in the San Gabriel Valley on an ongoing basis, with a minimum of one formal coordination meeting annually, to explore opportunities for protecting a continuous hillside and habitat corridor along the San Gabriel Mountains and document coordination outcomes and next steps.

Action C-1.1.3: Update the City's grading and hillside development standards to include slope-specific disturbance thresholds, erosion control requirements, and vegetation retention standards to minimize soil instability and erosion in hillside areas.

Action C-1.1.4: Amend development standards and design guidelines for hillside areas to establish measurable limits on grading, require preservation of natural landforms, and require retention or replacement of native vegetation, with clear review criteria applied during project entitlement.

Policy C-1.2: The City shall support partnerships with conservancies, land trusts, and public agencies to acquire, protect, and manage hillside properties for natural open space and habitat conservation.

Action C-1.2.1: Support the Sierra Madre Mountain Conservancy and other conservation organizations in pursuing funding opportunities to acquire hillside properties and continue to provide public access to the San Gabriel Mountains through parks and trails.

Action C-1.2.2: Continue to designate properties acquired for conservation purposes as natural open space through General Plan land use designations and/or zoning and facilitate the use of conservation easements or similar mechanisms to secure permanent protection.

Action C-1.2.3: Continue to explore funding mechanisms such as grants, partnerships, bond programs, or assessment districts to support acquisition and long-term management of hillside open space and maintain a list of priority funding sources and application cycles.

Action C-1.2.4: Coordinate with public agencies and environmental organizations to identify and prioritize hillside lands for long-term conservation.

Action C-1.2.5: Develop criteria to prioritize land acquisition and conservation efforts based on factors such as habitat value, wildfire risk reduction, watershed function, and connectivity to existing protected lands and maintain an updated inventory of priority conservation areas to guide acquisition and funding efforts.

Policy C-1.3: The City shall protect foothill and wildland open space areas to reduce wildfire and flood hazards, maintain watershed functions, and support groundwater recharge.

Action C-1.3.1: Collaborate with watershed organizations, including the Council for Watershed Health to implement watershed protection and restoration initiatives, and develop public education programs focused on watershed function, stormwater management, and erosion prevention.

Action C-1.3.2: Maintain wildland open space areas, including lands within High Fire Hazard Severity Zones, through coordinated vegetation management programs that balance fuel reduction with habitat preservation, in collaboration with fire agencies and regional partners, and conduct regular inspections and maintenance activities.

Action C-1.3.3: Develop and adopt Wildland-Urban Interface (WUI) design guidelines, in coordination with the Safety Element, that integrate site planning, fuel modification, defensible space, and fire-resistant materials with ecologically sensitive approaches, including the use of native and drought-tolerant vegetation, habitat-friendly fuel management techniques, and landscape design that reduces wildfire risk while maintaining biodiversity, watershed function, and slope stability.

Action C-1.3.4: Update and coordinate existing provisions of the Municipal Code related to grading, drainage, hillside development, and Low Impact Development to address hillside conditions, including criteria for slope-sensitive infiltration, use of green infrastructure in appropriate public and open space areas, and post-wildfire stormwater and erosion response measures that protect groundwater recharge, slope stability, and watershed function.

Goal C-2: Protect and enhance Sierra Madre's wildlife habitat and connectivity, native vegetation, urban forest, and natural environmental conditions while supporting safe coexistence between residents and wildlife.

Policy C-2.1: The City shall promote community awareness and stewardship to support safe coexistence between residents and wildlife in Sierra Madre's urban-wildland interface.

Action C-2.1.1: Promote public awareness that Sierra Madre is an urban-wildland interface where residents share space with wildlife through

ongoing outreach campaigns, including signage, social media, and community events.

Action C-2.1.2: Support grassroots community initiatives that encourage peaceful coexistence between residents and wildlife by providing technical information, coordination support, and where feasible, small grant or partnership opportunities.

Action C-2.1.3: Publicize Sierra Madre's designation as a Wildlife Sanctuary under Resolution 72-62 and evaluate opportunities to update or reaffirm this designation to reflect current conservation goals, State regulations, and community priorities.

Action C-2.1.4: Distribute educational materials through the City's website, social media, publications, and community outreach programs explaining how residents can safely coexist with wildlife.

Action C-2.1.5: Provide information on wildlife-proofing homes and properties and on compliance with State laws prohibiting the trapping, killing, or relocation of wildlife including practical guidance on fencing, lighting, landscaping, and waste management practices.

Action C-2.1.6: Coordinate with California Department of Fish and Wildlife and other relevant agencies to provide updated guidance on wildlife behavior, conflict avoidance, and habitat protection strategies specific to Sierra Madre's foothill context.

Policy C-2.2: The City shall protect wildlife habitat and habitat connectivity while implementing measures that reduce human-wildlife conflicts within Sierra Madre's urban-wildland interface.

Action C-2.2.1: Enforce regulations prohibiting spiked iron fencing and other features that impede wildlife movement and periodically review development standards to identify and remove additional barriers to wildlife movement.

Action C-2.2.2: Encourage property owners to modify existing fences, structures, or site features to improve safe wildlife passage through outreach, design guidance, and incentive-based programs where feasible.

Action C-2.2.3: Maintain wildlife-resistant garbage containers in areas with high wildlife activity through the City's waste collection program.

Action C-2.2.4: Maintain and disseminate information regarding areas of high wildlife activity to promote safe coexistence practices using mapping tools, City website updates, and coordination with regional agencies.

Action C-2.2.5: Consider wildlife movement corridors and regional habitat connectivity areas when reviewing development proposals in hillside and foothill areas.

Action C-2.2.6: Develop and disseminate design guidelines for landscaping and site planning that incorporate native vegetation and support wildlife movement and habitat connectivity.

Action C-2.2.7: Require development proposals in hillside and foothill areas to evaluate the presence of special-status species, sensitive

habitats, and designated Significant Ecological Areas consistent with CEQA and applicable State regulations.

Action C-2.2.8: Consider pollinator-supporting landscaping through the use of native and climate-appropriate plant species when designing streetscapes, trails, parks, and other public projects and encourage private developments to follow similar practices by providing guidance materials to residents and developers.

Action C-2.2.9: Enhance existing municipal code provisions related to existing fencing, lighting regulations, and site design to better support wildlife movement and habitat connectivity in hillside and foothill areas and evaluate the feasibility of a Wildlife Corridor Overlay to protect key habitat linkages.

Action C-2.2.10: Develop a voluntary community-based reporting tool to collect information on wildlife sightings and conflicts to help identify patterns and inform outreach and policy responses.

Policy C-2.3: The City shall protect, maintain, and enhance Sierra Madre's urban forest to support ecological health, climate resilience, and community character.

Action C-2.3.1: Continue to enforce the City's Tree Preservation Ordinance and update it at least every five years or as needed to reflect current arboriculture standards, climate resilience goals, and development practices.

Action C-2.3.2: Track advancements in arboriculture practices and integrate relevant tree care and maintenance techniques into City operations and community education programs.

Action C-2.3.3: Develop and implement the Community Forest Management Plan including defining planting strategy, identifying priority areas, establishing long-term funding/maintenance framework, and include performance metrics.

Action C-2.3.4: Maintain and periodically update the City's recommended tree palette for parks, parkways, and other public landscapes to prioritize drought-tolerant, climate-resilient, and habitat-supporting species.

Action C-2.3.5: Maintain and periodically update an inventory of trees located on City property, including parkways, parks, and other public lands, and use the inventory to inform maintenance, replacement, and expansion strategies.

Action C-2.3.6: Provide educational materials and programs that inform residents about tree care, maintenance, and preservation practices including guidance on species selection, water conservation, and climate resilience.

Action C-2.3.7: Retain or consult a qualified arborist or tree expert as needed to assist the City with tree health, pruning, disease identification, and evaluation of potential impacts to trees during development or grading activities.

Action C-2.3.8: Monitor development and construction activities to protect significant and mature trees during grading and construction and enforce compliance with applicable tree protection measures, while

allowing removal and replacement of non-significant trees consistent with City standards.

Action C-2.3.9: Promote participation in programs that recognize and protect significant or heritage trees.

Action C-2.3.10: Identify and pursue funding sources to support maintenance of the City's tree canopy while improving species composition by prioritizing fire-resistant, drought-tolerant trees and reducing wildfire risk in hillside and wildland-urban interface areas.

Action C-2.3.11: Encourage community participation in tree planting, maintenance, and urban forest stewardship programs through volunteer programs, partnerships, and public outreach initiatives.

Goal C-3: Protect Sierra Madre's dark night skies and scenic nighttime character.

Policy C-3.1: The City shall regulate and promote outdoor lighting practices that minimize light pollution, glare, and light trespass while maintaining appropriate nighttime lighting for safety, functionality, and community character and supporting habitat protection and energy efficiency.

Action C-3.1.1: Require outdoor lighting fixtures for new development to be shielded and directed downward to prevent light spillage onto adjacent properties or into the night sky.

Action C-3.1.2: Update the City's dark sky lighting provisions to require motion-sensor controls, timers, and other technologies that reduce unnecessary nighttime lighting.

Action C-3.1.3: Build upon existing municipal code standards including lighting in streets, alleys, parks, and public spaces, to promote the use of appropriate lighting levels that minimize glare and light trespass while supporting safety and functionality and encourage energy-efficient lighting technologies consistent with State requirements.

Action C-3.1.4: Encourage businesses and property owners to reduce exterior lighting during non-operating hours

Action C-3.1.5: Provide educational materials and outreach to increase community awareness of dark sky protection and responsible outdoor lighting practices including guidance on fixture types, lighting placement, and energy-efficient technologies.

Action C-3.1.6: Periodically review and update outdoor lighting standards in the Municipal Code to reflect current dark sky best practices, lighting technologies, and energy efficiency standards.

Action C-3.1.7: Review and consolidate existing outdoor lighting provisions within the Municipal Code to improve clarity, consistency, and alignment with current dark sky and energy efficiency best practices.

Goal C-4: Preserve, conserve, and responsibly manage Sierra Madre's natural resources.

Policy C-4.1: The City shall protect surface water and groundwater resources through stormwater management, groundwater recharge, and regional groundwater basin management.

Action C-4.1.1: Protect settling basins and other facilities used for groundwater recharge through coordination with Los Angeles County and incorporation of protection measures into City planning and capital improvement activities.

Action C-4.1.2: Support and implement projects and policies that capture stormwater and support groundwater recharge in coordination with Los Angeles County and regional agencies.

Action C-4.1.3: Evaluate opportunities to use reclaimed water in coordination with regional water providers to irrigate public landscapes, where infrastructure and supply are available and feasible.

Action C-4.1.4: Coordinate with Los Angeles County Public Works to optimize groundwater recharge at debris basins and other facilities.

Action C-4.1.5: Review and update existing Low Impact Development (LID), grading, and stormwater standards to better address hillside conditions and support groundwater recharge through slope-sensitive infiltration practices, reduced impervious surfaces, and integration of green infrastructure in public and private projects.

Action C-4.1.6: Coordinate with the Raymond Basin Management Board (Watermaster) and regional partners to support sustainable groundwater basin management including participation in basin planning, data sharing, and implementation efforts.

Action C-4.1.7: Collaborate with regional groundwater producers, including the City of Arcadia, to address overdraft conditions in the Raymond Basin.

Action C-4.1.8: Continue to implement National Pollutant Discharge Elimination System (NPDES) and Municipal Separate Storm Sewer System (MS4) permit requirements and other water quality protection measures to protect surface water quality protection measures in coordination with regional agencies.

Action C-4.1.9: Develop public education and outreach programs related to water quality and watershed protection including information on stormwater pollution prevention, hillside erosion, and post-wildfire runoff risks.

Action C-4.1.10: Continue to enforce and periodically update low impact development (LID) practices and stormwater pollution prevention measures for new development and major renovation projects consistent with applicable State and regional stormwater regulations.

Action C-4.1.11: Coordinate existing grading, drainage, and LID standards to better address hillside conditions, including slope-sensitive infiltration, erosion control, and post-wildfire stormwater management.

Policy C-4.2: The City shall promote efficient water use and ensure reliable water supply through conservation programs, drought response measures, and sustainable management of the City's water system.

Action C-4.2.1: Maintain water rate structures that support water system operations, infrastructure maintenance, and efficient water use.

Action C-4.2.2: Maintain and periodically update a capital improvement program for the City's water treatment and delivery system to address aging infrastructure, regulatory requirements, and future demand.

Action C-4.2.3: Review and update development and landscaping standards to ensure consistency with the State Model Water Efficient Landscape Ordinance (MWELO), promote water-efficient landscaping, and encourage the use of native vegetation that supports local habitat.

Action C-4.2.4: Maintain and periodically update the City's Urban Water Management Plan every five years, consistent with State requirements.

Action C-4.2.5: Evaluate water supply availability during review of development proposals to ensure adequate long-term water resources consistent with State requirements, City's Urban Water Management Plan, and regional supply conditions.

Action C-4.2.6: Implement water conservation measures during drought conditions, including restrictions on nonessential water uses and public education programs.

Policy C-4.3: The City shall promote waste reduction, recycling, and responsible waste management to protect environmental quality and conserve natural resources.

Action C-4.3.1: Maintain contracts with qualified waste haulers to provide reliable solid waste collection services for residential, commercial, and institutional uses.

Action C-4.3.2: Provide recycling services for residential and commercial customers and support waste diversion programs.

Action C-4.3.3: Provide opportunities for the disposal of bulky household items through the City's contracted waste hauler including outreach to increase awareness and participation.

Action C-4.3.4: Continue to enforce construction and demolition recycling requirements consistent with State regulations and encourage the reuse of salvaged and recycled materials in new development and City projects.

Action C-4.3.5: Encourage the use of recycled and post-consumer materials in City operations.

Action C-4.3.6: Promote composting, green waste recycling, and organic waste diversion programs that reduce landfill disposal and support compliance with State waste reduction requirements.

Action C-4.3.7: Continue to implement State organic waste diversion requirements and support programs that reduce landfill disposal of organic materials.

Action C-4.3.8: Require use of wildlife-resistant trash containers in areas with high wildlife activity support proper use through coordination with the City's contracted waste hauler, public education, and targeted enforcement of container closure requirements where needed.

Action C-4.3.9: Coordinate with Los Angeles County to provide household hazardous waste collection and expand public education programs on proper disposal practices.

Action C-4.3.10: Maintain waste management services necessary to serve existing and future development, including public trash receptacles and street sweeping.

Goal C-5: Protect and improve air quality in Sierra Madre to safeguard public health and reduce emissions from transportation, land use, and other sources.

Policy C-5.1: The City shall support regional air quality improvement efforts and reduce emissions from transportation and land use activities.

Action C-5.1.1: Coordinate with the South Coast Air Quality Management District and support implementation of the Air Quality Management Plan.

Action C-5.1.2: Continue to enforce applicable South Coast Air Quality Management District regulations related to air pollutant emissions and thresholds.

Action C-5.1.3: Participate in regional initiatives and public programs that improve air quality and reduce emissions.

Action C-5.1.4: Promote transportation demand management strategies that reduce vehicle trips and vehicle miles traveled, including transit, carpooling, and ridesharing in coordination with the City's circulation policies and regional transportation planning efforts to reduce transportation-related emissions and improve air quality.

Action C-5.1.5: Coordinate with future updates to the circulation policies to incorporate multimodal transportation planning consistently that includes strategies that support walking, bicycling, and reduced vehicle dependence to improve air quality.

Action C-5.1.6: Support the transition of municipal fleets to zero-emission vehicles through phased vehicle replacement, infrastructure planning, and funding opportunities.

Action C-5.1.7: Encourage energy-efficient buildings, renewable energy systems, and electrification technologies that reduce energy consumption and greenhouse gas emissions.

Action C-5.1.8: Encourage land use patterns that reduce vehicle trips and associated emissions, including mixed-use development and opportunities for home-based businesses and telecommuting.

Action C-5.1.9: Continue to provide fixed-route local transit services and enhance outreach and marketing efforts, including social media, to increase awareness, improve ridership, and reduce reliance on personal vehicle travel.

Action C-5.1.10: Pursue funding opportunities for transit facilities, services, and programs in coordination with regional transit providers.

Policy C-5.2: The City shall minimize localized air pollution and protect public health through dust control measures, equipment standards, and regulation of indoor and outdoor air pollutants particularly near sensitive receptors.

Action C-5.2.1: Review and update regulations related to gas-powered landscaping equipment and similar emission sources consistent with State regulations and promote the transition to low-emission and electric equipment through City operations, contracting practices, and community education.

Action C-5.2.2: Continue to require dust control measures as part of grading and construction permits, including best management practices to minimize emissions.

Action C-5.2.3: Continue to enforce regulations that control fugitive dust emissions from construction and other activities through inspections, compliance monitoring, and corrective actions.

Action C-5.2.4:Evaluate and support programs or regulations that address secondhand smoke and other indoor air pollutants in multi-family housing.

Action C-5.2.5: Promote public awareness of air quality issues, including exposure reduction strategies during poor air quality events such as wildfires and high ozone days.

New Goal C-6: Protect and preserve Sierra Madre's historic, archaeological, and cultural resources.

Policy C-6.1: The City shall protect and preserve historic, archaeological, tribal cultural, and other significant cultural resources in Sierra Madre.

Action C-6.1.1: Maintain and implement procedures for designation, review, and preservation of local historic resources consistent with the Municipal Code and applicable preservation standards.

Action C-6.1.2: Continue to administer the Mills Act program, where feasible, to incentivize preservation and rehabilitation of qualifying historic properties consistent with adopted program guidelines.

Action C-6.1.3: Promote public awareness of Sierra Madre's historic and cultural resources through educational programs, social media, interpretive materials, and community events.

Action C-6.1.4: Support installation and maintenance of plaques, markers, or interpretive displays at significant historic and cultural sites, including where appropriate along the Mt. Wilson Trail, Pioneer Cemetery, and other recognized landmarks.

Action C-6.1.5: Require archaeological resource assessments for development proposed on large, previously undeveloped, or archaeologically sensitive sites, consistent with CEQA.

Action C-6.1.6: Require that if archaeological resources are identified during site investigation or construction, work in the vicinity shall stop and the City shall require evaluation by a qualified archaeologist and consultation with Native American tribes, as applicable, before work resumes.

Action C-6.1.7: Evaluate opportunities for preservation, adaptive reuse, conservation easements, or other protective measures for significant historic structures and sites where feasible and consistent with available funding.

Action C-6.1.8: Coordinate preservation planning for historic resources that also serve recreational, scenic, or community functions, including trails, parks, cemeteries, and civic landmarks.