Chapter 8:
SAFETY ELEMENT

Arcadia General Plan

Introduction

Community safety issues influence many decisions people make, from big decisions such as where to live or spend leisure time, to small decisions such as identifying the time of day they feel comfortable walking alone. When thinking about where to buy a home, people may consider whether a hillside location near a wildfire zone is of concern. In budgeting decisions, elected bodies allocate funds to fire and law enforcement services commensurate with overall public safety objectives. Knowing the hazards present in a community and establishing safety standards is critical to these decision processes. By identifying threats to our safety, we can better guard against disasters and develop effective response plans.

This Safety Element identifies, evaluates, and addresses local and regional safety issues and establishes the goals, policies, and actions that will help reduce loss of life, injuries, property loss, environmental damage, and social and economic disruption from natural and human-caused disasters. These issues are addressed within the context of:

- Environmental hazards
- Human-caused hazards
- Threats to national security
- Emergency services
- Emergency preparedness
- Chronic climate hazards

The goals, policies, and programs in this element are shaped around three approaches that are integral to Arcadia's plan for a safe community: (1) mitigating hazards and threats through careful planning, (2) being prepared to respond to any and all crisis situations to minimize injury or loss, and (3) educating the public of best safety practices so that the community does its part to improve public safety.

Achieving Our Vision

Residents and businesses look to the City of Arcadia (City) to protect the community from threats to public safety. Maintaining a safe community requires constant assessment of Arcadia's needs regarding emergency preparedness and hazards mitigation. While the City has no control over earthquakes or landslides, it can establish policies that minimize impacts from these hazards.

Keeping Arcadia safe is a theme addressed throughout the General Plan. The Land Use and Community Design Element limits the range of land uses allowed in hazardous areas to reduce the number of people and buildings exposed to risk. Objectives and policies in the Circulation and Infrastructure Element aim to make Arcadia a safe place to drive, bike, and walk. The Noise Element establishes policies and priorities to protect residents from noise related to traffic and business operations.

Our vision is to create a city where residents and businesses are and feel safe. In Arcadia, we go to work, school, and shop knowing that our police and fire departments, as well as many volunteers and involved residents, safeguard our homes, places of business, and local institutions. The City of Arcadia is committed to public safety and creating a community where exposure of residents and businesses to hazards is minimized. The City incorporates public safety considerations into its planning and decision-making processes. The City is committed to providing rapid and effective emergency response and coordinating with regional agencies toward these objectives. following guiding principle reflects our commitment to providing the necessary services to create safe environments citywide:

City Services

The high-quality services the City provides are a source of civic pride and bring us together as a community. We adjust service needs in response to demographic changes and we take actions to provide funding to support these services.

Scope of this Element

The Safety Element is one of the General Plan elements required by State law. The City has long emphasized a proactive approach to public safety planning, which involves identifying and avoiding or mitigating hazards present in the environment that may adversely affect property and threaten lives. California Government Code Sections 65317.2(g) and 65302(f) identify several issues to consider in such planning efforts, as does California Health and Safety Code Section 56050.1. In Arcadia, issues of concern are as follows:

- Seismic hazards, including seismically induced surface rupture, ground shaking, and ground failure
- Dam/reservoir failure
- Non-seismic ground failure such as slope instability leading to mudslides, landslides, ~~and~~ liquefaction, and debris flows
- Flooding
- Wildland and urban fires
- Presence and transport of hazardous materials
- Law enforcement and crime prevention
- Emergency services
- Extreme heat

The City's Local Hazard Mitigation Plan works in tandem with this Safety Element to assess and address hazards. Local Hazard Mitigation Plans must meet certain Federal requirements, whereas Safety Elements follow State requirements. Both plans include policies and actions for the City to undertake, which means that consistency across plans is important. As allowed by California Government Code Section 65302.6, this Safety Element adopts the Local Hazard Mitigation Plan and all future updates by reference, and the Local Hazard Mitigation Plan can be found on the City's website.

Environmental Law and Changes in Climate Influencing Safety

Through the passage of Senate Bill 379, the State of California directed cities to evaluate and address the projected impacts of a changing climate in safety elements and develop policies that adapt to the changing conditions. Over the next century, increasing atmospheric greenhouse gas concentrations may cause a variety of changes to local climate conditions, including changes in precipitation and higher temperatures. These factors, either individually or in combination, may contribute to an increase in the frequency and intensity of secondary local climate effects such as human health hazards, drought, extreme heat events, extreme precipitation and flooding, debris flow, landslides, and wildfires.

In 2024, the City undertook revisions to the Safety Element to address Senate Bill 379 and strive to become a more climate resilient city. Addressing climate change requires local governments to consider an integrated approach in developing strategies to reduce vulnerability to projected climate change effects, increase the local capacity to adapt, and build resilience. A climate resilient city is one that is prepared to maintain a continuity of essential services and functions while protecting the most vulnerable during hazardous events and continually adapting in the face of change.

As a part of the City's integrated approach, the flooding and wildfire sections of the Safety Element were revised to include climate change projections, updated data, and best practice policies and implementation actions. Emerging hazards, such as extreme heat and debris flows, were added as new hazards. **Table S-1** is provided as a tool to help the reader understand the relationship of climate change to both existing and emerging hazards within Arcadia, as well as where to locate climate resilience policies.

TABLE S-1. READER'S GUIDE TO CLIMATE RESILIENCE IN THE SAFETY ELEMENT

Hazard	Relationship to Climate Change	Section of Safety Element (Associated Goal)
Debris Flows	Emerging and potentially increasing due to climate change	Emerging Hazards (S-3)
Extreme Heat	Emerging and potentially increasing due to climate change	Emerging Hazards (S-2)
Flooding	Existing and impacted by climate change	Environmental Hazards (S-5)
Fire	Existing and impacted by climate change	Environmental Hazards (S-6)

TABLE S-1. READER'S GUIDE TO CLIMATE RESILIENCE IN THE SAFETY ELEMENT

Hazard	Relationship to Climate Change	Section of Safety Element (Associated Goal)
Fire Protection and Emergency Services	Existing and impacted by climate change	Emergency Services (S-8)
Emergency Preparedness	Existing and impacted by climate change	Emergency Preparedness (S-9)

Vulnerabilities

Climate change does not affect all people equally, leading to some to be more vulnerable than others. For example some people have physical conditions that make them more sensitive to heat or cause them to need assistance when evacuating. Other households may lack the socio-economic resources to prepare for or recover from hazards. Structures and infrastructure can also be especially vulnerable to certain aspects of climate change due to their location or features. These vulnerabilities and their prevalence in Arcadia are described below.

Populations

People with Disabilities

People with disabilities are medically vulnerable and can have a challenging time evacuating, making them vulnerable to wildfire and flooding. Disabilities can range from having difficulty moving around or requiring a service animal to relying on medical equipment to survive. Specific evacuation plans or databases and services that address the needs of people with disabilities can address this vulnerability. Approximately 9% of the residents of Arcadia are disabled, which is less than the percentage in the state as a whole.

Limited English-Speaking Households

Households with no adult English speakers can have a difficult time accessing public health information, making them vulnerable to all hazards. Translating materials into all relevant languages, as well as working with places of worship and other organizations that serve these residents, is important to effectively disseminate hazard and hazard response information. In California, approximately 9% of households have limited English skills, while 17% of the households in Arcadia have limited English skills (with regards to residents five years of age and older, 30.7% of Arcadians compared to 17.9% of Californians are limited English speakers). The vast majority of these households primarily speak an Asian or Pacific Island language.

Low-Income Households

Low-income households are vulnerable to several hazards, and the lower a household's income, the more at risk they will be. Extreme heat can be more detrimental to low-income households because they may not have air conditioning or may not be able to afford running their air conditioning. This can lead to heat-related health issues. Additionally, destructive hazards like flooding or wildfires can destroy possessions and require expensive repairs that low-income households may not be able to afford. This means issues like hazard-driven displacement are more likely for low-income households. These issues can be remedied to a degree by offering programs for income- qualified households, such as utility cost reductions or various forms of post-disaster assistance.

As of 2024, the area median income for four-person households in the Los Angeles Metropolitan Area was $98,200. According to the U.S. Department of Housing and Urban Development, low-income households make between 50% and 80% of the area median income, and very low-income households make below 50%. By these standards, approximately 15% of households in Arcadia are considered low-income, and 25% of households are considered very low-income. These percentages are similar to the State of California as a whole, but still represent a major group of vulnerable people in Arcadia.

Renters

Renters are less likely to invest in their homes, such as by upgrading to fire-safe building materials. Renters are also more likely to be displaced after a hazard as they are often under-insured and cannot access recovery benefits available to homeowners. These characteristics make renters more vulnerable to wildfire. Approximately 40% of the households in Arcadia are renters, which is a lower rate than that of California and the region as a whole.

Older Adults

Older adults are physically more vulnerable to extreme heat events. Older adults may also have trouble evacuating on their own, and therefore may also be vulnerable to wildfire. Additionally, once evacuated, older adults may have medication that requires refrigeration, such as insulin. Connecting older adults to neighbors and relevant services can address these vulnerabilities. In Arcadia, 1 in 5 residents is 65 years or older, slightly higher than State and regional proportions. Approximately 7% of households are seniors living alone.

Uninsured People

Similar to low-income residents, uninsured people have a reduced ability to recover after a devastating hazard. Health insurance is important for both acute and chronic health issues, and its benefits span all hazards. Renters, home, and car insurance are also potentially beneficial if a hazard, like a wildfire, were to destroy an individual's property. Some types of insurance can be hazard-specific, like flood insurance, and are especially beneficial for homes that are in certain risk areas. Sometimes this type of insurance is required for

homeowners. Specific to health insurance, about 7% of Californians are uninsured, whereas only 4% of Arcadia's residents are uninsured.

Built Environment

Residential Buildings

Arcadia's residents make it the community that it is, so it is important to discuss how the homes of Arcadia residents are projected to be impacted by climate change.

Related to extreme heat, residents in homes without air conditioning are vulnerable. Designated cooling centers or publicly available City facilities can, at times, augment these conditions and provide people with places to cool off.

Specific to flooding, no residential areas in the City are within current Federal Emergency Management Agency (FEMA) flood zones; however, climate change is projected to increase the occurrence of flooding and may cause expanded flood zones in the future. Since 2015, all development and redevelopment projects in Arcadia have had to comply with the latest County of Los Angeles Department of Public Works Low Impact Development Standards Manual. However, these development standards do not address existing developments, which make up the vast majority of the city.

Over 1,000 residential parcels in northern Arcadia overlap with Very High Fire Hazard Severity Zones (VHFHSZs), meaning they're at elevated risk of wildfire. Arcadia's municipal code is compliant with fire safe building standards above what is required by the State; however, these standards only apply to new buildings. A significant number of older buildings do not meet the current California Building Code for building materials and other regulations. Additionally, defensible space requirements are a common issue, and a homeowner's compliance can vary from year to year as a given parcel's vegetation and maintenance fluctuate. The fire department conducts ongoing public education and an annual brush clearance program to lower the potential risk of a fire spreading within Arcadia. The U.S. Forest Service, FEMA, California Department of Forestry and Fire Protection (CAL FIRE), and County of Los Angeles also contribute to regional public education and fire mitigation strategies.

Again, debris flows have more potential to occur in the northern portion of Arcadia, which is mainly populated by single-family residential homes and open space. Over the years as wildfires occur or conditions change, residences may become more at risk.

Critical Facilities

Critical facilities provide emergency response, such as hospitals, fire stations, police stations, emergency operations centers, and ambulance services. Other critical facilities are places that can be flexibly used as shelters or gathering places during emergencies, such as schools or other public assembly facilities with capacities greater than 100 people. None of these facilities are at

an elevated risk of flooding. Two schools, Highland Oaks Elementary School and Foothills Middle School, are within Very High Fire Hazard Severity Zones.

Infrastructure

Infrastructure includes elements of the built environment that supply community members with daily needs, such as transportation, power, and water. Each type of infrastructure may be impacted by climate change differently.

Roads are the most common form of transportation infrastructure, and their function is especially important during hazards that cause evacuation events. Maintenance and improvements that ensure roads meet emergency access standards are most important in the northern portion of Arcadia that is in the VHFHSZ. Roads also have the ability to cause the urban heat island effect; incorporating more reflective materials can mitigate this issue in key locations or citywide depending on the feasibility.

The power grid is another major piece of infrastructure. In recent years, power outages have often been attributed to wildfires. Across the State, public safety power shutoffs have been implemented during times of elevated fire risk to prevent fires from starting. Less than 5% of the major electric transmission lines in Arcadia are within the VHFHSZ. Additionally, using air conditioning during extreme heat events can elevate energy demand and cause rolling blackouts. Effective outreach can mitigate this issue by requesting that residents and businesses alter the time that they use certain appliances like dish washers or washing machines during extreme heat events.

Water infrastructure is another technology critical to Arcadia's normal functions. Much of water supply planning is unrelated to the Safety Element; however, an adequate supply of water is needed for fire suppression. Arcadia's main sources of water are local groundwater pumped from the Main Basin and Raymond Basin, as well as imported surface water from the Metropolitan Water District of Southern California. These sources, along with measures to conserve and recycle water, are projected to easily accommodate future water demands, including those of the Arcadia Fire Department.

City Facilities

City facilities are City-owned and operated but do not include emergency response capabilities (see Emergency Response Facilities, below). They include places like parks, libraries, and various City offices. Arcadia's Wilderness Park is the only City facility that is at elevated hazard risk from both wildfire and debris flows. The 2020 Bobcat fire and subsequent 2021 debris flow occurred near this park and as of 2024 is being mitigated. Other City facilities can offer amenities that fill gaps in resident resilience. Places like the Arcadia Community Center and Library can offer air-conditioned places for the public. Furthermore, parks across Arcadia offer healthy urban canopies that can reduce the impacts of extreme heat and flooding.

Emerging Hazards

Long-term shifts in local climate conditions, including changes in precipitation and higher temperatures, have led to new emerging hazards within Arcadia. As detailed in the California Climate Change Assessment, climate change has already begun to affect the Los Angeles region, including Arcadia, and preparing for future hazard events, including new emerging hazards, is imperative for the safety of residents of Arcadia.

Extreme Heat

Extreme heat is a hazard that includes hotter days, warmer nights, and heat waves. It can result in heat-related illness and hospitalization and can be especially deadly to sensitive individuals such as older adults and people who are unhoused. An extreme heat day is relative to what a community is used to. In Arcadia, an extreme heat day is any day hotter than 101°F. Extreme heat most commonly occurs in the summer and early fall in Arcadia. Average daily high temperatures are around 79°F from June through September. The record high temperatures range from 91°F to 111°F.

An "extreme heat day" is hotter than 98% of the historical (pre-1990) average. This is 101.5 degrees in Arcadia.

Climate change is expected to increase the average temperature year-round and the frequency of **extreme heat days**. Annually, Arcadia is forecasted to experience about five times more extreme heat days from 2020 to 2050 than historically. Heat waves, or times when there are at least four days of extreme heat in a row, are also expected to increase. Before 1990, heat waves were extremely rare in Arcadia, but between 2020 and 2050, two heat waves are projected to occur annually.

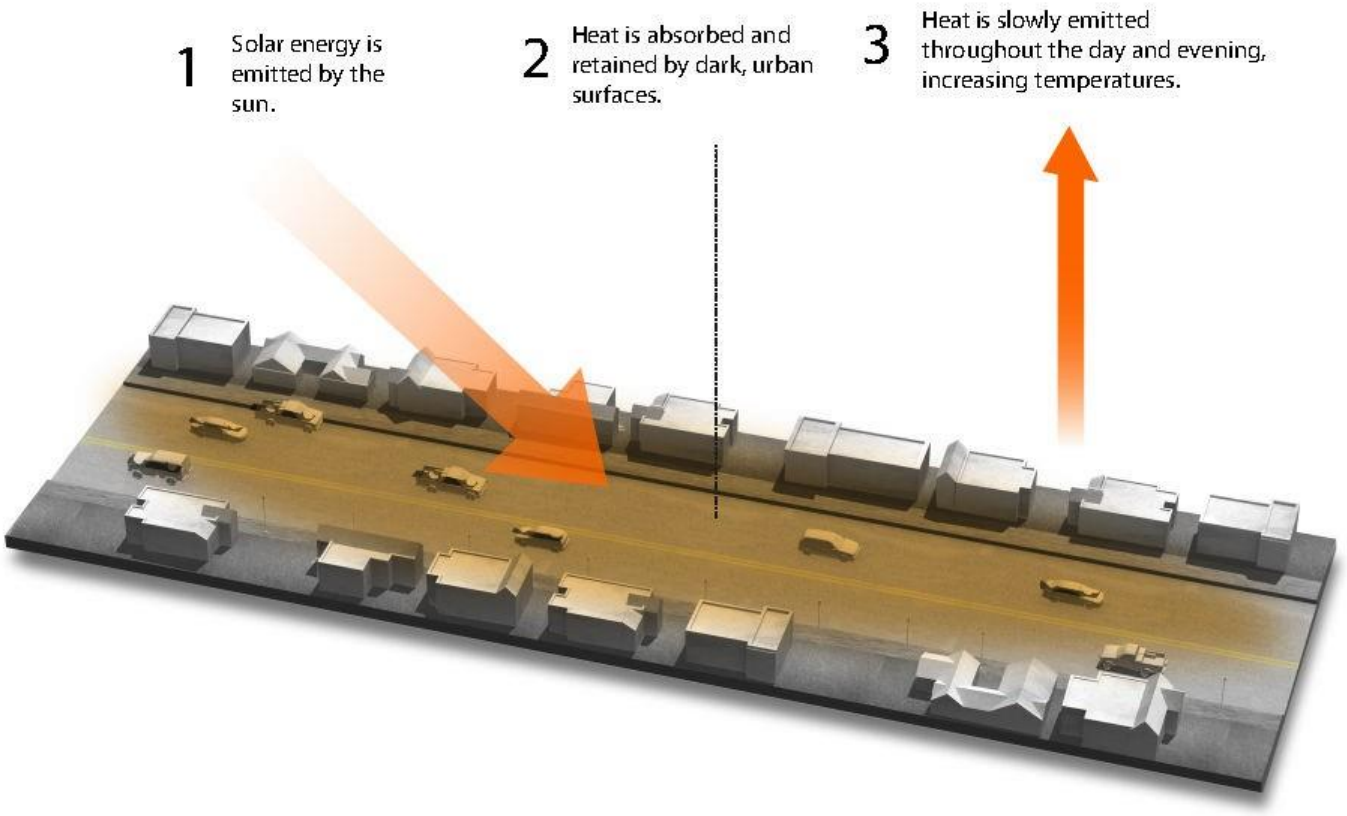
Heat waves and extreme heat days are made worse by the urban heat island effect. The urban heat island effect inflates average annual urban air temperatures 1.8°F to 5.4°F. Heat islands also increase energy demand for air conditioning. Reducing dark urban surfaces can minimize the urban heat island effect. This can be done by using light-colored or reflective building materials, or increasing vegetation and shade trees.

The urban heat island effect occurs when dark urban surfaces, such as roofs and roads, absorb heat and slowly release it over time. During the day, this elevates regular temperatures around these surfaces. At night, these surfaces continue to transfer their stored heat to the air, creating warmer nights that do not allow people to cool off.

Figure S-1 illustrates the urban heat island effect.

Greenery and the urban heat island effect

No Greenery



With Greenery

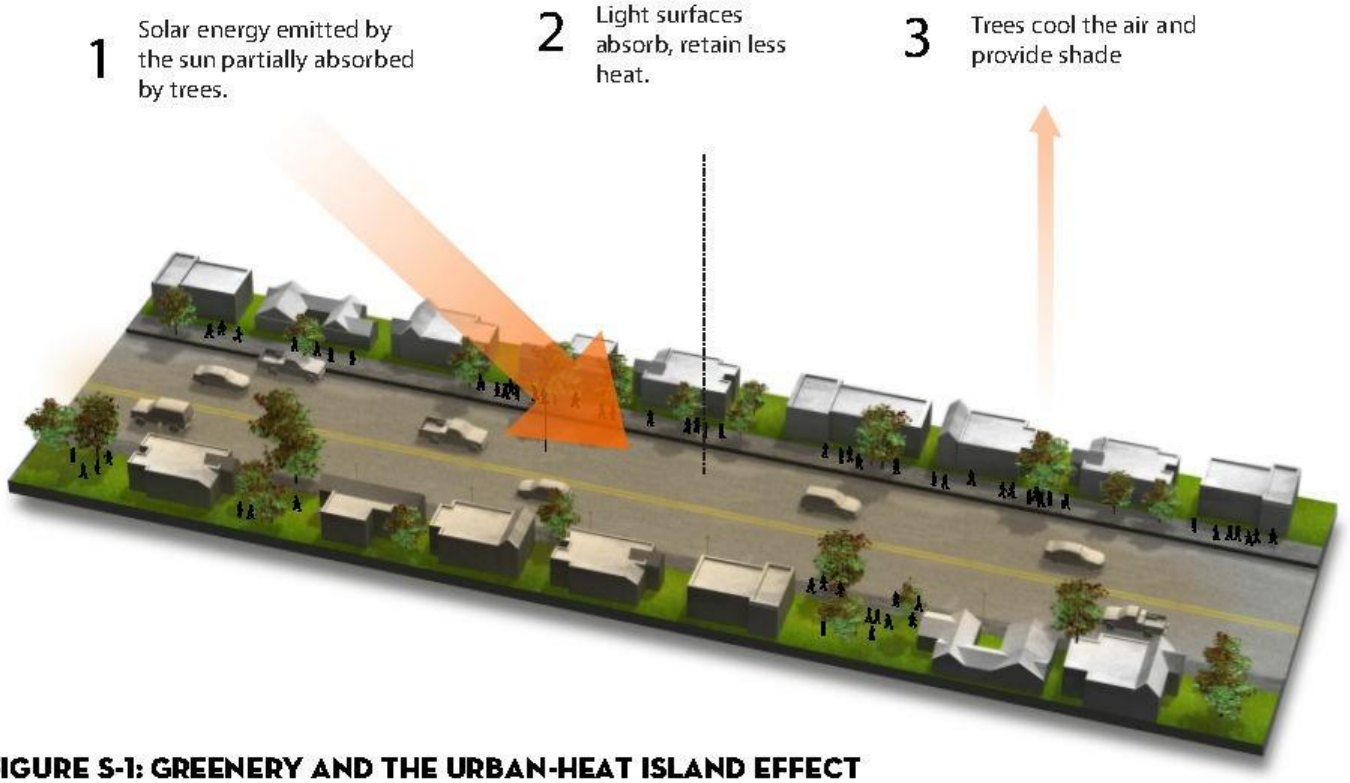


FIGURE S-1: GREENERY AND THE URBAN-HEAT ISLAND EFFECT

Debris Flows

Debris flows (also known as mudslides) occur when rain causes a hillside to lose stability and flow downslope. Generally, this happens because the slope was disturbed prior to a heavy rainfall. Common slope disturbances include wildfires or humans clearing vegetation away and removing previously stable root systems.

This type of hazard event is not new to Arcadia. After the 2020 Bobcat Fire, heavy rains in December of 2021 caused a disruptive debris flow in northern Arcadia. Because this hazard is commonly tied to both wildfire and flooding, it is more likely to occur in the future due to climate change increasing the likelihood and intensity of both hazards. Future debris flows are difficult to predict but are expected to impact areas in and around northern Arcadia's foothills because of the topology and wildfire risk in that area.

Goals and Policies

Extreme heat and debris flows are highlighted as emerging hazards that require response in the form of green solutions and future studies. Vulnerable people and properties are also important, as climate change does not impact everyone the same. Refining and developing programs can prioritize and improve resilience for vulnerable groups, while capital improvements can be made to vulnerable structures. Goals and policies in regard to climate change and emerging hazards are as follows:

Goal S-1: **Minimized potential for loss of life, physical injury, property damage, and economic burden resulting from the impacts of climate change**

Policy S-1.1: Support policies and programs to incentivize/encourage improving resilience to local infrastructure networks vulnerable to increasingly extreme weather events.

Policy S-1.2: Support policies and programs to engage with residents, including non-English speaking communities, making them aware of the risks of extreme events and providing information on ways to preserve health.

Policy S-1.3: Explore potential grants, programs, and partnerships to reduce cost burdens related to households addressing changing hazards.

Goal S-2:	**A built environment protected from extreme heat**
Policy S-2.1:	Maintain a healthy urban forest to reduce extreme heat.
Policy S-2.2:	Adopt policies and standards for the built environment that reduce the urban heat island effect.

Goal S-3:	**Retrofitted Infrastructure Prepared for Increased Debris Flows**
Policy S-3.1:	Review the performance of culverts and other flood-related infrastructure in recent debris flow events to determine a list of potential improvements required for hazard mitigation.
Policy S-3.2:	Continue to provide alert/emergency notification processes and provide public information and awareness materials for those who live in debris flow hazard areas, as determined by fire risk, slope, and past debris flow events.

Environmental Hazards

Arcadia's location adjacent to the San Gabriel Mountains exposes the City to several environmental conditions that have shaped local landforms and now affect how certain properties can be used and developed.

Seismic and Geologic Concerns

The Southern California landscape clearly reveals the earth forces that we live with daily. The mountain ranges are expressions of extensive faulting and movement of the plates that comprise the earth's surface, with local tectonic activity continuing to push the San Gabriel Mountains upward at rate of up to 2 centimeters per year. The San Gabriel Mountains' steep slopes historically caused massive volumes of rocks and debris to flow down into the San Gabriel Valley during periods of heavy rain, creating the rocky alluvial soils that underlie Arcadia. However, major public works projects in the mountains during the last century have largely contained both stormwater runoff and debris flows. Nonetheless, the City still needs to plan for the earthquakes, secondary seismic effects, and geologic conditions that will continue to be of concern.

Earthquakes that generate strong ground shaking and surface fault ruptures are considered primary seismic hazards; secondary hazards resulting from seismic activity include landslides, liquefaction, ground fissures, and seiches (wave oscillation of the surface of water in an enclosed or partially enclosed body of water such as a reservoir or lake). Earthquakes and their related effects

have the greatest potential to impact a large portion of the population. Landslides and ground subsidence have more localized effects.

Earthquakes

An earthquake is the result of movement and shifting of the earth's surface. Movement occurs along fractures or faults, which represent the contact point between two or more geologic formations. Earth movement, known as seismic activity, causes pressure to build up along a fault, and the release of pressure results in the ground shaking effects we call an earthquake.

Earthquake-related hazards have the potential to cause serious damage, injury, and death if the seismic event is large enough to generate short duration, high-peak ground accelerations (ground motion) or long duration, moderate to high ground acceleration. Fault rupture through a structure would likely cause significant damage and may cause collapse of walls and ceilings. Normal foundations would be dislocated and rendered unusable. Combined with strong ground shaking, rupture is a very serious hazard. Rupture can also result in damage to utilities infrastructure and water lines, natural gas lines, and power lines, and sewer system interruptions. Streets could be passable with some difficulty if fault motion is horizontal. Vertical fault offsets could render streets impassable for emergency traffic, except to high-ground clearance vehicles with four-wheel drive.

Located along the southern slope of the San Gabriel Mountains, Arcadia is situated within a very seismically active area of Southern California.[1] There are currently five documented faults, fault zones, or groundwater barriers that may be faults that underlie Arcadia, each having different potential impacts (Figures S-2 and S-3):

- Raymond fault
- Sierra Madre fault zone and associated groundwater barriers
- Puente Hills (blind thrust)
- Upper Elysian Park (blind thrust)
- Eaton Wash groundwater barrier

The two active and potentially active faults that pass through Arcadia and are evident at the ground surface (or just below it) are the Sierra Madre and Raymond faults. Deep beneath the City are two so-called blind thrust faults: the shallower Upper Elysian Park fault and the deeper Puente Hills fault. They are called blind thrust faults due to their depth and the fact that fault movement consists of upward or thrusting action. The Eaton Wash groundwater barrier shows no surface geologic evidence of existence, and the nature of this possible buried fault is not known. In addition to these local faults, another 20 faults have been identified within a 35-mile radius of City Hall (see **Table S-2**).

[1] A detailed Seismic and Geologic Technical Background Report (2008) is included as an appendix to the General Plan.

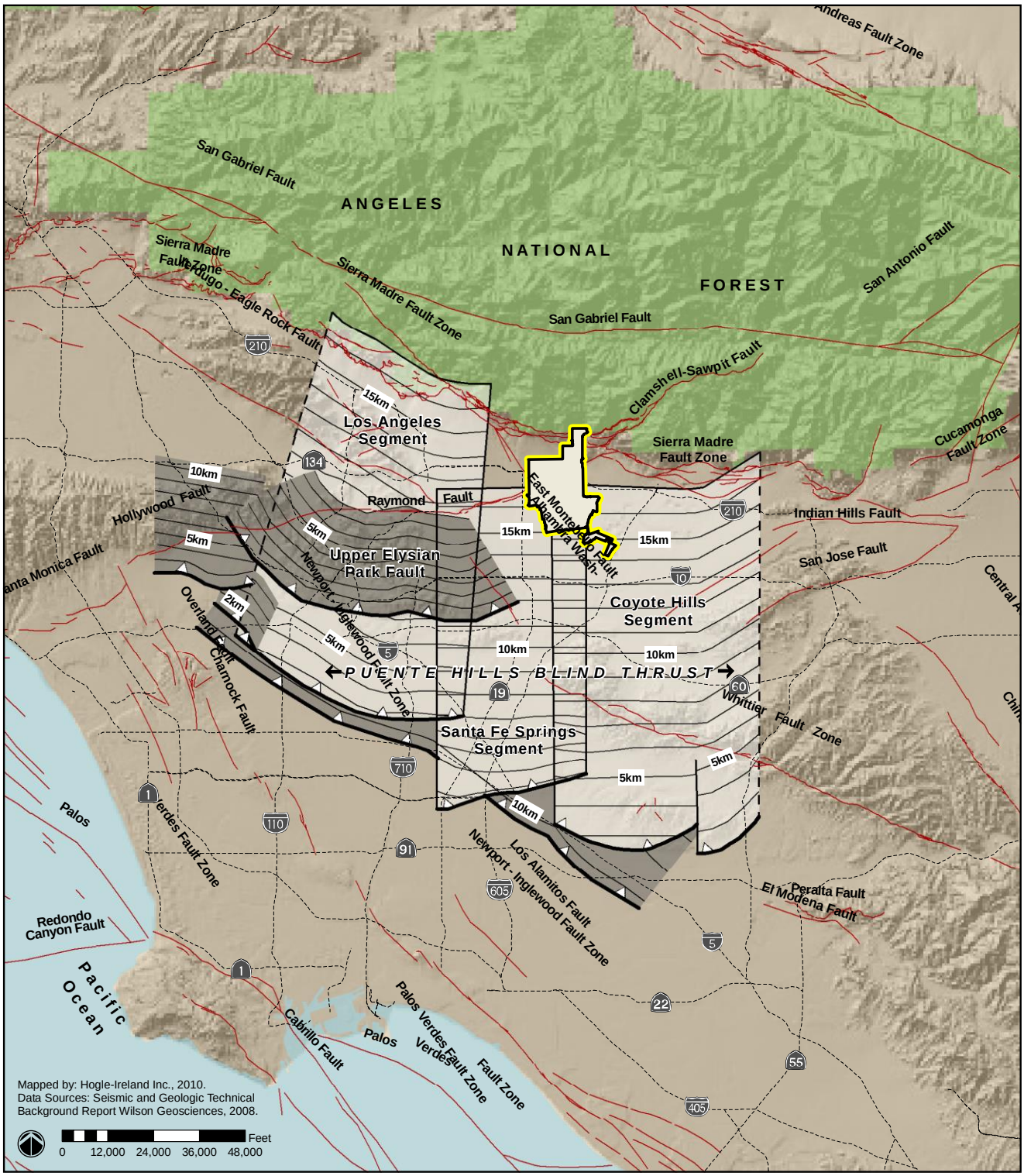
Ground Shaking

Ground shaking is the general term that refers to all aspects of movement of the earth's surface resulting from a seismic event. Ground shaking is normally the major cause of damage in earthquakes, and the amount of damage generally correlates to the magnitude and proximity to the event's epicenter. If any of the faults within a 35-mile radius were to achieve their maximum earthquake potential, the Raymond, Sierra Madre, Puente Hills, Clamshell-Sawpit, Upper Elysian Park, and Verdugo faults represent those faults with the most potential for causing damage to Arcadia due to ground shaking.

TABLE S-2. FAULTS NEAR ARCADIA

Fault Name	Approximate Distance from Arcadia City Hall
Clamshell-Sawpit	3.6 miles
Verdugo-Eagle Rock	5.2 miles
Whittier	8.5 miles
San Jose	9.4 miles
Hollywood	11 miles
Cucamonga	16 miles
Chino-Central Avenue (Elsinore)	16.4 miles
Sierra Madre (San Fernando)	17.6 miles
San Gabriel	18.6 miles
Newport-Inglewood (L.A. Basin)	20.7 miles
Santa Monica	22.1 miles
Northridge	23.2 miles
San Andreas (Carrizo-Big Bend)	23.8 miles
San Andreas (San Bernardino)	23.8 miles
San Andreas (Mojave North/South)	23.8 miles
Malibu Coast	28.5 miles
Palos Verdes	29.1 miles
Santa Susana	29.1 miles
Elsinore (Glen Ivy)	30.2 miles
San Joaquin Hills	31.1 miles

Source: Wilson Geosciences Inc. 2008. *Seismic and Geologic Technical Background Report for the City of Arcadia General Plan Update.* September 2008.



Arcadia City Boundary

Freeway/Highway

Potential Earthquake Faults

Blind Thrust Faults

Faults are buried below the surface; small triangles indicated fault dip direction (north) and thin gray lines indicate the depth contours (e.g., 5 km = 5 kilometers deep) on the fault surface (Shaw et al, 2002).

Surface Faults

Faults exposed at the ground surface; solid where well located, dashed where approximate, and dotted where concealed (Bryant, 2005).

Figure S-2 Regional Faults

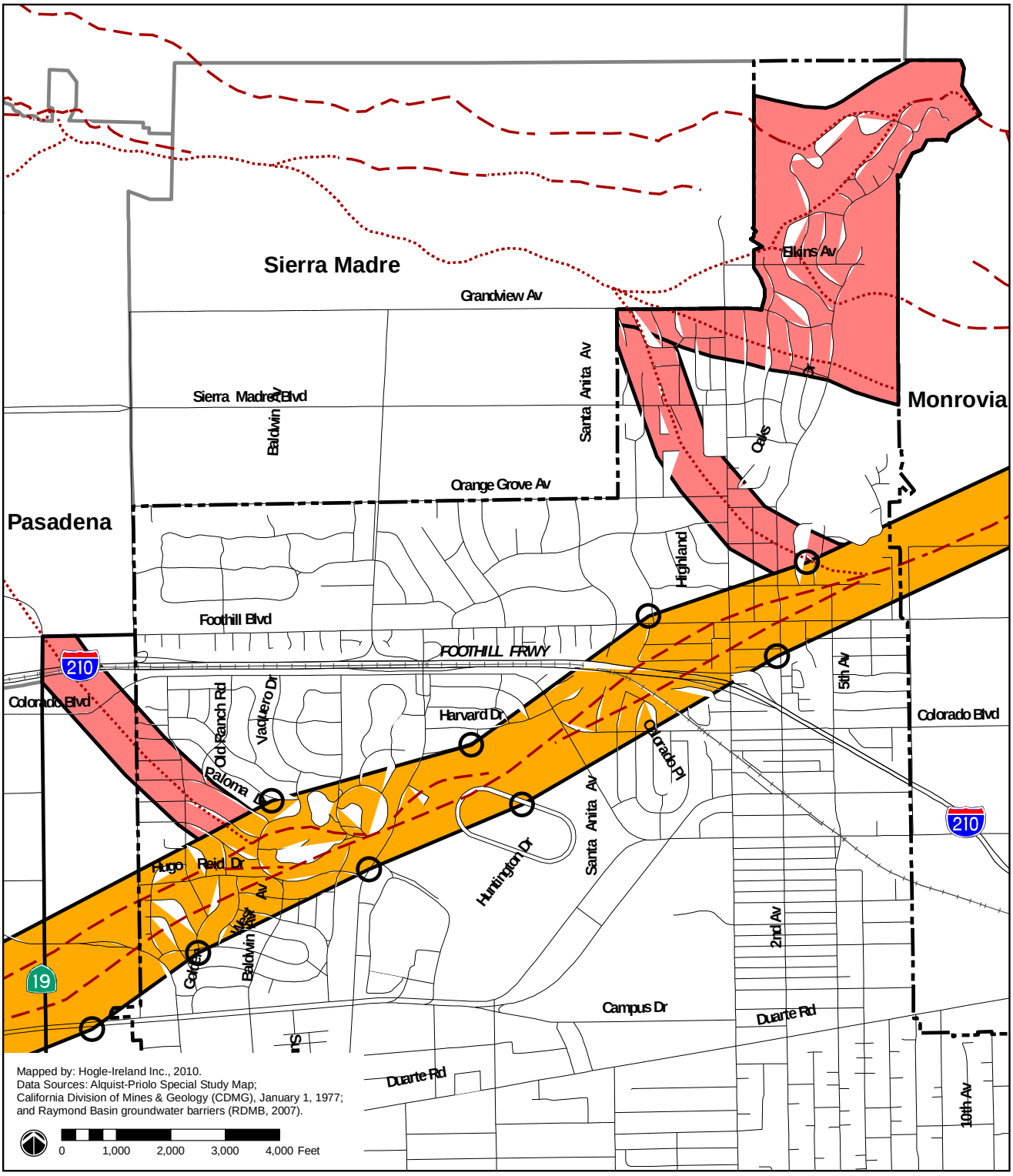


Figure S-3 Alquist Priolo and Fault Rupture Hazard Zones

The types of effects felt by an earthquake depend upon many factors, most notably the intensity of the event, distance to the earthquake epicenter, the depth of the earthquake, and local soils conditions. Seismologists use a logarithmic magnitude scale to describe the intensity of earthquakes. However, what impresses us most when an earthquake occurs are its effects. What kind of damage correlates to, for example, a 5.4 magnitude earthquake? The Modified Mercalli Scale, presented in Table S-3, was developed to provide a correlation between the logarithmic magnitude scale and general public understanding of the potential destructive effects of earthquakes of varying magnitudes.

TABLE S-3. MODIFIED MERCALLI INTENSITY SCALE

Scale	Intensity: Shaking	Intensity: Damage	Description
I	Not Felt	None	Not felt except by a very few under especially favorable circumstances.
II	Weak	None	Felt only by a few persons at rest, especially on upper floors of buildings. Delicately suspended objects may swing.
III			Felt quite noticeably indoors, especially on upper floors of buildings, but many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibration like passing of truck. Duration estimated.
IV	Light	None	During the day felt indoors by many, outdoors by few. At night some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.
V	Moderate	Very Light	Felt by nearly everyone, many awakened. Some dishes, windows, etc., broken; a few instances of cracked plaster; unstable objects overturned. Disturbances of trees, poles, and other tall objects sometimes noticed. Pendulum clocks may stop.
VI	Strong	Light	Felt by all, many frightened and run outdoors. Some heavy furniture moved, a few instances of fallen plaster or damaged chimneys. Damage slight.
VII	Very Strong	Moderate	Everybody runs outdoors. Damage negligible in building of good design and construction, slight to moderate in well-built ordinary structures, considerable in poorly built or badly designed structures, some chimneys broken. Noticed by persons driving motor cars.
VIII	Severe	Moderate/ Heavy	Damage slight in specially designed structures; considerable in ordinary substantial buildings, with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Persons driving motor cars disturbed.

TABLE S-3. MODIFIED MERCALLI INTENSITY SCALE

Scale	Intensity: Shaking	Intensity: Damage	Description
IX	Violent	Heavy	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken.
X	Extreme	Very Heavy	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Rails bent. Landslides considerable from river banks and steep slopes. Shifted sand and mud. Water splashed (slopped) over banks.
XI	Extreme	Very Heavy	Few, if any, (masonry) structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipelines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.
XII	Extreme	Very Heavy	Damage total. Practically all works of construction are damaged greatly or destroyed. Waves seen on ground surface. Lines of sight and level are distorted.

Source: Wilson Geosciences Inc. 2008. *Seismic and Geologic Technical Background Report for the City of Arcadia General Plan Update.* September 2008.

To reduce the ground shaking hazards associated with seismic activity, the City requires that all new development conform to current City and State seismic and geotechnical codes. The California Building Code, which is adopted by the City, contains seismic regulations that are enforced during the design and construction phases of development to ensure any structure has the integrity to remain safe during seismic activity. California's Unreinforced Masonry Building Law is another measure that guards against building collapse in the case of seismic activity. In response, the City inventories unreinforced masonry buildings and conducts a seismic strengthening program to retrofit masonry buildings to prevent injury or damage. As discussed in the Emergency Preparedness section of this element, the City maintains up-to-date emergency response plans and educates the public about response procedures for earthquakes.

Fault Rupture and Fault Hazard Zones

Fault rupture is the term used to describe the movement along a fault line that is evidenced by a break in the ground surface. The location of a fault rupture generally can be assumed to occur along an active major fault trace. The Sierra Madre and Raymond faults represent the two local faults that have the most potential to create ground surface rupture conditions.

The Raymond fault traverses a significant section of Arcadia (Figure S-3) and has the potential to cause a 5- to 6-foot offset if severe ground shaking occurs in the event of a major earthquake. The Sierra Made fault crosses the northern portion of Arcadia and affects fewer properties. However, a rupture along the

Sierra Madre fault still represents a serious potential hazard. In the event of a 7.2 magnitude earthquake along the Sierra Madre fault, ground rupture movements could be very large, possibly 10 feet or more.

The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972 to prevent the construction of buildings on active faults. State geologists are required to publish maps that identify and establish earthquake fault zones that indicate the location of active faults. Each of the maps is then distributed to affected cities and counties for planning purposes. Before a project can be permitted within the fault zone, the permitting jurisdiction must require a geologic investigation by a licensed geologist to prove that proposed buildings will not be constructed across active faults. The Alquist-Priolo Earthquake Fault Zone underlying Arcadia is shown in Figure S-3.

In addition to the known faults, Arcadia is crossed by potentially active and concealed fault traces whose precise locations are not known and/or which have not been studied to the degree that activity is completely understood. Because the Sierra Madre fault zone potentially impacts the northern corner of Arcadia and limited knowledge is available regarding fault segment activity levels and trace locations, prudent planning calls for establishment of fault hazard management zones. The intent of a fault hazard management zone is to require that geologic investigations, which may include fault trenching, be performed if conventional structures designed for human occupancy are proposed within the zone. The goal would be to refine fault location and create a fault activity database for the faults in Arcadia. Figure S-3 identifies the proposed boundaries of a fault hazard management zone for the Sierra Madre fault which take into account areas with 500 feet of mapped faults and groundwater barriers most associated with the Sierra Madre fault zone.

Landslides and Liquefaction

Landslides

Landslides can result from earthquake-related ground shaking or failure of steep slopes due to water saturation or unstable soil conditions. Landslides can overrun structures, people, or property. They can sever utility lines and block roads, thereby hindering rescue operations following an earthquake. California law requires identification of landslide zones, in which the stability of hill slopes must be evaluated.

The Seismic Hazards Mapping Act (California Public Resources Code, Section 2690 et seq.), passed by the Legislature in 1990, addresses secondary seismic hazards such as landslides and liquefaction. The act is implemented by the California Geological Survey, which prepares seismic hazards maps for jurisdictions throughout the State. State maps (see Figure S-4) indicate that landslide hazards in Arcadia are present only within the foothill areas. Also, potential rock fall hazards exist along Santa Anita Canyon Road. These areas are not necessarily unstable, but the hazard maps provide an opportunity to consider these conditions when planning for new development or redevelopment. While there may be evidence for some landslide activity in these areas of Arcadia in past earthquakes, most of the basis for the mapping

of potential earthquake-induced landslide areas is ground slope and the characteristics of geologic formations.

Liquefaction

Liquefaction is a geologic process that causes various types of ground failure. Liquefaction typically occurs in loose, saturated sediments. When liquefaction occurs, the sediments involved have a total or substantial loss of shear strength and behave like a liquid. Liquefaction can cause structural distress or failure due to ground settlement, a loss of bearing capacity in the foundation soils, and the buoyant rise of buried structures. Liquefaction-induced ground failure historically has been a major cause of earthquake damage in Southern California. During the 1971 San Fernando and 1994 Northridge earthquakes, significant damage to roads, utility pipelines, buildings, and other structures in the Los Angeles area was caused by liquefaction-induced ground displacement.

The potential danger of liquefaction-induced ground failure can range from simple ground cracking to complex lateral spreading landslides, conditions that can potentially cause damage to both surface and subsurface structures. The severity of the damage cause by liquefaction is dependent upon the magnitude of the failure and location of structures in relation to the failure. Localities most susceptible to liquefaction-induced damage are those that are underlain by loose sediment, contain shallow groundwater, and are susceptible to ground shaking.

California law requires identification of liquefaction zones. As they do for landslide hazards, the California Geological Society's seismic hazard zones maps delineate areas within Arcadia that are susceptible to liquefaction. Figure S-4 identifies four primary liquefaction areas within the Arcadia planning area: southeast of Live Oak Avenue to the San Gabriel River, along Live Oak Avenue between Santa Anita and Tenth Avenue, along the wash areas of Santa Anita Canyon just north of the Raymond fault, and an area north of the Raymond fault.

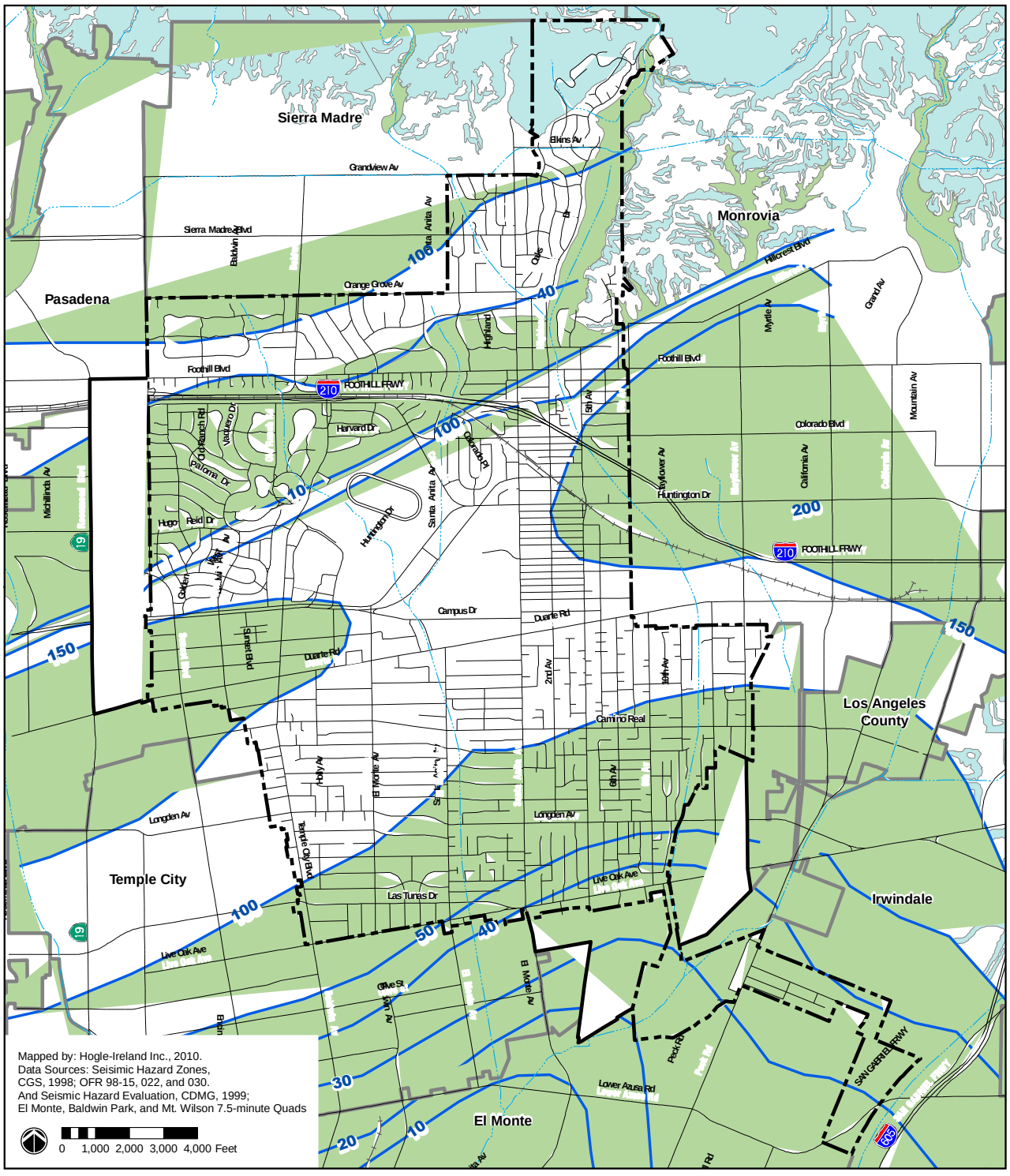


Figure S-4 Liquefaction and Landslide Hazard Zones

Minimizing Risks from Landslides and Liquefaction

The State Hazards Mapping Act requires that any development proposed within a State-delineated seismic hazard zone be evaluated for landslides and liquefaction by a certified engineering geologist and/or registered civil engineer. Likewise, project review by the local agency must be performed by geologists and engineers with the same credentials and experience. Seismic hazard maps may not show all areas that have the potential for liquefaction and landslides, nor is information shown on the maps sufficient to serve as a substitute for detailed site investigations.

A considerable part of Arcadia's mapped liquefiable areas are already built upon, mostly with residential, commercial, and industrial development. A moderate to strong earthquake occurring along a nearby fault could cause extensive damage to buildings and infrastructure in these areas. Since retrofitting measures generally may not be feasible due to cost, the City will be prepared to respond to damage and disruption in the event of an earthquake. Any new development will require liquefaction susceptibility studies as part of the design and construction processes.

Tsunamis

A tsunami is a large sea wave generated by any large-scale disturbance of the ocean floor that occurs in a short period of time, such as an earthquake, volcanic eruption, or coastal landslide, which can cause a sudden displacement of water. Although local earthquakes may cause tsunamis, most past tsunamis in Southern California were associated with distant earthquakes that traveled great distances across the Pacific Ocean basin. Tsunami hazards are not of concern in Arcadia due to elevation and distance from the ocean.

Goals and Policies

Identification, avoidance, and sound mitigation practices represent the best approaches to addressing seismic and geologic hazards. While the Raymond fault zone, landslide areas, and liquefaction zones have been mapped, uncertainty remains regarding the location of Sierra Madre fault traces. The City will explore the creation of a fault hazard management zone for this fault. Goals with regard to seismic and geologic hazards are as follows.

Goal S-4: **Minimized potential for loss of life, physical injury, and property damage resulting from earthquakes and geologic hazards**

Policy S-4.1: Explore the creation of a fault hazard management zone for the Sierra Madre fault.

Policy S-4.2: Emphasize carefully planned development within seismic and geologic hazard areas to minimize potential hazards risk as the City's preferred hazards management strategy.

Policy S-4.3: Require detailed geologic investigations to accompany development proposals for sites that lie within known or suspected seismic and geologic hazard areas. Require that such investigations and reports conform to accepted professional standards and any applicable State and City requirements.

Policy S-4.4: Monitor activities of the California Geological Survey and other relevant agencies and organizations to stay informed regarding new mapping and reports that advance the state of knowledge of seismic and geologic hazards affecting Arcadia.

Policy S-4.5: Continue enforcing the most rigorous building codes and regulations that govern seismic safety.

Policy S-4.6: Require the removal or retrofit, as appropriate, of any hazardous or substandard structures that may collapse in the event of an earthquake.

Policy S-4.7: **Periodically conduct and evaluate Emergency Operations Center exercises to ensure readiness for earthquakes and/or seismic related events.**

Policy S-4.8: **Ensure access and egress routes are planned appropriately to and from identified hazard areas relative to the type of development in these areas.**

Flooding

Floods are natural and recurring events that have become hazardous as development encroaches onto floodplains, modifying the landscape and placing structures in areas meant to convey excess water during floods. Significant flood control and debris flow infrastructure within the San Gabriel Mountains and foothill communities have largely mitigated the flood hazards that were prevalent prior to extensive urbanization.

Arcadia and surrounding areas are, like most of Southern California, subject to unpredictable seasonal rainfall. Most years, the scant winter rains are barely sufficient to turn the hills green for a few weeks, but every few years the region is subjected to periods of intense and sustained precipitation that sometimes results in localized flooding.

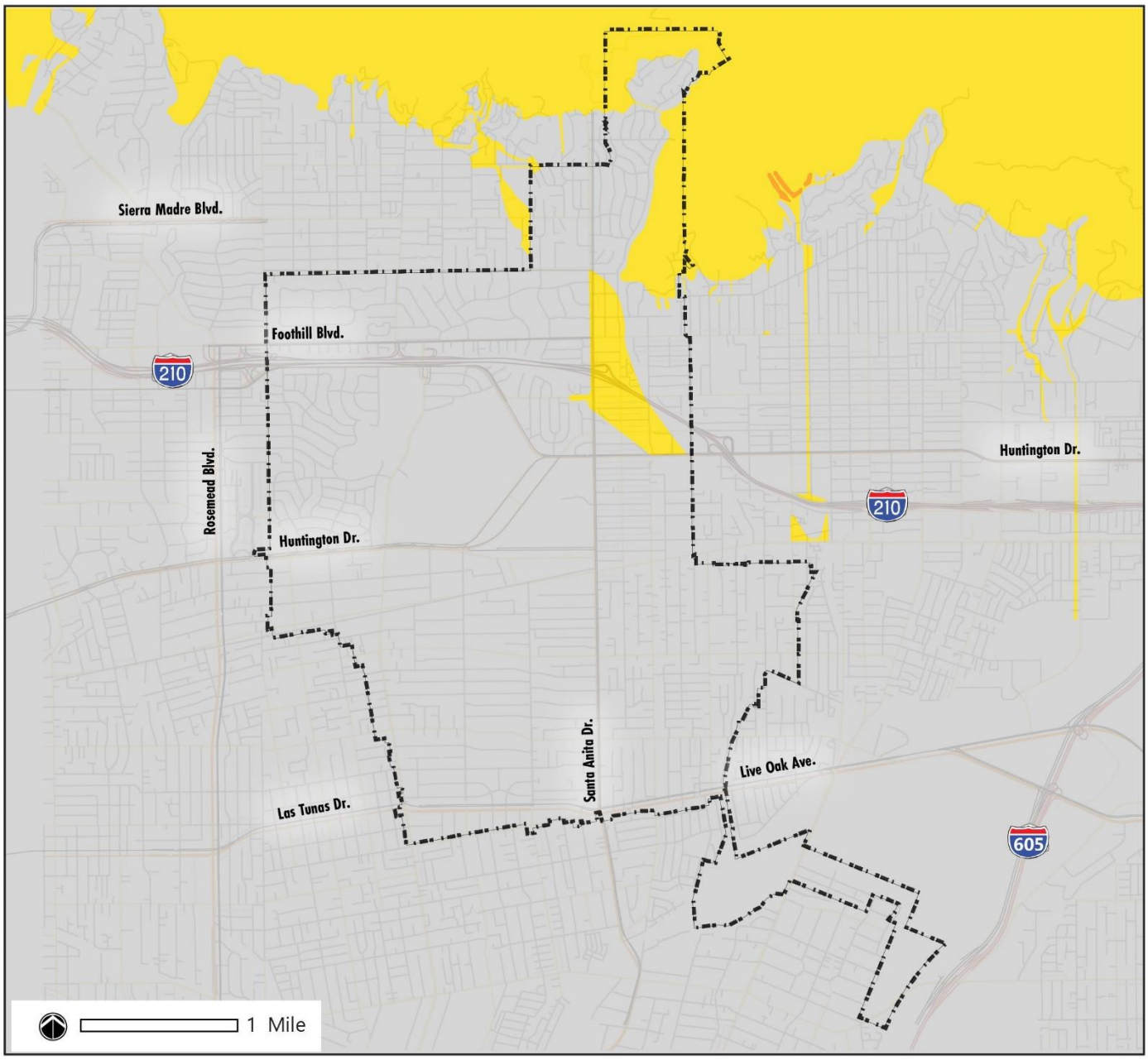
Regionally, the overall amount of rain is not projected to change as a result of climate change; however, over time climate change is predicted to reduce the frequency of lower intensity rain occurrences and increase the frequency and intensity of extreme rain events. That being said, these climatic changes may not be apparent immediately. From 2024 to 2050, Arcadia's average annual extreme rain events is projected to remain at three events per year, the same as historic averages.

Natural (Storm) Flooding

In Southern California, storm flooding is difficult to predict, and thus plan for, because rainfall varies from year to year. To prepare and mitigate hazards from flooding, the City participates in the National Flood Insurance Program. Flood Insurance Rate Maps, which are prepared by FEMA, identify potential flood zones (Figure S-5). Flood hazards related to storm events generally are described in terms of a 100- or 500-year flood. A 100-year flood is defined as a major flood event that has a 1% or greater chance of occurring during any one year. Flood hazard planning practices addresses such storms, as well as 500-year events. These floods are considered severe; however, these floods can be reasonably predicted and therefore reasonably mitigated.

Discussion of the local and regional stormwater control systems is included in the Circulation and Infrastructure Element.

As noted above, the Los Angeles County Department of Public Works has constructed regional flood and debris control facilities throughout the region, including the flood control channels in Arcadia that direct runoff water through the city into regional facilities to the south. A system of spreading basins manages stormwater runoff and helps recharge groundwater basins. Locally, the City maintains approximately 4 miles of subsurface storm drains that flow into the regional channels. Due to the combination of these two systems, no areas in Arcadia lie within a 100-year floodplain. That being said, FEMA flood zones could be added to Arcadia in the future as a result of climate change increasing flood risks.



0.2% Annual Chance Flood Hazard

Area of Undetermined Flood Hazard

Area of Minimal Flood Hazard

Source: FEMA. 2023. National Flood Hazard Layer, https://www.fema.gov/-flood-maps/national-flood-hazard-layer
Disclaimer: These maps can change overtime. For up-to-date data you can refer to FEMA's website (listed above in source), search on the internet for National Flood Hazard Layer, or ask County staff for assistance.

Figure S-5 Flood Hazards Map

Flooding Due to Dam Inundation

Inundation can occur as a result of significant structural damage to a dam or other water retention facility upstream of Arcadia. Dam or reservoir failure could occur as a result of an earthquake, erosion, design flaw, or water overflow during storms (for a dam). Arcadia's location along the San Gabriel Mountain foothills and below extensive regional flood control facilities places it within the potential inundation area of six water retention facilities (see Figure S-6).

Section 8589.5 of the California Government Code requires dam owners to provide the Governor's Office of Emergency Services with an inundation map showing the extent of damage to life and property that would occur given a complete and sudden dam failure at full capacity. The inundation areas for each water retention facility are shown on Figure S-8.

The Santa Anita Dam represents the facility that could have the greatest flooding impact on the City. A catastrophic failure of the Santa Anita Dam could result in floodwaters storming down Santa Anita Canyon to about Orange Grove Avenue and then spreading to cover roughly the eastern half of Arcadia to the East Wash. Inundation from a failure of the Sierra Madre Dam would cover the area north of I-210 to Grandview Avenue between the Arcadia East Wash and First Avenue. Areas immediately adjacent to drainage courses would be the most susceptible to damage from rapidly flowing water, severe erosion, and associated floating debris. Higher areas and those farthest from the existing flood channels could suffer some damage from rising water.

Santa Anita Dam, constructed in 1925–1927 by the then Los Angeles County Flood Control District, was part of a series of public works projects designed to control floodwaters and provide a stable water supply. This dam is one of about 40 variable radius arch concrete dams constructed in California between 1914 and 1970.

Source: Santa Anita Dam Riser Modification and Sediment Removal Final EIR, Los Angeles County Department of Public Works, May 2009.

To reduce risks associated with the Santa Anita Dam, Los Angeles County Public Works has completed several projects in recent years and has other planned (see below).

Completed Dam Projects

Los Angeles County Public Works completed construction of the Santa Anita Dam and Reservoir Sediment Removal and Riser Modification Project in 2013. This project restored 185 acre-feet of stormwater storage capacity in Santa Anita Reservoir by removing approximately 330,000 cubic yards (495,000 tons) of sediment from the reservoir and placing it at the Santa Anita Sediment Placement Site. The project also achieved compliance with California Department of Water Resources, Division of Safety of Dams' seismic stability requirements for the dam. by constructing a new sluiceway outlet riser on the upstream face of the dam that allows free draining of reservoir water above the restricted reservoir elevation of 1,230 ft.

Los Angeles County Public Works completed construction of the Santa Anita Dam Spillway Modification Project in 2021. This project achieved compliance with California Department of Water Resources, Division of Safety of Dams' hydrology and hydraulic requirements and mitigates downstream flood risk by constructing a new ogee spillway to safely accommodate the Probable Maximum Flood. The Project also completed improvements to the dam's electrical, mechanical, water, control systems for increased operational flexibility, constructed a heliport for improved emergency access, and installed new flood control valves to enhance the reliability of water conservation releases from the dam for downstream ground water recharge.

Upcoming Dam Projects

The 2020 Bobcat Fire burned the tributary watershed of the Santa Anita Reservoir and an estimated one million cubic yards of sediment could flow into the reservoir during a major storm event, or multiple storm events, until the watershed recovers. During December 2021 storms an estimated 300,000 cubic yards of sediment and debris washed into the reservoir. As a result, Los Angeles County Public Works initiated the Santa Anita Reservoir Post-Fire Emergency Restoration Project which removed an estimated 300,000 to 400,000 cubic yards of sediment from the reservoir and placed it at the Santa Anita Sediment Placement Site (SPS). This emergency sediment removal project was necessary to protect the dam's outlet works and to restore capacity in the reservoir for flood protection and water conservation operations. Construction started in early 2023 and was completed in November 2024. Work will continue at the SPS until mid-2025.

Los Angeles County Public Works has also initiated the Santa Anita Debris Dam Seismic Strengthening Project to meet compliance with California Department of Water Resources, Division of Safety of Dams' seismic stability requirements and to restore 119 acres-feet of stormwater storage capacity at the debris dam. The project will include buttressing of the spillway walls and westerly embankment, replacement of the existing outlet tower, modification of the inlet/outlet works, and other facility improvements. Construction is anticipated to start in mid-2025.

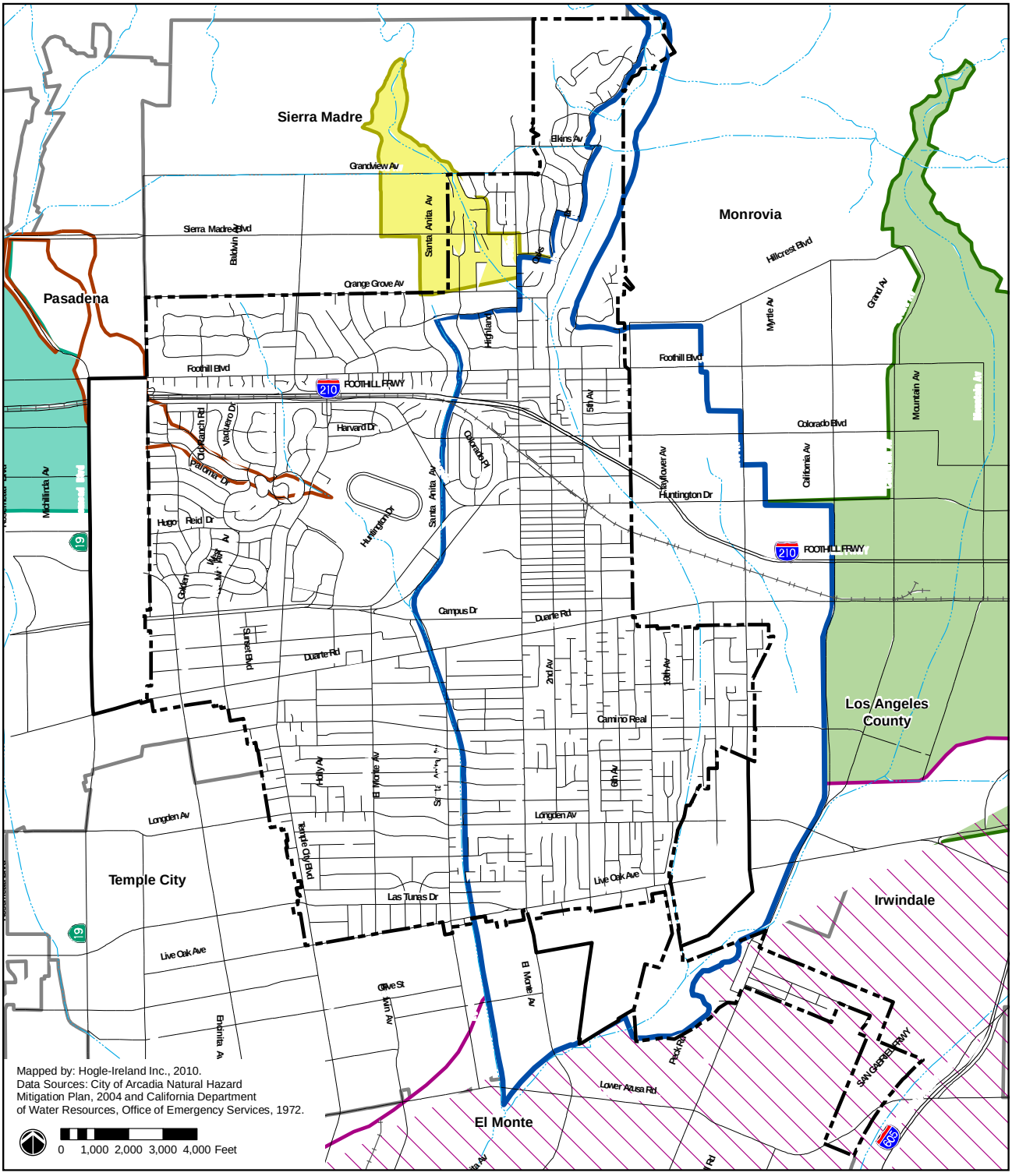


Figure S-6 Dam Inundation Zones

Seiche Potential

A seiche is the formation of large waves in landlocked bodies of water due to seismic activity. In the event of major ground shaking, a seiche can occur and potentially cause major flooding and water inundation damage. While no large water bodies exist in Arcadia, waters stored behind Santa Anita Dam could experience seismic-induced wave action. Also, seiche-type action could be of concern in aboveground water reservoirs, such as any of the 16 reservoirs in Arcadia. Major reservoirs include the Baldwin Reservoir (9.3 million gallons), St. Josephs Reservoir (5.25 million gallons), and Santa Anita Reservoir 4 (3.5 million gallons). Reservoirs are engineered to guard against failure due to seismic activity, both from structural failure and internal wave action that could be generated by an earthquake.

Minimizing Risks from Flooding and Inundation

Because FEMA maps indicate that flood hazards in Arcadia are insignificant, property owners are not required to guard against potential flooding. To address any localized ponding in periods of intense rainfall, the City will continue to monitor, improve, and maintain storm drain systems to convey water flows and minimize focused incidents.

Local stormwater management efforts include approaches to manage runoff in a manner that both guards against flooding and protects water supplies from pollutants. See the Circulation and Infrastructure Element and the Resource Sustainability Element for more discussion.

The dams above Arcadia are regulated and monitored for structural safety by the California Department of Water Resources, Division of Safety of Dams in accordance with Division 3 of the California State Water Code. Regulation of these dams reduces substantially the chance of catastrophic failure. As described above, completed and planned improvements to Santa Anita Dam ~~will~~ provide for compliance with seismic safety standards and sediment maintenance. Although highly unlikely, under the most severe earthquake scenario along the Sierra Madre fault, water retention facilities could be damaged and cause a release of water.

Appropriate mitigation for this type of flooding consists of evacuation planning for most areas of the City and elevating new critical facilities (see discussion below) above the predicted flood level for its location.

Goals and Policies

As flood hazards are well addressed by existing storm control infrastructure, City efforts will focus on maintenance. With regard to dam inundation, the City will work with responsible agencies—the Los Angeles County Department of Public Works in particular—to protect Arcadia residents and businesses from potential inundation.

Goal S-5: Superior storm drainage and flood control facilities that minimize risk of flooding

Policy S-5.1: Prioritize improvements to Arcadia's storm drain system in areas that are prone to localized ponding and flooding.

Policy S-5.2: Continue rigorous maintenance of storm drainage and flood control facilities within the City's jurisdiction, and coordinate with all responsible agencies in their upkeep and improvements.

Policy S-5.3: Require that new development projects retain as much runoff as possible on the development site to reduce flow volumes into the storm drain system, allow for recharge of the groundwater basins, and comply with the City's stormwater permitting requirements (consistent with the National Pollutant Discharge Elimination Systems program) and employ best management practices.

Policy S-5.4: Support efforts of the Los Angeles County Department of Public Works and other agencies responsible for the maintenance of dams and reservoirs above Arcadia to improve conditions of the facilities and reduce the risk of inundation resulting from dam or reservoir failure.

Policy S-5.5: Ensure that developments located within the County's Flood Hazard Zones are located and designed to avoid isolation from essential services and facilities in the event of flooding.

Fire Hazards

The Arcadia Fire Department is a Class I, all-risk department that addresses both wildland and urban fires; a complete discussion of the department's capabilities and responsibilities is included below in the Emergency Services section.

Wildfires

Wildfires have occurred in Southern California since before humans settled the area, but fires were not of significant concern to people until settlements were developed in the hills and mountains where fires are part of nature's processes. Wildfires are extremely costly, not only to property owners and residents, but also to government agencies.

The wildfire front is not the only source of risk; embers, or firebrands, travel far beyond the area impacted by the front and pose a risk of ignition to a structure or fuel source. Since fires ignore civil boundaries, cities, counties, special

districts, and State and Federal agencies work together to bring fires under control. Preventive measures can be very effective in minimizing the scope of a fire event, including vegetation maintenance around structures, controlled burns to protect habited areas, and limiting or avoiding any new development in high-risk areas.

Wildfire season in California is forecasted to become longer and more severe as a result of climate change. Approximately 80% of wildfires occur in the summer and fall, with 25% of annual wildfires occurring during Santa Ana wind events. Climate change is likely to intensify the fall fire season as the fall becomes hotter and drier and Santa Ana wind season is less tempered by early rains.

The threat of fire to hillside developments at the base of the San Gabriel Mountains is of real concern to Arcadia residents living in the foothills. The northernmost portion of Arcadia and the foothills region is recognized as a Very High Fire Hazard Severity Zone (VHFHSZ) (see Figure S-7). VHFHSZs are developed by CAL FIRE using several fire likelihood and fire behavior factors to show the severity of fire hazards or risks. Arcadia's VHFHSZ consists of single-family residential uses and open space in the foothills of the Angeles National Forest. In addition, there are four reservoirs and a radio repeater in this high threat area that serve the neighborhoods of Arcadia and beyond. The Angeles National Forest is Federally owned land managed and protected by Federal emergency service crews. If fire breaks out in this region, cooperation between local, county, State, and Federal agencies is crucial.

In total, CAL FIRE has recorded approximately 12 major wildfires that burned into Arcadia since 1950, and all but three fires originated in the San Gabriel Mountains to the north. The furthest south that a fire originating in the San Gabriel Mountains has burned is to present day Elkins Avenue. Of the 12 total fires, three occurred in a small pocket further southeast where present day Foothill Middle School exists. It is likely that the natural canyon protruding into this portion of Arcadia was undeveloped during these times and, since the last fire in that area in 1977, the wildfire-urban interface has receded outside of the city boundary as development filled in the formerly fire prone area.

From 2001 to 2021, there have been seven fires in the foothills of Arcadia or immediately neighboring the city limits (see Figure S-8). The Bobcat Fire, in September 2020, was the most recent fire to threaten residents in Arcadia. Originating in the Angeles National Forest, the wildfire burned directly towards the interface along Arcadia's foothills. Hundreds of homes were evacuated for 4 days while various agencies coordinated to protect neighborhoods from the flames. Within the Los Angeles region, major fires will continue to cause dangerous air pollution, mass evacuations, loss of property, and loss of life.

California's Public Resource Code and Government Code 51175-89 direct CAL FIRE to map areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors. CAL FIRE created a mapping system that identifies Fire Hazard Zones, and has created a map showing areas that are considered

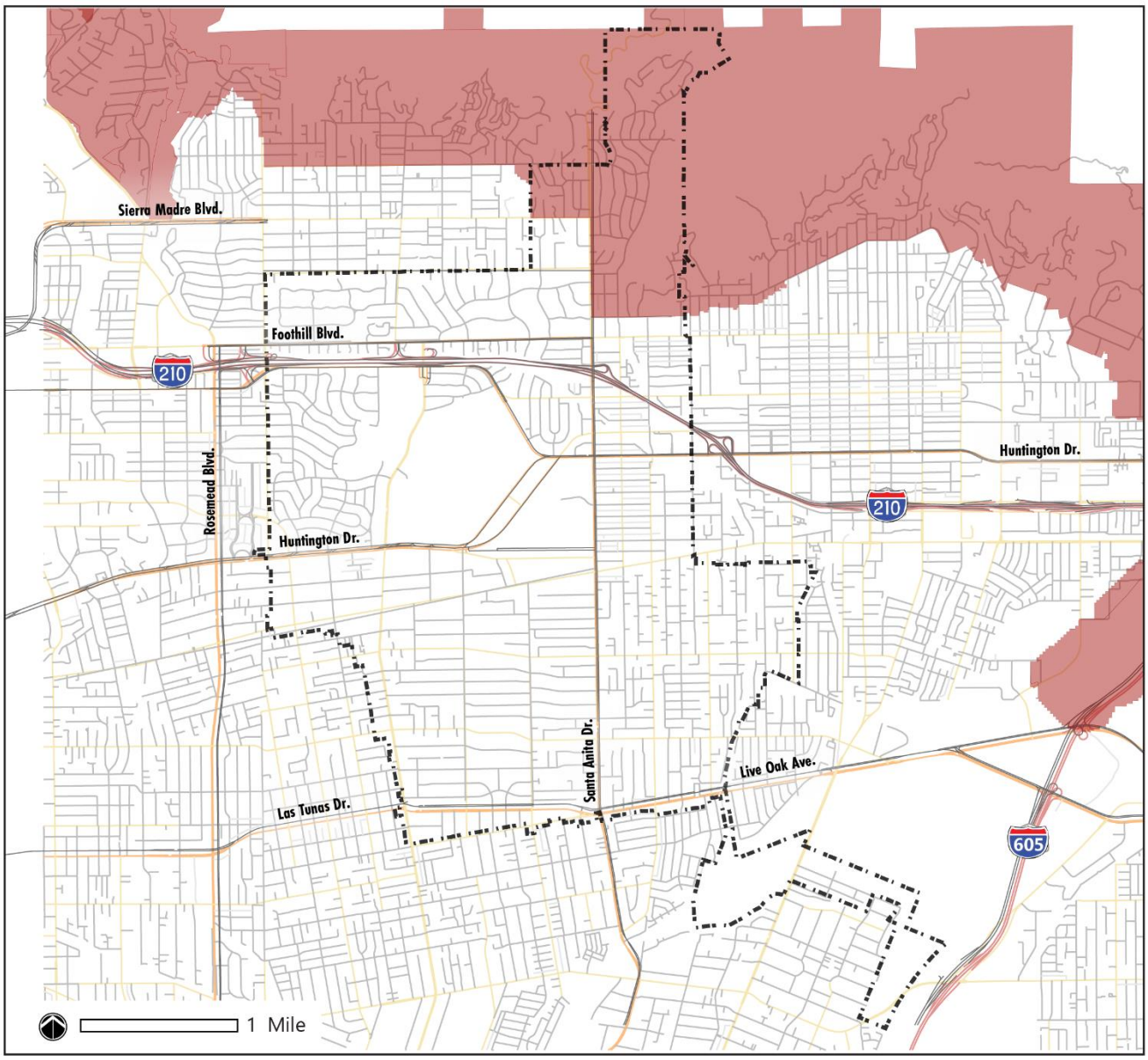
to be VHFHSZs in Arcadia. The map has been officially adopted by the City (see Figure S-7), and the City has targeted these areas to implement stringent wildfire mitigation strategies. New construction within this zone, also known as a wildland-urban interface area, is required to maintain "defensible space" (areas clear of possible fire fuels such as dried vegetation and additionally provide emergency access) and to comply with special building code requirements for high-fire hazard areas, including such measures as ignition-resistant construction materials for roofs, eaves, vents, exterior walls, exterior windows, doors, and decks.

Urban Fires

Building and equipment fires potentially could occur any day of the week, regardless of weather and fuel load. Although urban fires accounted for less than 2% of the City Fire Department's total incident responses in 2021, the cost of fire damage to residential structures alone was estimated at around $3.9 million. The Fire Department focuses on fire prevention and education to keep incident levels and damage low. Prevention includes having appropriate fire and life safety systems in place, such as automatic fire sprinklers and smoke alarms, and conformance with the City's adopted fire codes.

Due to factors such as manufacturing operations and/or storage involving chemicals or flammable materials, industrial businesses located north of Huntington Drive and east of Santa Anita Avenue and those within the southeast corner of the City have higher hazard levels than other uses in the City. All businesses are required to comply with Fire Department requirements regarding storage of flammable and hazardous materials and emergency incident planning. Construction standards in building and fire codes provide mitigation against fire events and fire damage. Emergency fire services are discussed in further detail in the Emergency Services section that follows.

The City supplements its own fire suppression resources with mutual aid agreements with the U.S. Forest Service and the County of Los Angeles for fire protection services in the hillside areas. Automatic aid agreements with neighboring jurisdictions for general fire and emergency services provide additional response capabilities throughout the rest of the City. A discussion of Arcadia Fire Department's facilities and services is located in the Emergency Services section that follows.

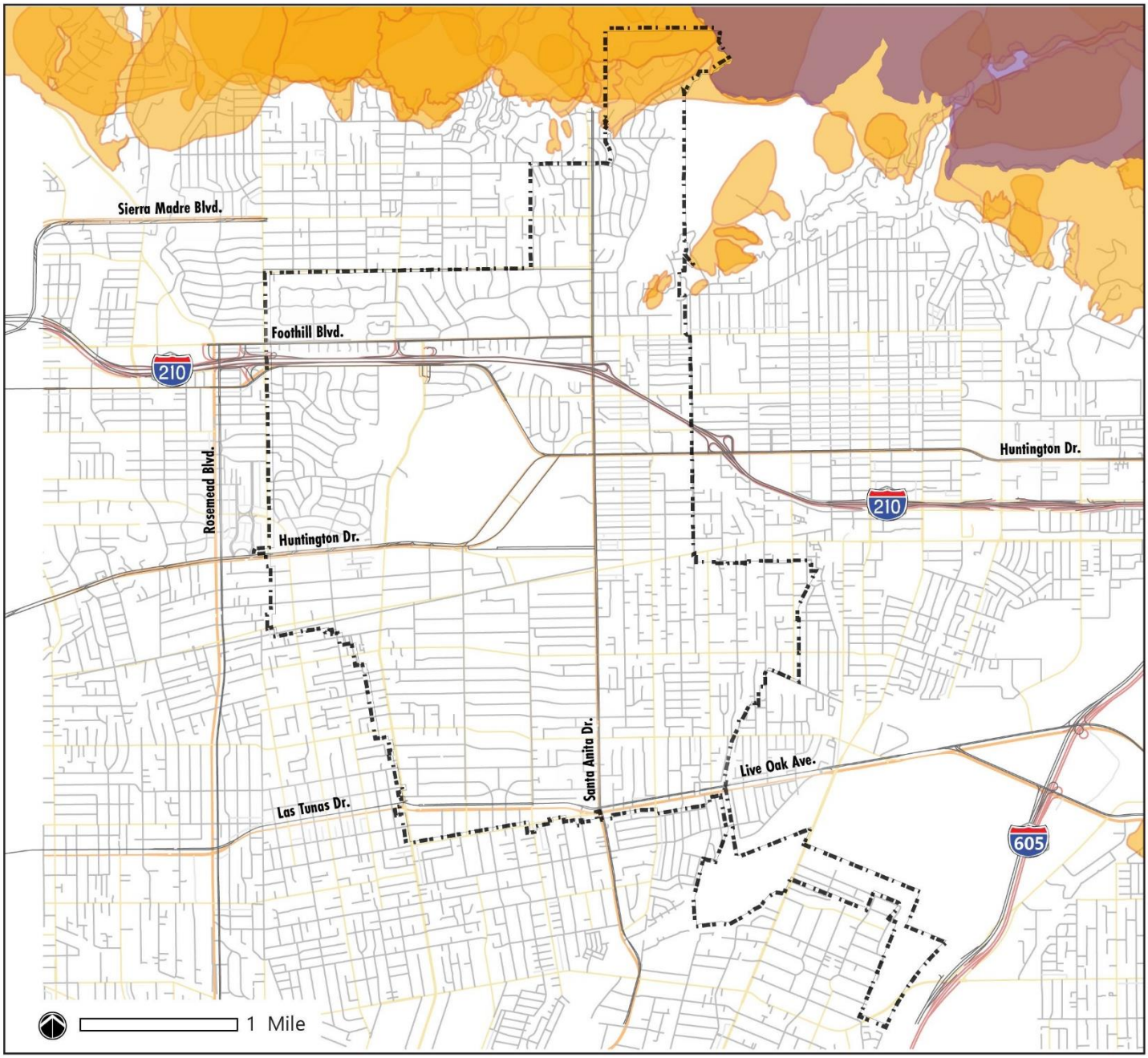


City Boundary

Very High Fire Hazard Severity Zone

Source: CalFIRE. 2022. Wildfire Severity Zones. https://frap.fire.ca.gov/frap-projects/fire-hazard-severity-zones/layer
Disclaimer: These maps can change overtime. For up-to-date data you can refer to CalFIRE's website (listed above in source), search on the internet for CalFIRE Wildfire Severity Zones, or ask County staff for assistance.

Figure S-7 Fire Hazard Severity Zones



City Boundary

Historic Fire Perimeters

2020 Bobcat Fire Perimeter

Source: CalFIRE. 2022. Wildfire Perimeters, 1878-2019. https://frap.fire.ca.gov/frap-projects/fire-perimeters/layer
Disclaimer: These maps can change overtime. For up-to-date, data you can refer to CalFIRE's website (listed above in source), search on the internet for CalFIRE Fire Perimeters, or ask County staff for assistance.

Figure S-8 Fire Perimeters

Goals and Policies

The City implements State and local fire codes, policies, and programs to protect the community from wildland and urban fires. Enforcement of the California Fire Code has been the City's most effective way of guarding against fire incidents. The California Fire Code provides the minimum standards that govern projects ensuring the use of proper building materials, fire protection system design, occupancy limits, and emergency access. Other fire policies such as storage limitations and the City's fire sprinkler standards for commercial and residential structures help prevent and limit damage from fires.

The City has also been aggressive in minimizing wildfire hazards, specifically by adopting wildfire prevention policies that apply to all properties within the wildland-urban interface zone. Requirements in this zone include planting of appropriate plant materials, landscape maintenance, irrigating vegetation, proper storage of fuels (firewood, propane tanks), and roof and chimney maintenance. Additionally, the City enforces California Government Code and California Building Code requirements that further preventative measures in areas designated as VHFHSZs.

Goal S-6: **High level of protection from the dangers of wildland and urban fires**

Policy S-6.1: Reduce wildland and urban fire incidents and impacts to the community through engineering, enforcement, and education, as well as economic and emergency response.

Policy S-6.2: Continue to adopt and implement the most current fire prevention technology, as recognized by national standards, in the development of building and fire codes.

Policy S-6.3: Continue to develop public education programs that will provide Arcadia residents and businesses with information regarding proper and effective fire preparedness including defensible space, home hardening, and evacuation routes. Outreach efforts should ensure the most at-risk populations are informed.

Policy S-6.4: Limit new development in designated high-fire-hazard areas. Where prior entitlements have been given, require and enforce strict adherence to City, County, and State codes that address building materials and approaches, defensible spaces, fuel breaks, required fire flows, on-site or nearby fire-fighting equipment, and adequate emergency vehicle access to accommodate the weight and size of vehicles. Ensure vegetation clearance and

management on public and private roads.

Policy S-6.5: Prohibit new subdivisions in Very High Fire Hazard Severity Zones unless the new subdivision is generally surrounded by existing built or entitled development or is located in an existing approved specific plan and meets secondary egress route requirements and the level of capacity of adjoining major highways and street networks can accommodate evacuation. Discourage new subdivisions in all other Fire Hazard Severity Zones.

Policy S-6.6: Define and maintain effective evacuation routes for neighborhoods within high-fire-hazard areas including the effective use of mass notification technology. Efforts should ensure the most at-risk populations are considered and informed.

Policy S-6.7: Perform regular life safety inspections of all commercial, multifamily, and occupancies in Fire Hazard Severity Zones to ensure compliance with City and State fire codes, standards, and regulations.

Policy S-6.8: Require redevelopment located in a Fire Hazard Severity Zone to comply with the most current version of the California Building Codes and California Fire Code. Encourage **post-fire redevelopments** located outside of a Fire Hazard Severity Zone to comply with the most current version of the California Building Codes and California Fire Code.

"Post-fire redevelopments" are when a structure is entirely or partially redeveloped as a result of structural damage from a wildfire.

Policy S-6.9: Reduce the impacts of wildfire by meeting minimum State Fire Safe regulations for fire-resistant building materials, vegetation management, fire-adapted landscaping, fuel modification, and other fire hazard reduction programs.

Policy S-6.10: Ensure long-term maintenance of all fire hazard reduction projects, including community fire breaks and private road and public road clearance.

Policy S-6.11: Maintain water supply and infrastructure to meet the water needs of the Arcadia Fire Department.

Human-Caused Hazards

Hazardous Materials

Hazardous materials and chemicals are used daily in households and businesses throughout Arcadia. Not limited to the popular conception of large chemical and industrial factories, sources of hazardous materials can originate from seemingly innocuous places such as service stations, hospitals, dry cleaners, and almost any industrial business. Hazardous waste is any material with properties that make it dangerous or potentially harmful to human health or the environment. Hazardous waste can take the form of liquids, solids, contained gases, or sludge, and can be the byproducts of manufacturing processes or simply discarded commercial products, like cleaning fluids and pesticides.

Hazardous Materials Sites

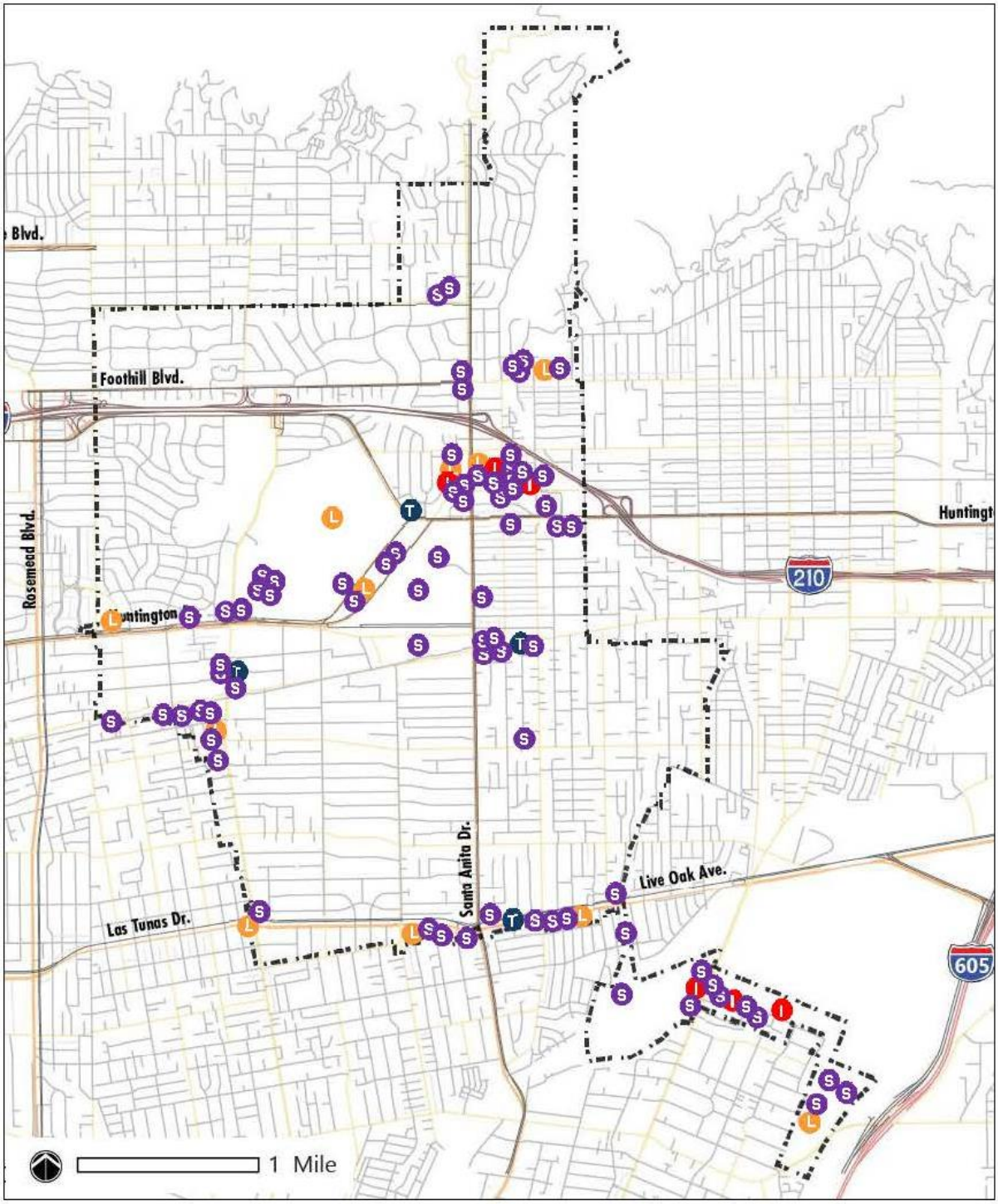
Arcadia's land use patterns generally separate industry from residential uses, although large-scale industrial activities have the potential to impact broad areas should an accident occur. Also, commercial freight carriers transporting hazardous substances along major roads or railways present potential hazards. Federal, State, and County agencies enforce regulations for hazardous waste generators and users, and these regulations provide a high degree of protection. The Arcadia Fire Department has inspection programs to monitor proper storage of hazardous materials. The Los Angeles County Fire Department's Health Hazardous Materials Division is Arcadia's Certified Unified Program Agency, meaning they manage and have jurisdiction over Arcadia's Hazardous Materials program.

Figure S-9 shows the general location of businesses that use, store, produce, or transport hazardous materials. Specific site addresses are not given as businesses that use, store, produce, or transport hazardous materials change over time. Also, new sites can be discovered or existing sites remediated. Areas with concentrations of such businesses include the industrial districts along the railroad line between Santa Anita Avenue and Second Avenue, at the southern edge of Arcadia near the San Gabriel River, and commercial districts along Duarte Road, Baldwin Avenue, Foothill Boulevard, and Live Oak Avenue.

Hazardous Material Generators

The U.S. Environmental Protection Agency (EPA) maintains and publishes a database that lists properties that handle or produce hazardous materials. Small businesses like dry cleaners, auto repair shops, hospitals, and metal plating shops are usually defined as generators of small quantities of hazardous waste. The EPA defines a small quantity generator as one which produces between 100 and 1,000 kilograms of hazardous waste per month. As of 2022, approximately 78 small quantity generators operated in Arcadia. Many of these businesses are located in the industrial and commercial districts mentioned above (Figure S-9).

Large quantity generators include large manufacturing facilities and businesses that deal with certain chemicals or materials, like pharmacies or chemical manufacturers. The EPA defines a large quantity generator as a business which produces over 1,000 kilograms of hazardous waste per month. As of 2024, 11 large quantity generators are located in Arcadia. Of the 11 large quantity generators most deal with medical waste, four are manufacturers, and one is a horse racetrack.



Hazardous Materials Sites

- Multiple Hazards
- CERCLIS Sites
- Leaking Underground Storage Tank
- Large-Quantity Generators
- Small-Quantity Generators
- Transporter of Hazardous Materials
- Toxic Release Inventory

Figure S-9 Hazardous Materials

Underground Storage Tanks

An underground storage tank is any one or combination of tanks, including associated piping, used to contain industrial solvents, petroleum products, and other hazardous substances. Since the early 1980s, the State has recognized leaking underground storage tanks as the primary cause of groundwater contamination by gasoline compounds and solvents. In California, regulations aimed at mitigating underground storage tank leaks were initiated in 1983. The following year, underground tank systems were required to be installed in accordance with new standards that addressed prevention of future leaks.

Legislation also required owners of known leaking underground storage tanks to prepare cleanup plans. Many of the leaking tanks were at gasoline service stations or businesses that maintained fuel tanks for business operations. Through vigorous programs to address these conditions, leaking underground storage tank issues in Arcadia have largely been abated.

Household Hazardous Materials

Leftover household products that contain corrosive, toxic, ignitable, or reactive ingredients are referred to as household hazardous waste. Products such as paints, cleaners, oils, batteries, and pesticides contain potentially hazardous ingredients. These products require special care in their disposal, as improper methods such as pouring them down drains, onto the ground, or into storm sewers, or throwing them out with household trash can pollute the environment and pose a threat to human and animal health.

See the Circulation and Infrastructure Element for a discussion of how the City manages household hazardous waste and e-waste.

City programs, operated jointly with the County of Los Angeles, allow residents to take advantage of curbside pickup services that deliver the household waste to proper disposal or recycling facilities, or to drop off household wastes at specified locations during countywide “round up” events. Residents can also drop off used oil and filters at advertised locations in the City year-round. Through comprehensive and multilingual resident education efforts, the City has been able to limit incidents of illegal household hazardous waste disposal.

Used or discarded electronics, such as televisions, cell phones, and obsolete equipment like videocassette recorders are referred to as e-waste. Electronic components can contain toxic metals and non-biodegradable materials that should not be put into sanitary landfills.

Goals and Policies

As is the case with natural hazards, recognition of human-caused hazards and mitigation represent the most effective means of minimizing the number and scope of accidents resulting from the presence of hazardous materials in the community, and associated with terrorism. Cooperative City efforts with Federal and State programs effectively regulate the use, storage, and transportation of hazardous materials. Programs such as the Hazardous Materials Disclosure Program require that businesses that handle defined

quantities of materials submit a hazardous materials inventory and contingency plan. The Aboveground Petroleum Storage Act requires owner and operators of aboveground petroleum storage tanks to file with the State Water Resources Control Board and to develop and implement a spill prevention control and countermeasure plan. The Fire Department handles abatement and cleanup of any hazardous material deposited on any property or facility in Arcadia in compliance with State and Federal standards. Additionally, the City promotes public awareness for proper handling and disposal of household hazardous waste.

Goal S-7:

A continued high level of protection from risks to life, the environment, and property associated with human-caused hazards in Arcadia

Policy S-7.1: Adopt and strictly enforce the most current regulations governing hazardous waste management.

Policy S-7.2: Minimize exposure of the environment, critical facilities, and residences to hazardous materials and pollution associated with industrial land uses.

Policy S-7.3: Ensure that all businesses and hazardous materials transportation services within the City adhere to the requirements of the City's hazardous materials plans and programs.

Policy S-7.4: Work with Los Angeles County Fire Department's Health Hazardous Materials Division to provide a high level of public awareness of all County and City household hazardous waste programs and activities.

Emergency Services

Arcadia pursues two key strategies to address threats to safety: (1) plan to prevent them and (2) develop responses that minimize the extent of distress when a disaster occurs. The City has consistently provided its residents, businesses, and visitors with superior emergency preparedness and response services. This commitment will continue by reducing hazards and responding quickly and efficiently to all types of incidents.

Fire Protection and Emergency Services

- The mission of the Arcadia Fire Department is to proactively prevent situations of risk due to fires and to deliver the services necessary to minimize the loss of life and property threatened by the hazards of fire, medical and rescue emergencies, hazardous materials incidents, and disaster situations. The Arcadia Fire Department is an all-risk department that provides fire suppression, urban search and rescue, paramedic ambulance service, fire prevention inspections/permits, public fire education programs, emergency preparedness planning, fire cause and origin investigation, fire patrols, and other services based on community needs. Services are provided from three stations, each of which has a primary service area but responds to wherever needed in Arcadia.

- Fire Station No. 105, at 710 South Santa Anita Avenue, provides fire protection services to the downtown business district and the southeast portion of Arcadia. The station was constructed in 2008 and can accommodate up to 12 firefighters per 24-hour shift. This station serves as headquarters and houses fire suppression staff,

administrative staff, and fire prevention bureau personnel. The station is equipped with one engine, one truck company, one rescue ambulance, a battalion chief vehicle, reserve engine, reserve rescue ambulance, and one State-owned fire engine.

- Fire Station No. 106, located at 630 South Baldwin Avenue, primarily serves the central and southwest portions of Arcadia. The station, constructed in April 1994, can accommodate up to 10 firefighters per 24-hour shift. Equipment includes one engine, one rescue ambulance, an urban search and rescue unit, a reserve truck, and equipment.
- Fire Station No. 107, at 79 West Orange Grove, provides fire protection services to the northern portion of Arcadia. The station has been in operation since 1948 and was remodeled in 2003. The station can accommodate up to four firefighters per 24-hour shift. The station is equipped with one engine, one State-owned Type VI engine, and one reserve engine. An antique fire engine—a 1926 American La France restored antique fire pumper—is on display as part of the Department's educational programs.

Staffing

The City strives to accommodate the National Fire Protection Association (NFPA) Standard 1710, Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments, which requires that a minimum of four firefighters be assigned to engine and truck companies.

Emergency Response Times

One of the primary concerns of the Fire Department is response times; making every effort to reduce or maintain response times continues to be a goal. Response times for the Fire Department as of February 2022 were as follows:

1. The Fire Department responded to fire emergencies in 4 minutes or less for the arrival of the first arriving engine company at the fire suppression incident or 8 minutes or less for the deployment of a full first alarm assignment 90% of the time.

2. The response performance standard is the arrival of advanced life support on scene within 5 minutes 90% of the time.

The Fire Department strives to comply with NFPA Standard 1710, which states first-arriving fire department units should arrive at the scene of either a fire or medical emergency within 240 seconds 90 % of the time.

As new commercial and industrial development occurs within the Live Oak Corridor and Lower Azusa Reclamation area consistent with the Land Use Plan, the City will assess whether Fire Department response times to these areas remain sufficient and within NFPA Standard 1710. Issues considered during such an assessment would include verifying that equipment and staffing resources meet response time standards or whether a fourth fire station would be needed to serve the southeast portion of Arcadia.

Increased traffic on major, primary, and secondary arterials and enhanced collector roads could potentially affect response times. The City will evaluate options that may help maintain or enhance response times; these options may include the following:

1. Add traffic signal preemption devices at major intersections and install traffic signal preemption emitters on emergency response vehicles.

2. Explore the possibility of integrating mobile data computers (MDC) on emergency response vehicles and the City's intelligent transportation system. One of the functions of an MDC is to provide a suggested response route to emergency incidents. Integrating the intelligent transportation system and MDC could provide a method of maintaining traffic flow at intersections along suggested response routes.

Fire Prevention and Emergency Services Programs

Fire prevention is the preferred way of protecting Arcadia from the dangers of fire. Fire prevention consists of design review and inspection of commercial and residential structures under construction; periodic life safety inspections of commercial, multifamily, and occupancies in fire hazard severity zones; and public education programs. Although it is difficult to quantify, the City's Fire Prevention Program has greatly reduced property loss, injuries, and loss of life associated with incidents and fires. In 2023, members of the Arcadia Fire Department conducted 3,461 fire inspections of businesses and residences to review new construction, perform annual life safety inspections, and ensure fire code compliance. Fire Prevention Bureau staff perform fire code compliance inspections on certain new businesses that are of a higher risk in nature. Performing this initial inspection aids business owners by providing them specific safety requirements that their occupancy will need prior to commencing operations.

The City will periodically assess the necessity for additional staffing in the Fire Prevention Bureau as commercial occupancies increase. With the increases in commercial occupancies, fire and life safety inspection loads will increase, and as will the potential for needing additional staffing in the Fire Prevention Bureau.

Since emergency medical and rescue services represent the majority of annual response incidents, the City established the Paramedic Membership Program to minimize the cost to the community for emergency response. Enrollees sign up with the program voluntarily and pay a nominal membership fee. In return, the program protects its members from all out-of-pocket expenses for emergency paramedic and ambulance transport services provided within Arcadia as a result of a 911 call. Since the program's inception, members have

saved over one million dollars on emergency paramedic and ambulance services.

Public education is one of the key elements in safeguarding a community from fire and environmental hazards. Accordingly, the Arcadia Fire Department routinely and enthusiastically shares fire safety knowledge with the community. In 2024, the Fire Department organized 31 public education tours of fire stations and 24 demonstrations for the Arcadia Unified School District and various community organizations. During Fire Prevention Month, Fire Prevention Bureau staff and fire suppression personnel coordinate visits to school campuses to give fire safety presentations to both students and teachers. The City also encourages residents to register for the free online program Community Connect, which allows property owners to provide valuable information to first responders such as the number of people living in the home, where hazardous materials are stored, and where the bedrooms are. This allows the response team to more effectively provide their services if a disaster strikes. The Arcadia Fire Department also publishes educational videos and other materials to encourage residents to create their own Emergency Management System so communities can better prepare themselves to respond to any given hazard. Furthermore, the City created an emergency notification system, Alert Arcadia, that can notify residents immediately with emergency alerts and updates.

Water Supply for Fire Suppression

According to the City's 2020 Urban Water Management Plan, Arcadia's main sources of water are local groundwater pumped from the Main Basin and Raymond Basin and imported surface water from the Metropolitan Water District of Southern California. These sources, along with measures to conserve and recycle water, are projected to accommodate future water demands, including those of the Arcadia Fire Department.

Joint Training Facility

The City is planning for construction of a joint training facility to be utilized by the Fire Department, and other City Departments. With the anticipated increase in call volumes, it becomes even more important to keep units and crews in town at a local training site for rapid response to emergencies while crews are involved in training exercises.

The primary element of the joint training facility would be a training tower with an enclosed stairwell, exterior balconies, accessible rooftops, water standpipe and sprinkler systems, smoke-generating system, anchor points for repelling, and a burn room for live fire training. Such a facility would enable Fire and Police personnel to practice multiple disciplines within their areas of expertise. Training props would be available to simulate trench rescue, confined space rescue, and building collapse scenarios. These training props would enable Fire, Police, and Public Works personnel to practice the rescue of persons injured or trapped and provide a suitable site for Public Works and Fire personnel to stay current in Occupational Safety and Health Administration (OSHA) mandated training. Additionally, a multi-use community room would be available to all City of Arcadia Departments for classroom training and meetings.

The addition of a local, City-owned joint training facility will assist the Fire Department with maintaining its Insurance Services Office (ISO) Class I rating. The ISO Class I rating benefits the entire community by keeping fire insurance costs lower for commercial and residential property owners.

Law Enforcement and Crime Prevention

Arcadia residents and businesses enjoy a very safe community. The mission of the Arcadia Police Department is “dedication to protecting quality of life and providing the highest level of service.” Arcadia emphasizes that the best way to provide a safer community and reduce the cost of providing law enforcement services is to prevent crime. The majority of crimes that the Police Department responds to are property crimes, the largest occurring property crime being larceny, followed by burglary. Only a small percentage of crimes in Arcadia are violent crimes.

In 2003, the Arcadia Police Department moved into its new headquarters adjacent to City Hall on Huntington Drive. The department, officially established in 1926, has a history of dedication to the community and professional police service. The Police Department's motto is "Making a Difference."

The Arcadia Police Department has over 70 sworn peace officers and 35 support staff. The Police Department also employs a volunteer services coordinator, part-time crossing guards, reserve police officers, and civilian volunteers. In addition to general duty policing, the Police Department has a detective bureau, traffic and parking bureau, records department, dispatch department, community and youth services department, and several other specialized teams and police units. The community and youth services department is primarily responsible for the public outreach and public education efforts of the Police Department.

Community-based policing is the foundation philosophy of the Arcadia Police Department. This philosophy is based on a strong relationship between the Police Department and the community at large. The Police Department maintains these relationships throughout the year through public speaking engagements, meetings, and public events. This approach is augmented by its various volunteer programs. The volunteer services section allows the Police Department to augment its resources without additional costs to the City. For example, the Amateur Radio and Auxiliary Communications Service is a volunteer program that uses amateur radio ("ham") operators for crime suppression, surveillance, disaster, and special events communications. The Chaplain Program, initiated in 1994, offers spiritual guidance, counsel, and assistance for officers and their families. The Volunteers in Patrol Support provides additional volunteer support to the Arcadia

Police Department operations, increases police visibility in Arcadia, and enhances partnerships with the community. The Mounted Volunteer Patrol program assists the regular mounted officers and other Police Department officers with patrol of horse trails, the shopping mall, and Santa Anita Park. The Arcadia Police Department Explorer Program is designed for youth 14 to 18 years of age who assist the police with searches for evidence, report writing, desk officer duties, command post operations, crime prevention surveillance, disaster assistance, crowd and traffic control, security at major events, and other challenging assignments.

Mutual Aid Agreements

While the Arcadia Police Department is tasked with preserving the safety and quality of life of the community and the Fire Department is tasked with the responsibility of fire prevention and fire suppression in Arcadia, both departments team with other public safety agencies to coordinate during emergencies. These teaming arrangements are handled through automatic and mutual aid agreements, which obligate the public safety departments to help each other under pre-defined circumstances.

The Arcadia Fire Department maintains reciprocal automatic aid agreements for fire protection with the surrounding Cities of Monrovia, Pasadena, South Pasadena, San Marino, San Gabriel, Sierra Madre, Alhambra, Montebello, Monterey Park, Glendale, and Burbank and Los Angeles County. The City also has a mutual aid contract with the U.S. Forest Service for fire protection in hillside and brush areas. As an additional safety measure, the City participates in the State of California Master Mutual Aid program.

The Police Department maintains a Special Weapons and Tactics (SWAT) team comprised of approximately 16 tactical operators. The Arcadia Police Department is a member of a regional police helicopter program, called the Foothill Air Support Team (FAST). FAST is a cooperative program among the Cities of Alhambra, Arcadia, Monrovia, Covina, Pasadena, Glendora, La Verne, San Marino, Sierra Madre, and West Covina that provides regional helicopter support services to aid in any crime or emergency situation.

Threats to National Security

After the catastrophic events of September 11, 2001, the harsh reality of large terrorist attacks affecting the United States domestically became part of the public consciousness. In response, the City's emergency preparedness and response services expanded to address terrorism issues. At the Federal, State, and local levels, a considerable amount of information has been generated on potential vulnerabilities, protective measures, and anti-terrorism technologies. The City's Police and Fire Departments recognize the need not only to learn from the lessons from September 11, but also to collectively address terrorism planning and policy issues that most affect Arcadia.

The City's strong relationship with Federal and State law enforcement agencies is helping secure the City. The California Anti-Terrorism Information Center was

formed in the wake of the September 11 attacks on the World Trade Center and the Pentagon to provide law enforcement with statewide intelligence support to combat terrorism. Through the center, law enforcement agencies in California can obtain information on terrorist threats and activities anywhere in the State through a secure, central database. Reliable information from the center that meets the stringent guidelines for intelligence gathering and civil rights protections is made available only to authorized local, State, and Federal law enforcement personnel as necessary to protect the health and safety of Californians and others at risk from criminal terrorist activity.

Goals and Policies

Arcadia's investments in its fire and police forces have created a community that experiences very low levels of fire incidents and crime and allows residents to participate in volunteer programs that help keep the community safe. To address possible threats to national security, the City will continue to work with Federal and State law enforcement agencies.

Goal S-8: **To provide a continued high level of fire and police protection services, with an emphasis on reducing risk and education**

Policy S-8.1: Involve Police and Fire Department personnel as an integral part of new development and redevelopment review process.

Policy S-8.2: Integrate new technologies and crime and fire prevention concepts into the design and construction of new, remodeled, and replaced development, as well as into all public facilities and parks.

Policy S-8.3: Maintain fire and police stations, facilities, and services sufficient to meet high public safety standards, as established by the City Council.

Policy S-8.4: Monitor the development of technology for fire and law enforcement services and acquire and use ~~of~~ the latest technology as funding permits to enhance emergency services.

Policy S-8.5: **Continue to prioritize and maintain robust** community engagement in crime prevention and community safety by supporting community participation in crime and fire prevention through public education and outreach programs.

Policy S-8.6: Maintain automatic aid agreements, mutual aid agreements, and communication links with

County, State, and Federal agencies and with other municipalities participating in emergency operations planning.

Policy S-8.7: Coordinate information sharing with State and Federal law enforcement agencies regarding potential terrorist threats.

Policy S-8.8: Promote public awareness and preparedness regarding any unique emergency response to address terrorist threats.

Policy S-8.9: Provide the City of Arcadia with an all-risk fire service by providing and maintaining a full range of services that are intended to instill a sense of safety and well-being throughout the community. Services will include emergency medical services, fire prevention and education, protection from hazards of fire, hazardous materials, domestic terrorism, and urban search and rescue.

Policy S-8.10: Strive to meet minimum training requirements for all safety personnel set forth by State and Federal guidelines.

Policy S-8.11: Require new development projects to pay their fair share of costs associated with any necessary increases in public safety equipment, facilities, and staffing to provide life safety protection.

Policy S-8.12: Provide and maintain a joint training facility for the Fire Department and other City Departments.

Emergency Preparedness

Emergency preparation and response are important components in ensuring residents are ready for hazards and first responders can adequately serve residents in the event of a hazard. The City has an Emergency Operations Plan that informed this element and acts as an extension to the State of California Emergency Plan and the Los Angeles County Operational Area Emergency Operations Plan.

Preparedness

The City of Arcadia Fire Department provides fire and medical emergency services to the City. The City also encourages residents to register for the free online program Community Connect, which allows property owners to provide valuable information to first responders such as the number of people living in the home, where hazardous materials are stored, and where the bedrooms are. This allows the response team to more effectively provide their services if a disaster strikes. The Arcadia Fire Department also publishes educational videos and other materials to encourage residents to create their own Emergency Management System so communities can better prepare themselves to respond to any given hazard. Furthermore, the City created an emergency notification system, Alert Arcadia, that can notify residents immediately with emergency alerts and updates.

Response

Currently, the City's response capacity meets the needs of the community, with an average emergency response time of 2–8 minutes depending on the services required and the severity of the incident. Regarding mutual aid and coordination, the City of Arcadia is located within Office of Emergency Management Mutual Aid Region I, and the Office of Emergency Services (OES) Southern Administrative Region. During local emergencies, mutual aid is requested from nearby agencies by the Incident Commander. The City's Emergency Operations Plan includes recommended National Incident Management System and Standardized Emergency Management System trainings, which the City bases its training decisions on for designated emergency personnel.

Emergency Response Facilities

Emergency response facilities are those activated during an emergency and used to respond to the hazard. The City operates an independent Fire Department for fire protection and other medical emergency-related services. There are three fire stations in Arcadia, one in the center of the City along the western end of Huntington Drive and another at the eastern end of College Drive. The third station sits in the north along West Orange Grove Avenue nearest the Very High Fire Hazard Severity Zone in the foothills.

Numerous fire stations operated by the County of Los Angeles and neighboring cities lie just beyond Arcadia's boundaries. Furthermore, the Angeles National Forest and other smaller State Park lands are just beyond the northern border

of Arcadia and are under the fire protection of their associated agencies. Coordination between jurisdictions and different levels of government is imperative for fire management.

Critical Facilities

Critical facilities are places essential to the function of the City or public buildings that can be used to gather people and equipment during hazard response and recovery (see Table S-4). There are 12 critical and essential facilities that are vulnerable to hazards, as shown in Figure S-10, Critical Facilities.

Non-Critical Public Facilities

Non-critical public facilities are those that can be used for hazard recovery to gather resources, distribute information, or serve as shelters (see Table S-4). These are generally flexible facilities that can be activated and would likely not all be used at once during a hazard event. Non-critical facilities can also serve as cooling facilities that provide air condition during extreme heat events. Some non-critical public facilities include Arcadia's schools and its two public libraries.

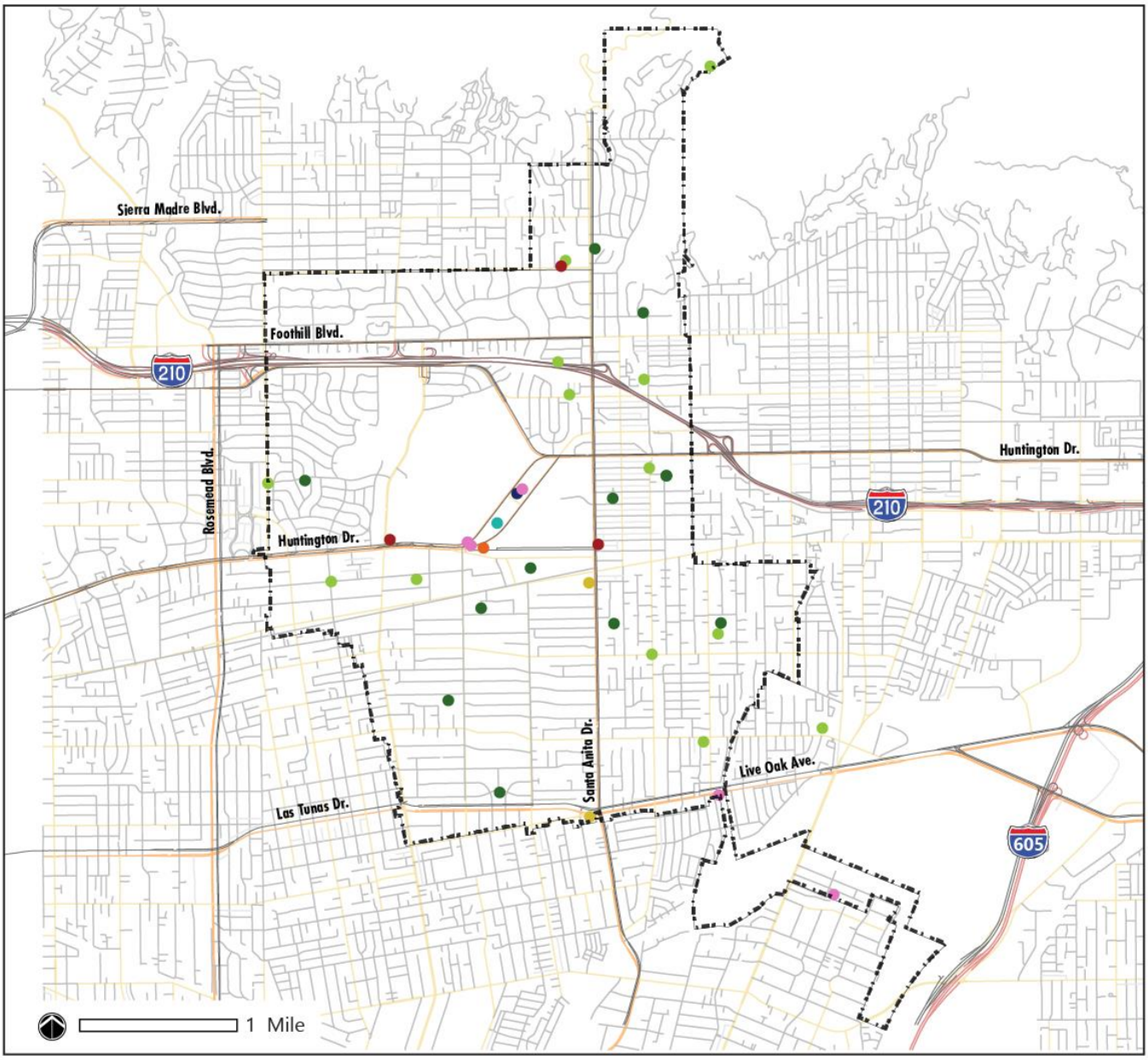


Figure S-10 Critical Facilities

Evacuation Routes

In the event of an extreme fire, flood, or other circumstance, evacuation may be necessary. To preserve the lives of Arcadia residents, it is important to ensure that the routes used for evacuation are unobstructed and in good condition. Evacuation routes in Arcadia include Colorado Boulevard, Huntington Drive and the 210 Freeway, and the main arterials shown in Figure S-11. These evacuation routes are outside of flood and fire hazard areas in Arcadia, and different routes can be activated as necessary to avoid hazards outside Arcadia. Additionally, there are two choke points in Arcadia where development in the VHFHSZ only have one point of access out of the community. These single points of access serve 117 homes, and both meet the evacuation route network on East Sycamore Avenue and shown on Figure S-12.

TABLE S-4. CRITICAL AND NON-CRITICAL FACILITIES

Facility Type	Name	Address	Relevant Risk
Libraries	City Library	20 West Duarte Road	Extreme Heat
	LA County Library	22 West Live Oak Avenue	Extreme Heat, Liquefaction
Police	**Police Station**	**250 W. Huntington Drive**	**Extreme Heat**
Fire	**Fire Station 105**	**710 S. Santa Anita Avenue**	**Extreme Heat**
	Fire Station 106	**630 S. Baldwin Avenue**	**Extreme Heat**
	Fire Station 107	**79 W. Orange Grove Avenue**	**Extreme Heat**
Schools	Arcadia High School	180 Campus Drive	Extreme Heat
	Dana Middle School	1401 South First Avenue	Extreme Heat
	First Avenue Middle School	301 South First Avenue	Extreme Heat
	Foothills Middle School	171 East Sycamore Avenue	Extreme Heat, Wildfire, Earthquake, Liquefaction
	Baldwin Stocker Elementary School	422 West Lemon Avenue	Extreme Heat
	Camino Grove Elementary School	700 Camino Grove Avenue	Extreme Heat
	Highland Oaks Elementary School	10 Virginia Drive	Extreme Heat, Wildfire
	Holly Avenue Elementary School	360 West Duarte Road	Extreme Heat
	Hugo Reid Elementary School	1000 Hugo Reid Drive	Extreme Heat, Earthquake, Liquefaction
	Longley Way Elementary School	2601 Longley Way	Extreme Heat
	Rancho Learning Center	150 South Third Avenue	Extreme Heat

TABLE S-4. CRITICAL AND NON-CRITICAL FACILITIES

Facility Type	Name	Address	Relevant Risk
	Rancho Lab School	150 South Third Avenue	Extreme Heat
Hospitals	**USC Arcadia Hospital**	**300 Huntington Drive**	**Extreme Heat**
Community Centers	Arcadia Community Center (City)	375 Campus Drive	Extreme Heat
Public Facilities	Museum Education Center	385 West Huntington Drive	Extreme Heat
	Arcadia Par 3 Golf Course	620 East Live Oak Avenue	Extreme Heat, Liquefaction
	Recreation & Community Services	375 West Huntington Drive	Extreme Heat
	City Hall	240 West Huntington Drive	Extreme Heat
	Public Works Yard	11800 Goldring Road	Extreme Heat, Liquefaction
	Chamber of Commerce Building	388 W. Huntington Drive	Extreme Heat
Parks	Bicentennial Park	518 East Longdon Avenue	Extreme Heat
	Bonita Park	100 South Second Avenue	Extreme Heat
	Camino Grove Park	1420 South Sixth Avenue	Extreme Heat
	Civic Center Field	240 West Huntington Drive	Extreme Heat
	Eisenhower Memorial Park	601 North Second Avenue	Extreme Heat
	Fairview Avenue Park	542 Fairview Avenue	Extreme Heat
	Forest Avenue Park	132 West Forest Avenue	Earthquake, Extreme Heat, Liquefaction
	Hugo Reid Park	Michillinda Avenue and Hugo Reid Drive	Earthquake, Extreme Heat, Liquefaction
	Longden Avenue Park	1179 East Longden Avenue	Extreme Heat
	Newcastle Park	143 West Colorado Boulevard	Extreme Heat
	Orange Grove Park	67 West Orange Grove Avenue	Extreme Heat
	Tierra Verde Park	2nd Avenue and Camino Real Avenue	Extreme Heat
	Tripolis Friendship Park	Goldenwest Avenue and Fairview Avenue	Extreme Heat
	Wilderness Park	2240 North Highland Oaks Drive	Extreme Heat, Wildfire, Liquefaction

Note: Bolded text indicates a critical facility.

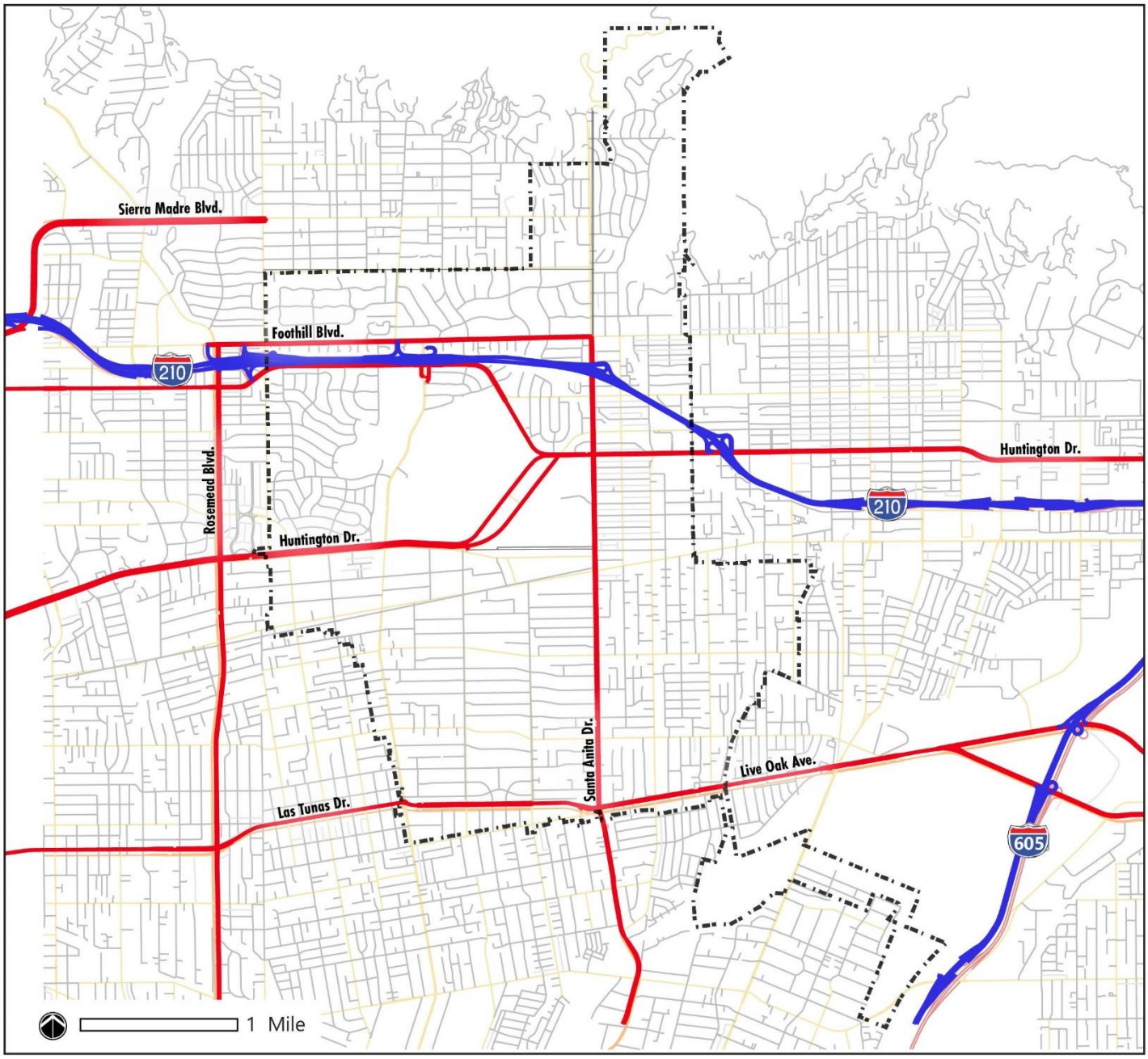
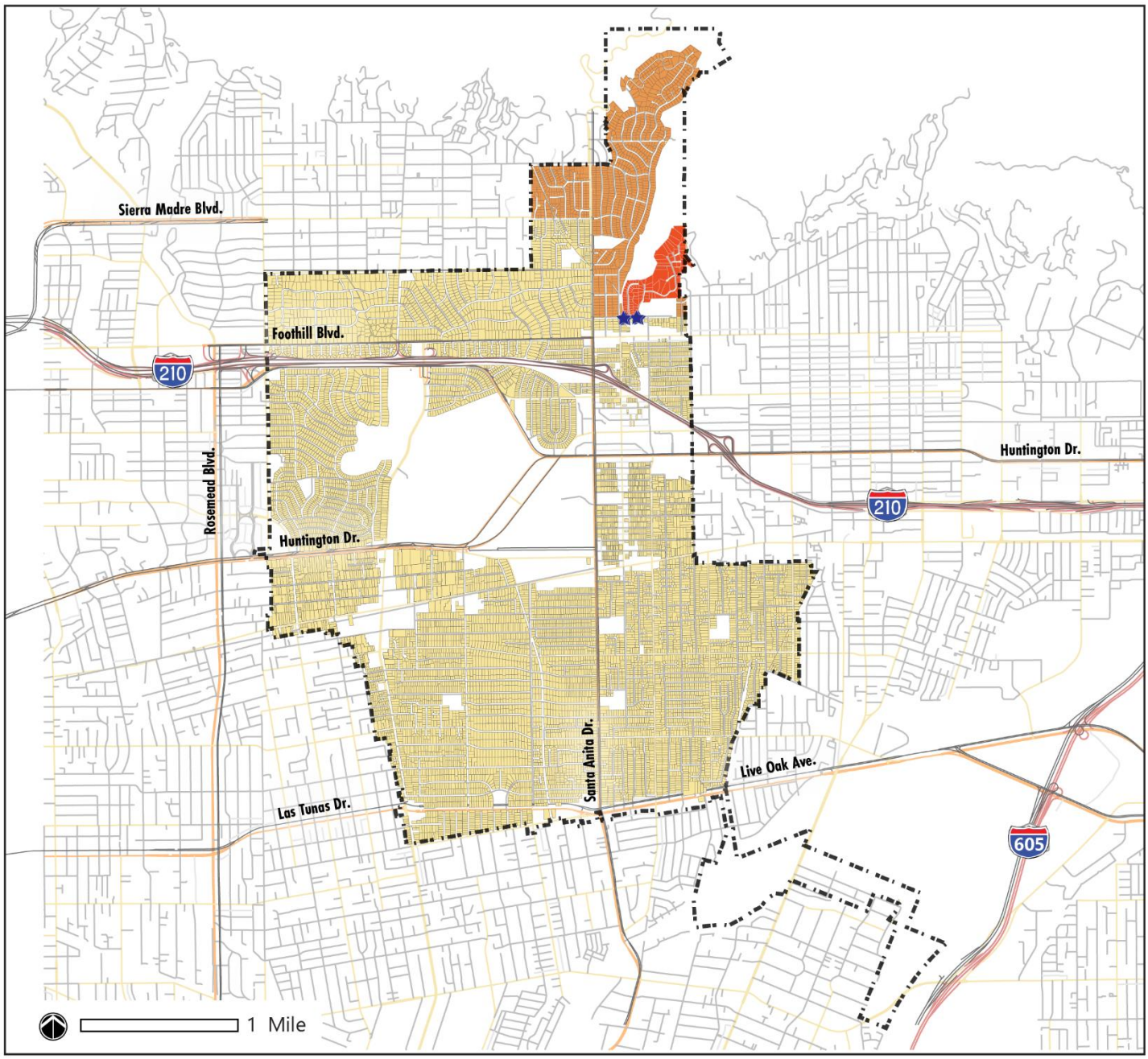


Figure S-11 Evacuation Routes



City Boundary

Residential Zones

Residential in VHFHSZ

Residential in VHFHSZ with Single Point of Access

Choke Point

Figure S-12 Residential Areas with Single Point of Access

Goals and Policies

Coupled with its commitment to prevent disasters large and small is the City's resolve to be well prepared to respond to any type of emergency. This includes a solid Emergency Management Plan and sound planning for critical facilities such as hospitals, police and fire facilities, communication and emergency operations centers, and places of community assembly.

Goal S-9: **Comprehensive and effective emergency and disaster response preparedness**

Policy S-9.1: Coordinate with Los Angeles County, adjacent municipalities, the Federal Emergency Management Agency, the California Emergency Management Agency, and other regional agencies in reducing the risk of loss of life, injury, and property damage in the event of an emergency.

Policy S-9.2: Coordinate with other government agencies and organizations to leverage resources related to seismic technology and information and emergency preparedness.

Policy S-9.3: Maintain an up-to-date Emergency Operations Plan and local Hazard Mitigation Plan on a 5-year basis to secure adequate Federal resources in the event of a disaster.

Policy S-9.4: Conduct ongoing public outreach and promote community awareness regarding emergency notifications, evacuation routes, and procedures to be followed in the event of an emergency. Focus outreach on identified vulnerable populations, for example by contacting and building partnerships with community-based organizations that represent the vulnerable population groups.

Policy S-9.5: Integrate the goals and action items from the City's emergency response and preparedness plans into regulatory documents and City processes, where appropriate.

Policy S-9.6: Monitor the development of technology for the use in the Emergency Operations Center, and acquire and use the latest technology as funding permits to enhance emergency services.

Policy S-9.7 Create resilience centers throughout Arcadia to ensure frontline communities are equipped to respond, recover, and rebuild after a hazard event.

Policy S-9.8 Support policies that promote education and resilience awareness about the effects of climate change- induced hazards and ways to adapt and build resiliency to climate change.

Policy S-9.9 Coordinate with other County and public agencies, such as transportation agencies and health care providers, on emergency planning, response activities, evacuation planning, and recovery resources. Focus recovery resources toward the most vulnerable households and populations (e.g. elderly individuals, individuals with disabilities, etc.).

Policy S-9.10 Ensure that essential public facilities are maintained during disasters.

Policy S-9.11 Pursue development impact fees to set aside funding for solutions to address future needs related to emergency response time in the City. This would ensure adequate fire protection for new developments and may include staffing, station coverage, apparatus, equipment, and infrastructure such as a preemption system integrated with City traffic lights.