



CHAPTER 8:

SAFETY ELEMENT

A r c a d i a G e n e r a l P l a n

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 its budgeting decisions, elected bodies allocate funds to fire and law enforcement services commensurate with overall public safety objectives. Critical to these decision processes is knowing the hazards present in a community and establishing safety standards. 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

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) avoiding hazards and threats through careful planning, 2) being prepared to respond to any and all crisis situations to minimize injury or loss, 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 to protect the community from threats to public safety. Maintaining a safe community requires constant assessment of the City's needs regarding emergency preparedness and hazards mitigation. While the City has no control over earthquakes or landslides, it can establish policies that minimize exposure to these hazards.

Our vision is to create a City where residents and businesses are and feel safe. In Arcadia, we go to work, school, and shopping 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. This 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. Government Code Sections 65302(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:

- Seismic hazards, including seismically induced surface rupture, ground shaking, and ground failure
- Dam/reservoir failure

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.

- Non-seismic ground failure such as slope instability leading to mudslides, landslides, and liquefaction
- Flooding
- Wildland and urban fires
- Presence and transport of hazardous materials
- Law enforcement and crime prevention
- Emergency services

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 two 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 storm water runoff and debris flows. Nonetheless, Arcadia 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.

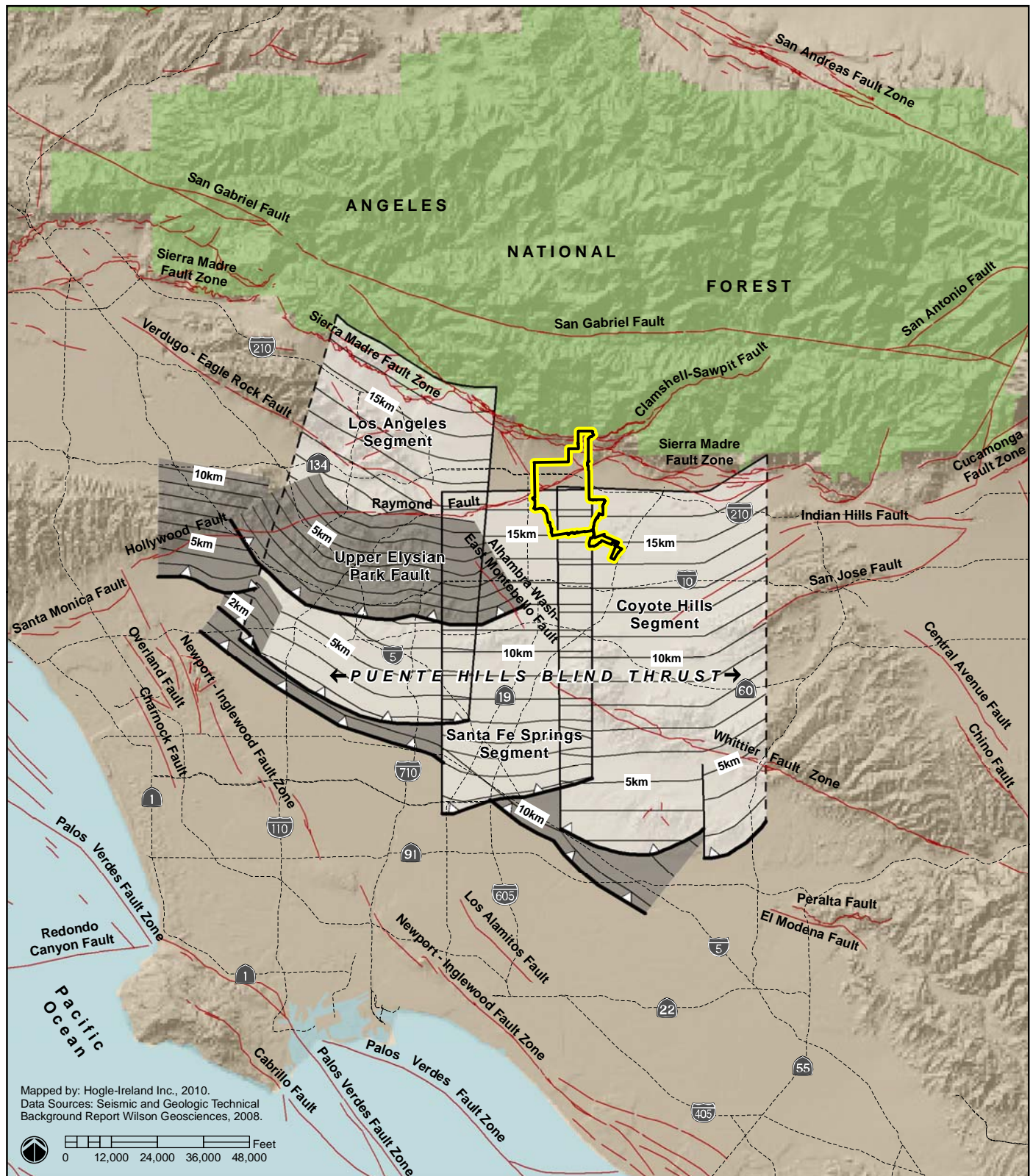


FIGURE S-1: REGIONAL FAULTS

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).

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, 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, the City of 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-1 and S-2):

- 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 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-1).

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 in Arcadia to the City due to ground shaking.

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

TABLE S-1: 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: Seismic and Geologic Technical Background Report for the City of Arcadia General Plan Update. Wilson Geosciences, Inc. September 2008.

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-2, 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-2: MODIFIED MERCALLI INTENSITY SCALE (MMI)

MMI 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.
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

TABLE S-2: MODIFIED MERCALLI INTENSITY SCALE (MMI)

MMI Scale	Intensity: Shaking	Intensity: Damage	Description
			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.

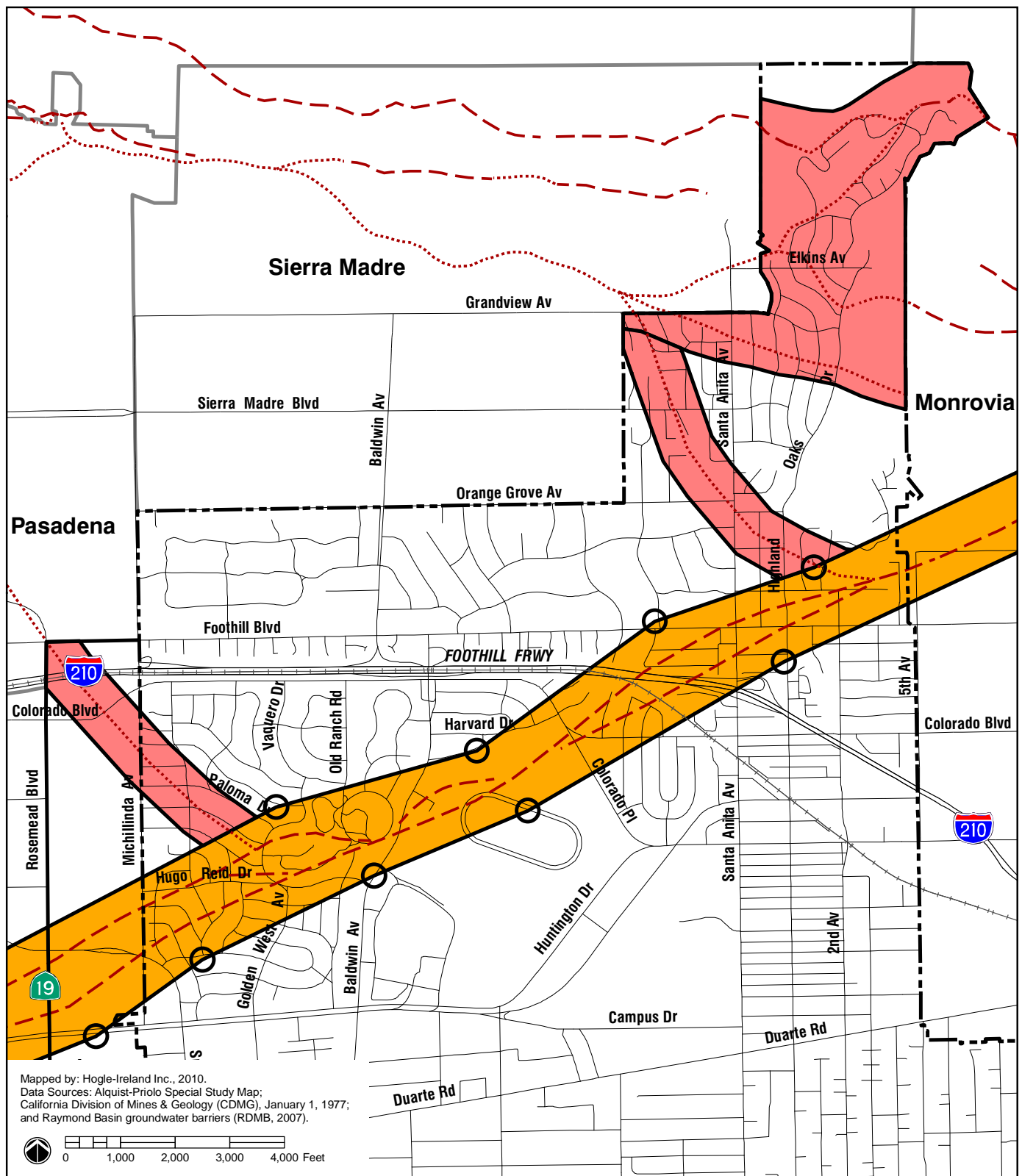
Source: *Seismic and Geologic Technical Background Report for the City of Arcadia General Plan Update*. Wilson Geosciences, Inc. September 2008.

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 (URM) 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 the City (Figure S-2) and has the potential to cause a five- to six-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.



Active or Potentially Active Fault Location

- Approximate
- Inferred or Possible Groundwater Barrier
- Alquist-Priolo Earthquake Fault Zone
- Fault Hazard Management Zone
- Turning Point

Base Map Features

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

FIGURE S-2: ALQUIST-PRIOLO AND FAULT RUPTURE HAZARD ZONES

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-2.

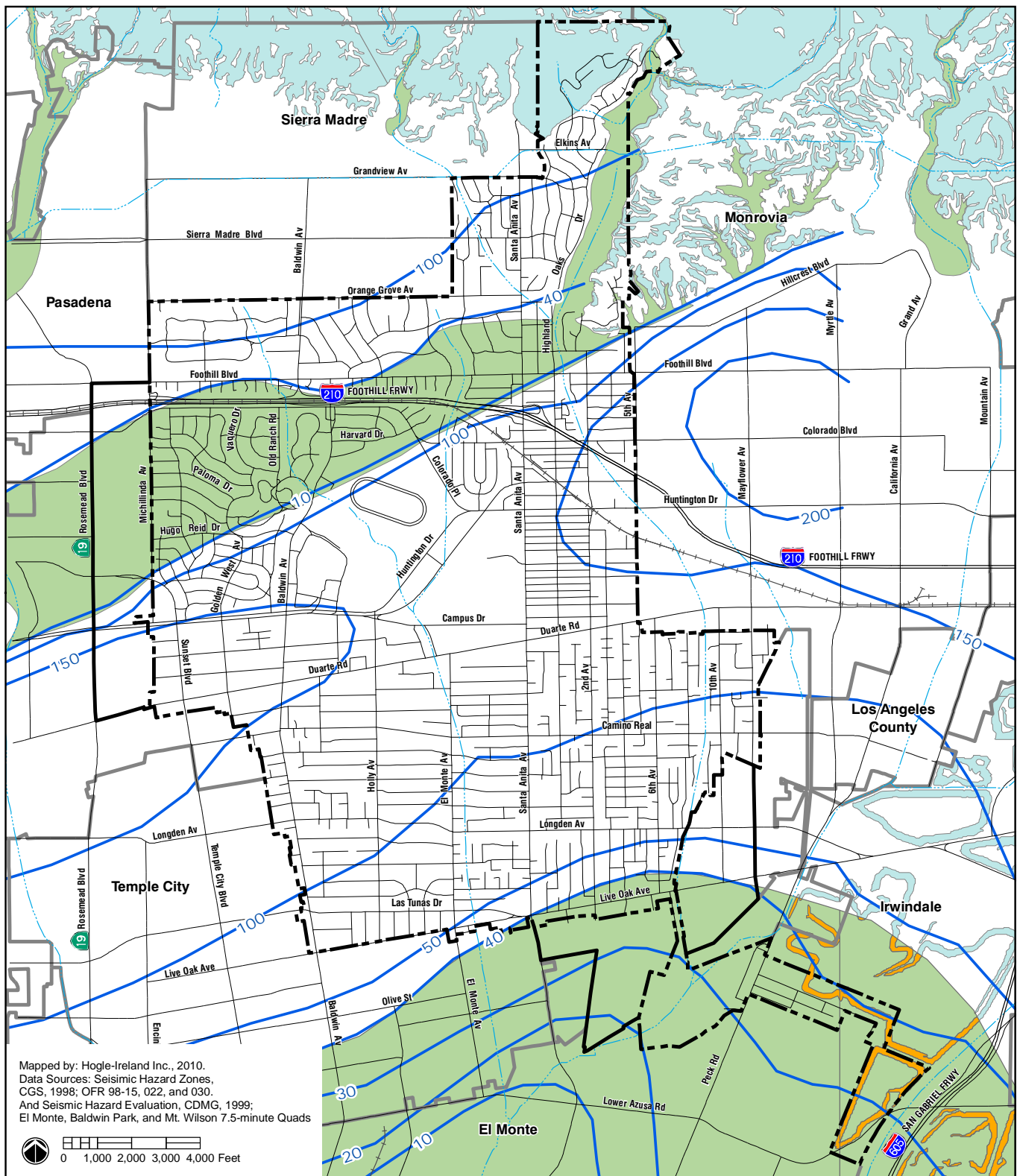
In addition to the known faults, Arcadia is crossed by potentially active and concealed fault traces whose precise locations are not known and/or which have not studied to the degree that activity is completely understood. Because of the Sierra Madre fault zone potentially impacts the northern corner of the City 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, or FHMZ, 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 the City. Figure S-2 identifies the proposed boundaries of an FHMZ 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 (Public Resources Code 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-3) 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 geologic formations characteristics.



Zones of Required Investigation

- Liquefaction Zone
- Earthquake-Induced Landslides
- Overlapping Liquefaction and Earthquake-Induced Landslides

Historically Highest Groundwater Contours

- Depth to groundwater in feet

Base Map Features

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

FIGURE S-3: LIQUEFACTION AND LANDSLIDE HAZARDS

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 substance. 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 caused 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-3 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.

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 the City'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-1:	Minimized potential for loss of life, physical injury, and property damage resulting from earthquakes and geologic hazards
Policy S-1.1:	Explore the creation of a fault hazard management zone for the Sierra Madre fault.
Policy S-1.2:	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-1.3:	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-1.4:	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-1.5:** Continue enforcing the most rigorous building and grading codes which govern seismic safety.
- Policy S-1.6:** Require the removal or retrofit, as appropriate, of any hazardous or substandard structures that may collapse in the event of an earthquake.

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.

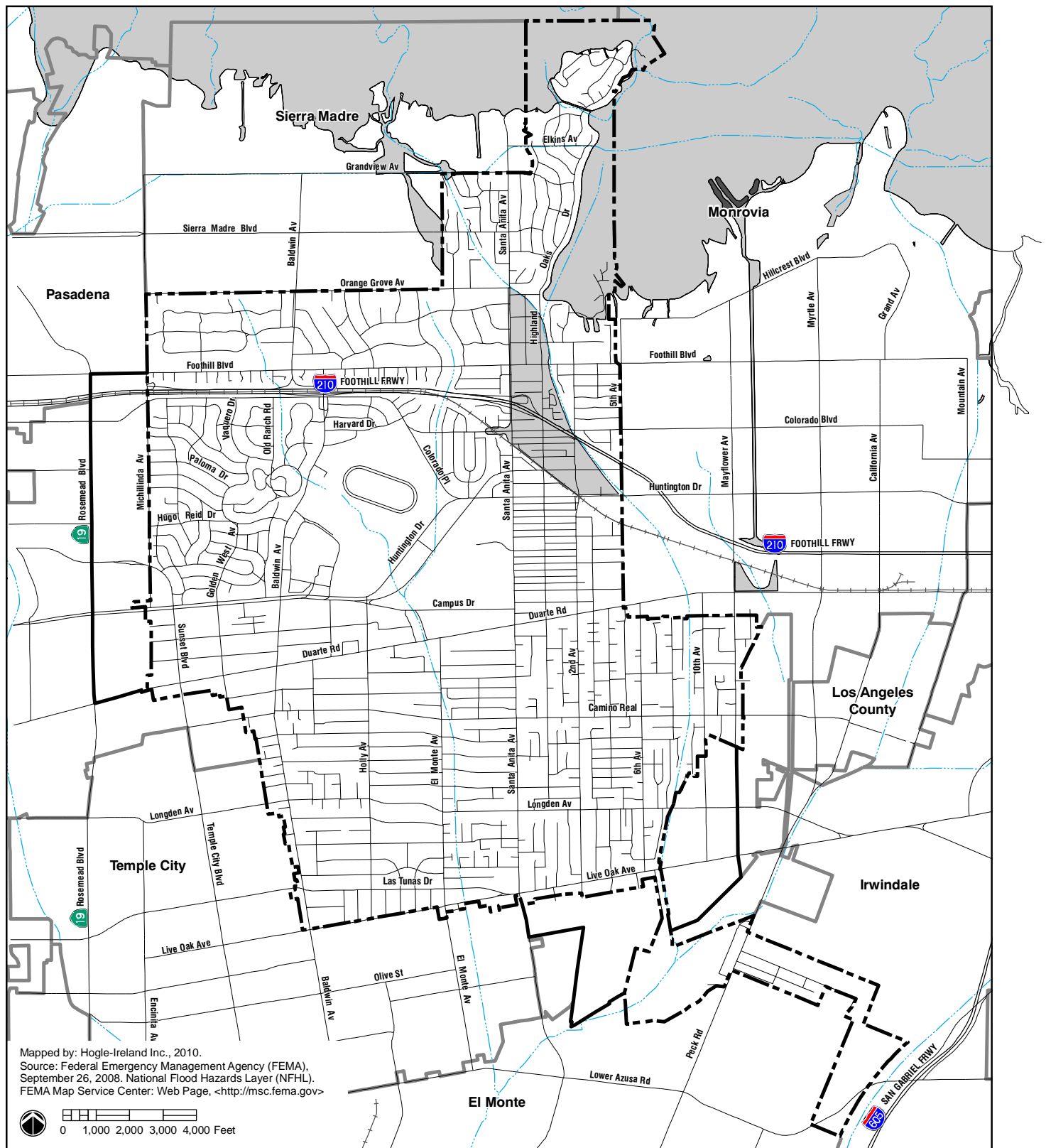
Natural (Storm) Flooding

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 of Arcadia participates in the National Flood Insurance Program. Flood Insurance Rate Maps, or FIRMs, which are prepared by the Federal Emergency Management Agency (FEMA), identify potential flood zones (Figure S-4). 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 one percent 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.

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 storm water runoff and helps recharge groundwater basins. Locally, the City maintains approximately four 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.

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





Flood Hazard Zones

- Areas of 0.2% annual chance flood.
- Areas in which flood hazards are undetermined, but possible.
- Areas determined to be outside the 0.2% annual chance floodplain.

Base Map Features

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

FIGURE S-4: 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-5).

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-4.

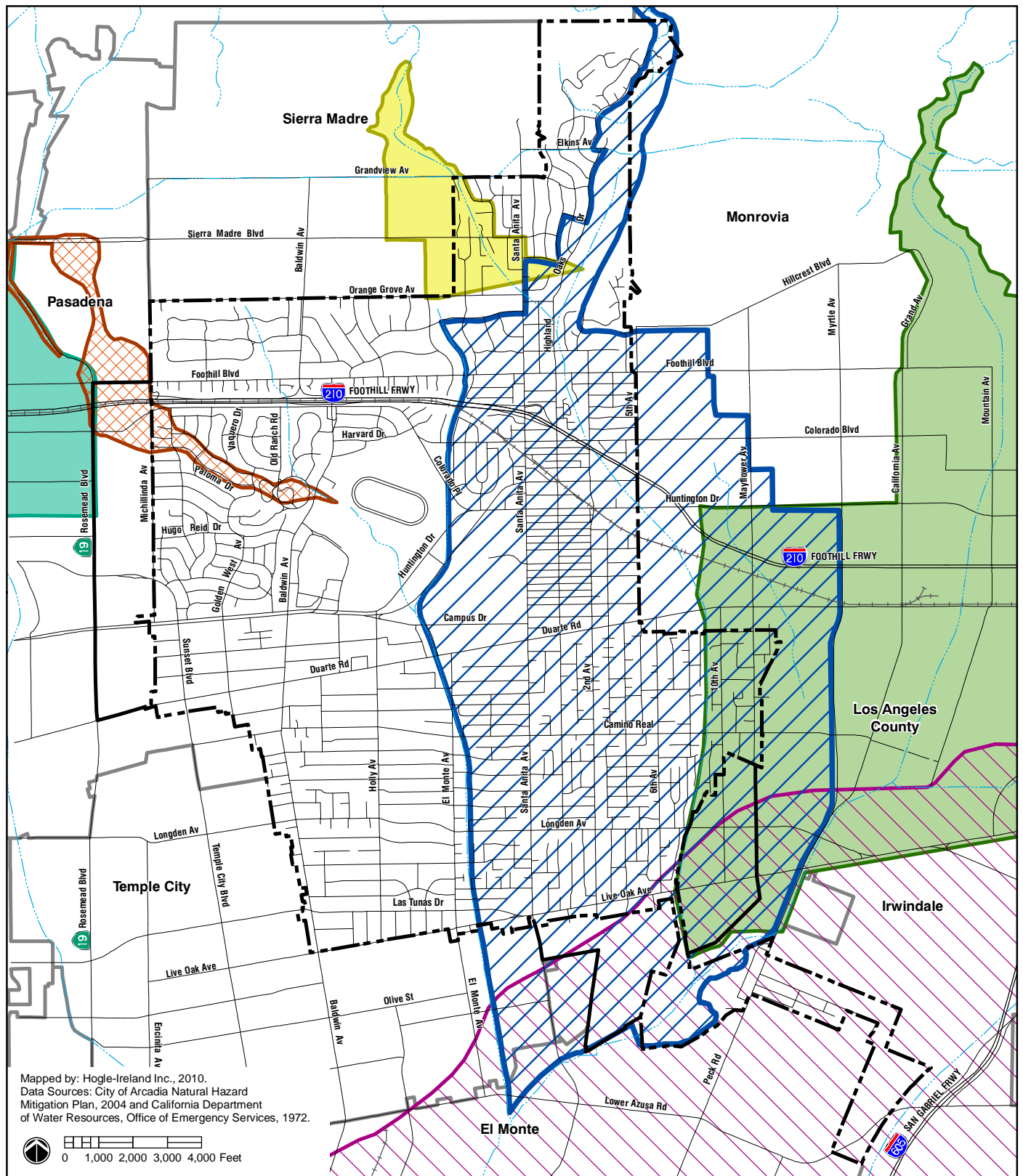
The Santa Anita Dam represents the facility that could have the greatest flooding impact on the City. A catastrophic failure of the Santa Anita Dam could result in floodwaters storming down Santa Anita Canyon to about Orange Grove Avenue and then spreading to cover roughly the eastern one-half of Arcadia 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 1925-27 by the then Los Angeles County Flood Control District, was part of a series of public works projects designed to control flood waters 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.

In 2009, the Los Angeles County Department of Public Works initiated a massive sediment removal project at the Santa Anita Reservoir to increase reservoir capacity and ensure compliance with California Department of Water Resources, Division of Safety of Dams' seismic stability requirements for the dam. Over one-half million tons of sediment is to be transferred to the Santa Anita Sediment Placement Site in Arcadia. Seismic safety retrofits to the dam include modifications to the dam's inlet/outlet works and the construction of a new dam riser.



Inundation Areas

- Santa Anita Dam
- Morris S. Jones Reservoir
- Santa Fe Dam
- Sierra Madre Dam
- Sawpit Dam
- Eaton Wash Dam

Base Map Features

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

FIGURE S-5: DAM INUNDATION ZONES

ARCADIA GENERAL PLAN - NOVEMBER 2010

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 above-ground 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.

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, planned improvements to Santa Anita Dam will provide for compliance with seismic safety standards for this dam. 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.

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

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—and the Los Angeles County Department of Public Works in particular—to protect Arcadia residents and businesses from potential inundation.

GOAL S-2:

Superior storm drainage and flood control facilities that minimize risk of flooding

- Policy S-2.1:** Prioritize improvements to Arcadia's storm drain system in areas that are prone to localized ponding and flooding.
- Policy S-2.2:** Continue rigorous maintenance of storm drainage and flood control facilities within the City's jurisdiction.
- Policy S-2.3:** 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 storm water permitting requirements (consistent with the National Pollutant Discharge Elimination Systems program, or NPDES) and employ Best Management Practices (BMPs).
- Policy S-2.4:** 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.

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.

Wildland Fires

Southern California has been ravaged by wildland fires since before humans settled the area, but fires were not of significant concern until people started building houses 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 to government agencies as well.

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, 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 brush clearance around structures,

controlled burns to protect habited areas, and limiting or avoiding any new development in high-risk areas.

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. On October 27, 1993, the Kinneola fire destroyed 122 single family homes in Altadena, Pasadena, and Sierra Madre. In 2009, Los Angeles County was ravaged by the Station fire, the largest brush fire in Los Angeles County's modern history. The fire burned an estimated 160,000 acres of land (approximately 250 square miles) across the Angeles National Forest, costing millions of dollars to fight, demanding extraordinary fire-fighting resources, and threatening communities very close to Arcadia. The northern portion of Arcadia has similar topography and vegetation as the areas destroyed by the Kinneola and Station fires, and represents the area in Arcadia most exposed to wildfire hazards. The local U. S. Forest Service office states that maintenance of Chantry Flats Road, which passes through Arcadia, Sierra Madre, and the Angeles National Forest, is critical to providing fire prevention and response activities within the natural hillside areas above the City.



California's Public Resource Code and Government Code 51175-89 direct the California Department of Forestry and Fire Protection (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 Very High Fire Hazard Zones in Arcadia. The map has been officially adopted by the City (see Figure S-6), and the City has targeted these areas to implement stringent wildland fire 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 four percent of the City Fire Department's total incident responses in 2007, fire damage to residential structures alone was estimated at around \$1.5 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.

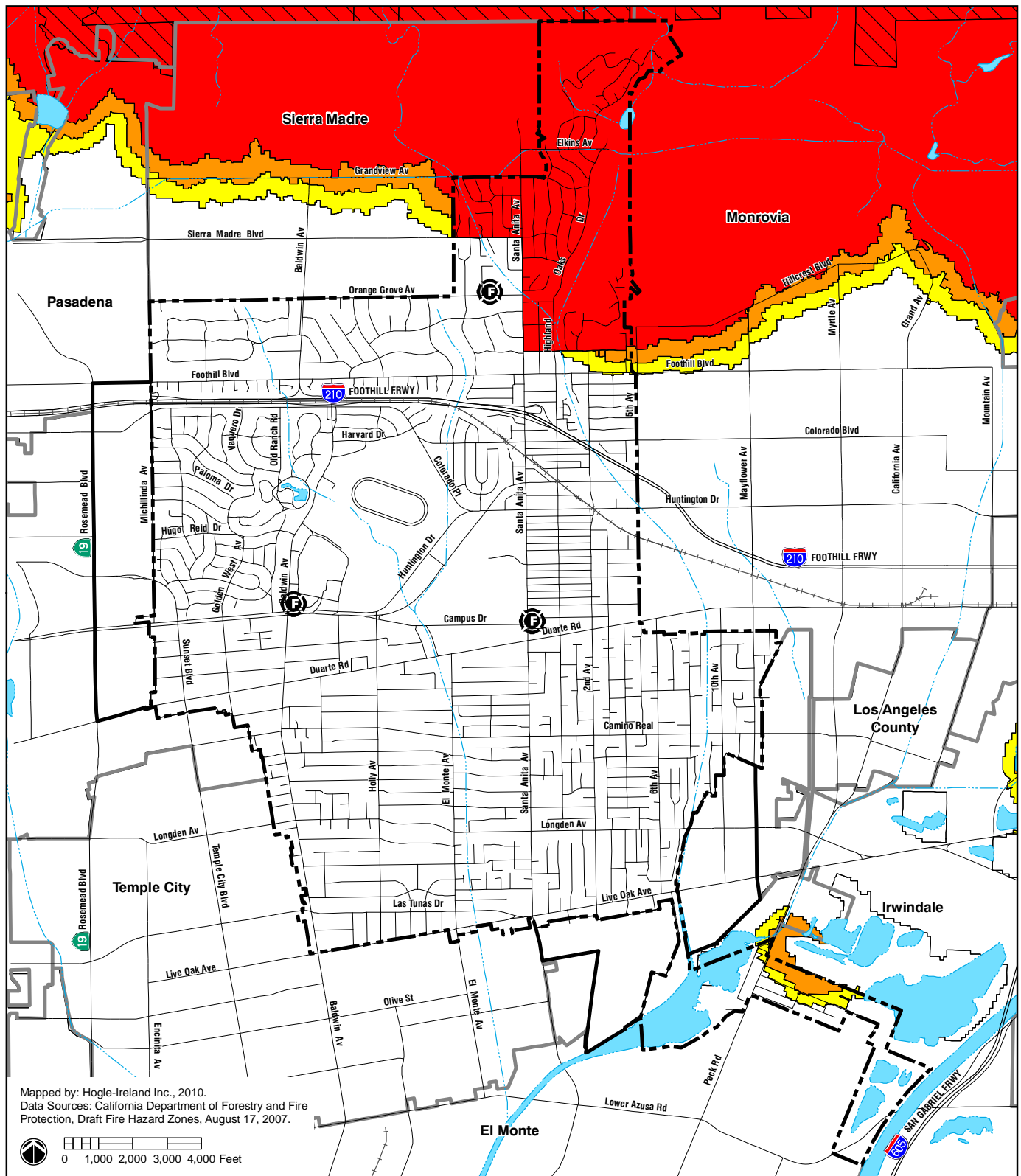
Due to factors such as manufacturing operations and/or storage involving chemicals or flammable materials, industrial businesses located north of Huntington Drive and east of Santa Anita Avenue, and those within the southeast corner of the City, have higher hazard levels than other uses in the City. 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. Mutual 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.

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 wildland fire 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 Very High Fire Hazard Severity Zones.



Fire Protection Responsibility Areas

- Federal and State Responsibility Areas (FRA & SRA)
- Local Responsibility Areas (LRA)

Fire Hazards Severity Zones

- Moderate
- High
- Very High

Base Map Features

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

Map Use Constraints:

CAL FIRE is remapping Fire Hazard Severity Zones (FHSZ) for State Responsibility Areas (SRA) & Very High Fire Hazard Severity Zones (VHFHSZ) recommendations in Local Responsibility Areas (LRA) to provide updated map zones, based on new data, science, & technology.

This dataset DOES NOT define final adopted zones in SRA or LRA and has no legal standing in FRA - users are cautioned to obtain the adopted zone data when it becomes available for actual decisions related to zones.

FIGURE S-6: FIRE HAZARD ZONES

GOAL S-3:

High level of protection from the dangers of wildland and urban fires

- Policy S-3.1:** Practice fire prevention, engineering, enforcement, and education as the primary means to reduce incidents of wildland and urban fires.
- Policy S-3.2:** 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-3.3:** Continue to develop public education programs that will provide Arcadia residents and businesses with information regarding proper and effective fire prevention and fire safety.
- Policy S-3.4:** 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, brush clearance, required fire flows, on-site or nearby fire-fighting equipment, and adequate emergency vehicle access to accommodate the weight and size of vehicles..
- Policy S-3.5:** Prohibit new development in areas which do not have adequate water pressure or fire flows until sufficient pressure and fire flows can reliably be provided and maintained.
- Policy S-3.6:** Define and maintain effective evacuation routes for neighborhoods within high-fire-hazard areas.
- Policy S-3.7:** Perform regular life safety inspections of all commercial, multifamily, and brush area occupancies to ensure compliance with City and State fire codes, standards, and regulations.

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 by-products 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.

Figure S-6 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 as 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 and at the southern edge of the City 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 usually are 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 2006, approximately 63 small quantity generators operated in Arcadia. Many of these businesses are located in the industrial and commercial districts mentioned above (Figure S-7).

Large quantity generators include large manufacturing facilities and businesses like 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 2008, three large quantity generators are located in Arcadia. Two of the three large quantity generators are located in industrial areas in the southeastern portion of the City, one along Lower Azusa Road by the San Gabriel River, and the other on Clark Street by Peck Road. The third site is located on La Porte Street near Santa Anita Avenue.

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.

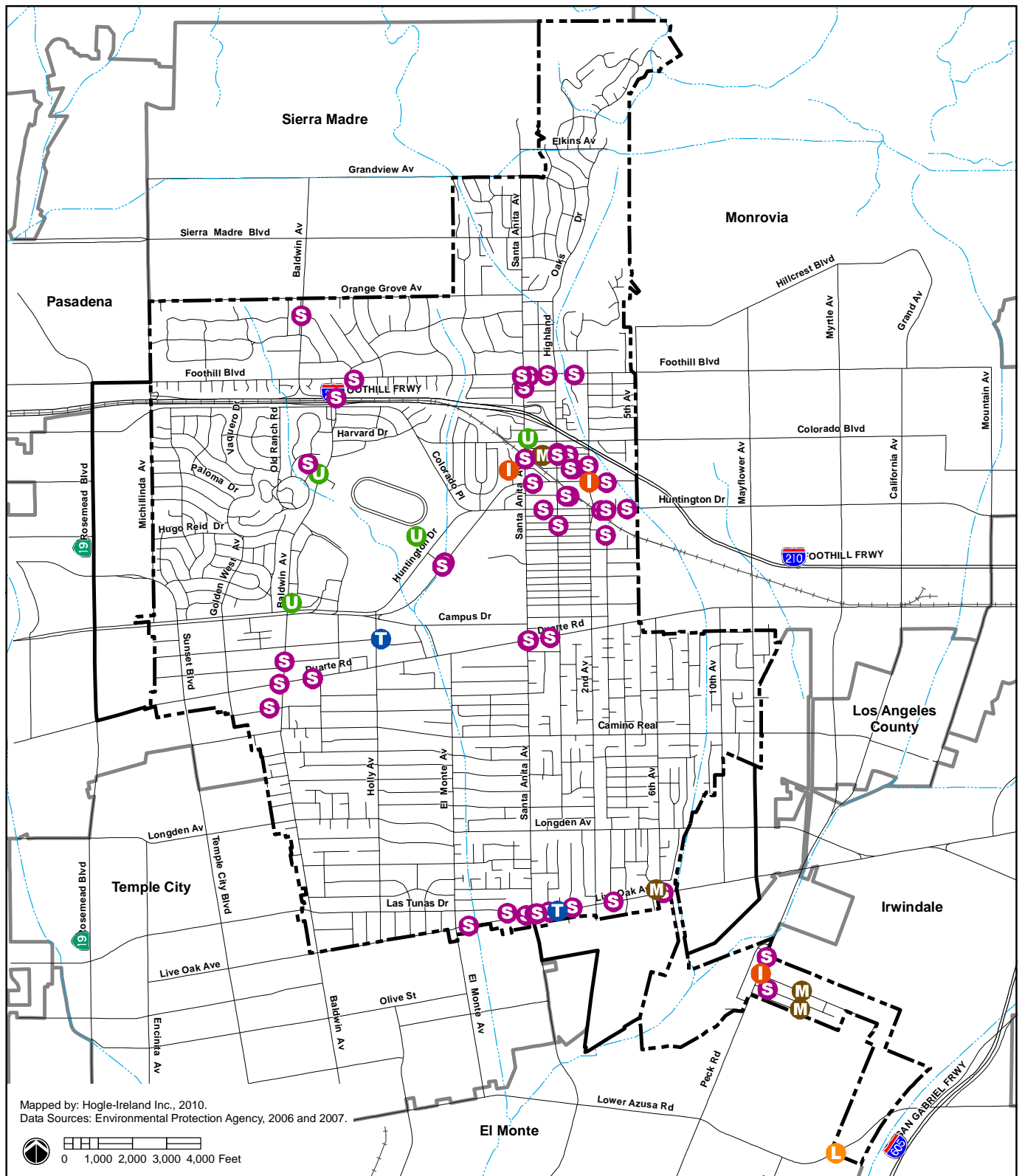
Legislation also required owners of known leaking underground storage tanks to prepare clean-up plans. Many of the leaking tanks were at gasoline service stations or businesses that maintained fuel tanks for business operations. Through vigorous programs to address these conditions, leaking underground 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 (HHW). 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.

City programs, operated jointly with the County of Los Angeles, allow residents to take advantage of curbside pick-up services which 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 multi-lingual resident education efforts, the City has been able to limit incidents of illegal household hazardous waste disposal.

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



Hazardous Materials Sites

- M** Multiple Hazards
- C** CERCLIS Sites
- U** Leaking Underground Storage Tank
- L** Large-Quantity Generators
- S** Small-Quantity Generators
- T** Transporter of Hazardous Materials
- I** Toxic Release Inventory

Base Map Features

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

FIGURE S-7: HAZARDOUS MATERIALS SITES

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 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 which 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 clean up 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-4:

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

- | | |
|----------------------|---|
| Policy S-4.1: | Adopt and strictly enforce the most current regulations governing hazardous waste management. |
| Policy S-4.2: | Minimize exposure of the environment, critical facilities, and residences to hazardous materials. |
| Policy S-4.3: | 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-4.4: | 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 public health and 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 the City. 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, and a battalion chief vehicle, reserve engine, and one State-owned fire engine.

- Fire Station No. 106, located at 630 South Baldwin Avenue, primarily serves the central and southwest portions of the City. The station, constructed in April of 1994, can accommodate up to 10 firefighters per 24-hour shift. Equipment includes one engine, one rescue ambulance, an Urban Search and Rescue (US&R) unit, a reserve engine, a reserve rescue ambulance, a mobile air unit, and equipment.
- Fire Station No. 107, at 79 West Orange Grove, provides fire protection services to the northern portion of the City. 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 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.

Because of its successful fire education and prevention efforts, the Fire Department finds that the majority of its responses consists of emergency medical and rescue services as opposed to fire suppression incidents. The second highest type of incident response is fire related. Fire and hazardous material incidents are fairly infrequent. The average response time to the majority of incidents is four to five minutes. Only rarely do Department personnel take six minutes or more to respond to calls for service. The City has not identified a need to build a fourth fire station, as current station locations provide excellent response capabilities.

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. According to the Verdugo Fire Communications 2008-2009 Annual Report (Verdugo Fire Communications dispatches all emergency calls for the fire department), response times for the Department in 2008 were as follows:

1. The Department responded to fire emergencies in five minutes or less 64.2 percent of the time, with an average response time of 4:32 minutes.
2. The Department responded to medical emergencies in five minutes or less 70.9 percent of the time, with an average response time of 4:08 minutes.

The 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 percent 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:

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 (ITS). One of the functions of an MDC is to provide a suggested response route to emergency incidents. Integrating ITS 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 brush area occupancies; 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 2007, members of the Arcadia Fire Department conducted 3,714 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 the potential for additional staffing in the Fire Prevention Bureau may be necessary.

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 the City of 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 2007, the Department organized 18 public education tours of fire stations and 51 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.

Joint Training Facility

The City has considered planning for and constructing a joint training facility to be utilized by Fire, Police, and Public Works Departments and all City employees to overcome the lack of training sites within the City of Arcadia. All training occurs at facilities outside of Arcadia. 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 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 Department's motto is "Making a Difference."

The Arcadia Police Department has over 75 sworn peace officers and support staff. The Department also employs a volunteer services coordinator, part-time crossing guards, reserve police officers, and civilian volunteers. In addition to general duty policing, the Department has a detective bureau, traffic and parking bureau, records department, dispatch department, community and youth services department, and several 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 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 Department to augment its resources without additional costs to the City. For example, the Amateur Radio and Auxiliary Communications Service (ACS) 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 (VIPS) provides additional volunteer support to the Arcadia Police Department operations, increases police visibility in the City, and enhances partnerships with the community. The Mounted Volunteer Patrol program assists the regular mounted

officers and other 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 the City, 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, Monterey Park, Glendale, and Burbank and Los Angeles County. The City also has a mutual aid contract with the United States 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 of Arcadia'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 9/11, 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 are 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 that allow 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. Through its ACTION program, Arcadia will continue to prepare community members with appropriate prevention measures to help detect suspicious activity and to appropriate response and readiness measures to any terrorist activities to ensure that life-threatening situations are avoided.

GOAL S-5:

To provide a continued high level of fire and police protection services, with an emphasis on prevention and education

- Policy S-5.1:** Involve Police and Fire Department personnel as an integral part of new development and redevelopment review process.
- Policy S-5.2:** 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-5.3:** Maintain fire and police stations, facilities, and services sufficient to meet high public safety standards, as established by the City Council.
- Policy S-5.4:** 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-5.5:** Maintain a high level of 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-5.6:** 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-5.7:** Coordinate information sharing with State and federal law enforcement agencies regarding potential terrorist threats.
- Policy S-5.8:** Promote public awareness and preparedness regarding any unique emergency response to address terrorist threats.
- Policy S-5.9:** 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, and domestic terrorism; and urban search and rescue.

- Policy S-5.10:** Strive to meet minimum training requirements for all safety personnel set forth by State and federal guidelines.
- Policy S-5.11:** 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-5.12:** Provide and maintain a joint training facility for Fire, Police, Public Works, and all City employees.

Emergency Preparedness

Arcadia sets emergency preparedness as one of its top priorities, recognizing that proper planning at all levels in the community—from response agencies to businesses and residents—will minimize the adverse effects of natural and human-caused disasters. Arcadia provides quality, effective police and fire services, personnel, and volunteers who are committed to safety and tirelessly work to plan and prepare for all types of emergencies and disasters. The City's Emergency Preparedness Program allows it to prepare for and respond effectively to emergencies.

Emergency Preparedness and Response Programs

The Fire Department's Emergency Services Division coordinates Arcadia's emergency operations during a human-caused or natural disaster. The division manages the Emergency Operations Center (EOC), a central command post to manage emergency efforts, in the event of a disaster. In addition, this division is responsible for developing and maintaining the citywide Emergency Operation Plan (EOP), which includes designing and conducting annual EOC drills, ranging from table-top exercises to full-scale functional drills, for City employees so that EOC workers from all City departments can practice how to respond to emergencies. Past exercises have included the large-scale evacuation of the mall, response to a major earthquake, large-scale contamination, and a pandemic flu. Other participants in these drills have included the Methodist Hospital, the Arcadia Chapter of the American Red Cross, and the Arcadia Unified School District.



The City's ACTION program (Arcadians Caring Together Improves Our Neighborhoods) is an example of the Fire Department working with other City departments and the community to provide valuable information regarding emergency preparedness, fire safety, first aid, earthquake preparedness, and crime prevention. The ACTION program covers general emergency preparedness with information on putting together a survival kit, first aid kit, storing appropriate food and water, and how to care for people with special needs in the time of an emergency. The ACTION program also addresses earthquake preparedness, terrorism preparedness, crime prevention, and fire safety and prevention, and provides an emergency resource guide.

Emergency Plans

Arcadia has adopted an Emergency Operations Plan that addresses Arcadia's response to extraordinary emergency situations associated with natural disasters, technological incidents, and threats to national security. It provides operational concepts related to the various emergency situations, identifies components of the City of Arcadia Emergency Management Organization, and describes the overall responsibilities of the organization for protecting life and property and assuring the overall well being of the population. The plan also identifies the sources of outside support which might be provided (through mutual aid and specific statutory authorities) by other jurisdictions, State and federal agencies, and the private sector.

In 2010, Arcadia adopted a Natural Hazard Mitigation Plan in response to requirements of the Federal Emergency Management Agency, or FEMA. Like this Safety Element, the plan promotes policy aimed at protecting the City from natural hazards. The policy design revolves around an effort to increase public awareness and document resources needed to reduce risks.

Siting Critical Facilities

As part of its emergency planning and response program, and to address hazard mitigation through prevention, the City has identified "critical facilities" that serve an essential or important function in disaster situations (government and public safety buildings, hospitals, and major transportation infrastructure) and/or contain concentrations of population (schools, large office and residential buildings). These are places from which emergency operations and response can be conducted. With regard to schools, they can be used for assembly and shelter; thus, it is critically important that schools be at locations removed from hazardous conditions, both to provide this support function and to minimize impact to school children and staff when a disaster occurs. Table S-3 and Figure S-8 identify the critical facilities in Arcadia. Table S-3 also indicates that a few facilities are located within known or suspected fault hazard and/or liquefaction zones.

TABLE S-3: CRITICAL FACILITIES IN ARCADIA

Map Key	Name	Address	Liquefaction Potential	Surface Rupture Potential
Fire Facilities				
1	Fire Station 105	710 S. Santa Anita Avenue		
2	Fire Station 106	630 S. Baldwin Avenue		
3	Fire Station 107	79 W. Orange Grove Avenue		X*
Government Buildings and Facilities				
1	Arcadia Public Library	20 W. Duarte Road		
2	City Hall	240 W. Huntington Drive		
3	Community Center	365 Campus Drive		
4	Police Department	250 W. Huntington Drive		
5	Public Works Service Department	11800 Goldring Road	X	
High Population Buildings				
1	Elks Lodge	27 W. Huntington Drive		
2	Embassy Suites	211 E. Huntington Drive		
3	Extended Stay	401 E. Santa Clara Street		
4	Hampton Inn	311 E. Huntington Drive		
5	Hilton Garden Inn	199 N. Second Avenue		
6	Motel 6	225 Colorado Place		
7	Santa Anita Race Track	285 W. Huntington Drive		X
8	Springfield Suites	99 N. Second Avenue		
9	Town Center Building	150 N. Santa Anita Avenue		
10	Wellington Court Apartments	601 Sunset Boulevard		X
11	Westfield Shopping Town	400 S. Baldwin Avenue		
Medical Facilities				
1	Arcadia Convalescent Hospital	1601 S. Baldwin Avenue		
2	Arcadia Methodist Hospital	300 W. Huntington Drive		
3	Arcadia Out-Patient Surgery Center	624 Duarte Road		
4	California Home for the Aged Deaf	529 Las Tunas Drive		
5	Country Villa Healthcare Center	400 W. Huntington Drive		
6	Medical Building	612 W. Duarte Road		
7	Medical Office	622 W. Duarte Road		
8	Medical Plaza	301 W. Huntington Drive		
Nursing Homes				
1	Arcadia Gardens Retirement Hotel	720 W. Camino Real Avenue		
2	Arcadia Retirement Center	753 W. Duarte Road		
3	Arcadia Royale Retirement Hotel	607 W. Duarte Road		
4	Naomi Gardens	655 W. Naomi Avenue		
Schools				
1	Arcadia Christian School	1900 S. Santa Anita Avenue	X	

TABLE S-3: CRITICAL FACILITIES IN ARCADIA

Map Key	Name	Address	Liquefaction Potential	Surface Rupture Potential
2	Arcadia Friends Church Pre-School	5705 Lenore Avenue		
3	Arcadia High School	180 Campus Drive		
4	Arcadia Parent Participation Nursery School	1511 S. Tenth Avenue		
5	Arcadia Presbyterian Child Development Center	121 Alice Street		
6	Baldwin Stocker Elementary School	422 E. Lomon Avenue		
7	B'Nai Simcha Jewish Pre-School	550 S. Second Avenue		
8	Camino Grove Elementary School	700 Camino Grove Avenue		
9	Emmanuel Montessori School	66 W. Duarte Road		
10	First Avenue Middle School	301 First Avenue		
11	Foothill Middle School	171 E. Sycamore Avenue	X	X
12	Highland Oaks Elementary School	10 Virginia Road		
13	Holly Avenue Elementary School	360 W. Duarte Road		
14	Holly Oaks Christian School	141 Las Tunas Drive		
15	Holy Angels School	360 Campus Drive		
16	Hugo Reid Elementary School	1000 Hugo Reid Drive	X	X
17	Hugo Reid Primary	1153 De Anza Place	X	
18	Huntington Continuation High School	150 S. Third Avenue		
19	Longley Way Elementary School	2601 S. Longley Way		
20	Montessori School	1406 S. Santa Anita Avenue		
21	Richard H Dana Middle School	1401 S. First Avenue		
22	Serendipity Day Care	120 S. Third Avenue		
23	Wonder World Pre-School	2607 S. Santa Anita Avenue		

Freeway Over/Underpasses

	I-605 Freeway @ Lower Azusa overpass	East of City		
	I-210 Freeway @ Huntington Dr underpass	Bridge		
	I-210 Freeway @ Santa Anita underpass	Bridge		X
	I-210 Freeway @ Second Street underpass	Bridge		
	I-210 Freeway @ Baldwin Av underpass	Bridge		
	I-210 Freeway @ Michillinda underpass	Bridge		
	I-210 Freeway @ Rosemead Bl underpass	City sphere on the west		X*

Railroads, Reservoirs, and Dams

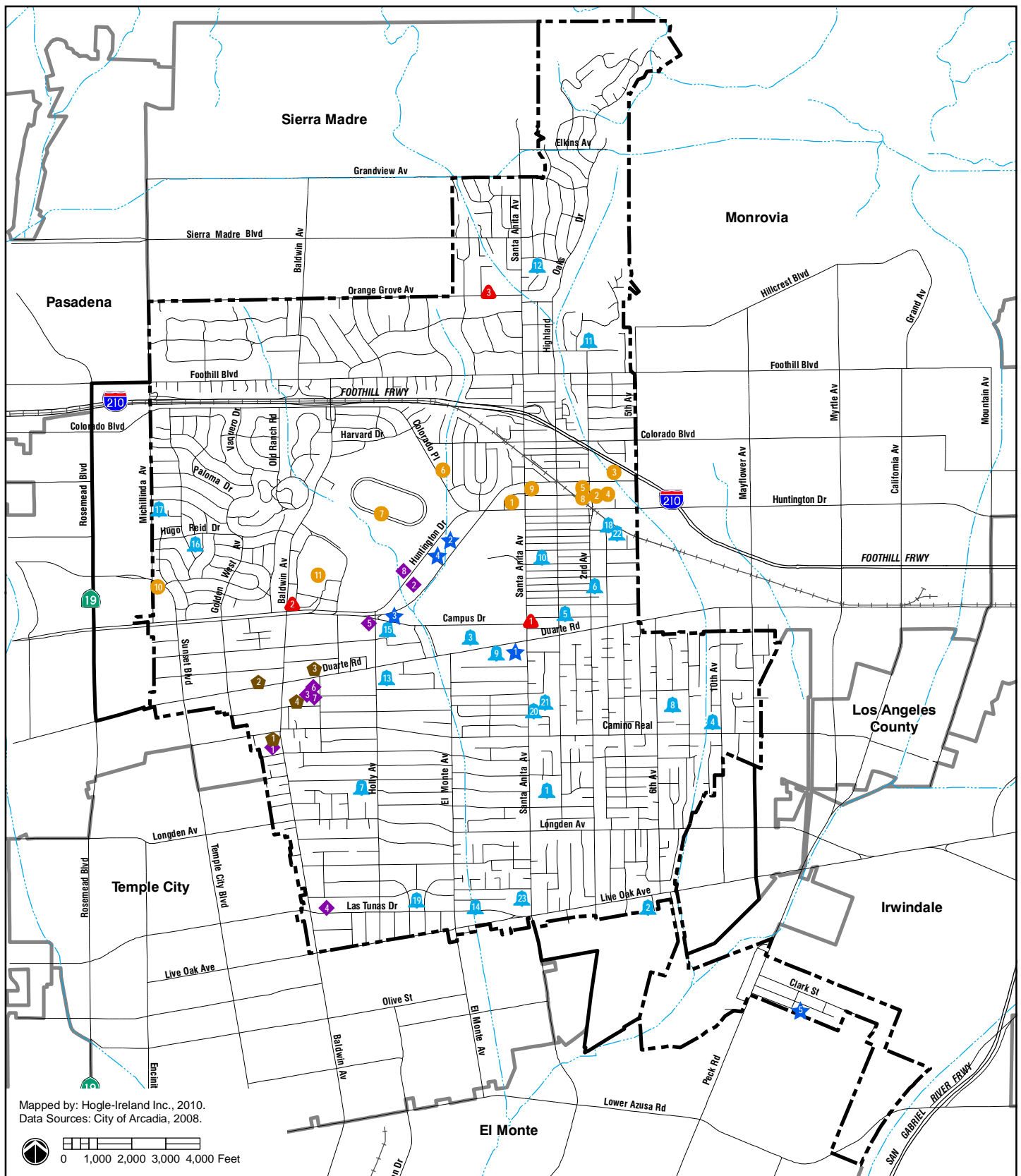
	Railroad Crossing W. Colorado	Bridge west of Santa Anita Avenue		
	Railroad Crossing Second Street	Bridge at Huntington Drive		
	Railroad Crossing Santa Anita Avenue	At Santa Clara Street		
	Metrolink Station (Future)	Near Wheeler Avenue		
	Metrolink Crossing SR-210 Freeway	At I-210 Freeway		
	Santa Anita Reservoirs	West of City on the north		
	Baldwin Reservoir	Baldwin/Orange Grove		

TABLE S-3: CRITICAL FACILITIES IN ARCADIA

Map Key	Name	Address	Liquefaction Potential	Surface Rupture Potential
	St. Joseph Reservoir	Second and Chestnut		
	Santa Anita Dam	North of City		
	Morris S. Jones Dam	Northwest of City		
	Sierra Madre Dam	Northwest of City		
	Sawpit Dam	Northeast of City		
	Santa Fe Dam	East of City		

X* As determined by various geological studies

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



Critical Facilities

- ▲ Fire
- ★ Government Buildings and Facilities
- ◆ Medical Facility
- ⬢ Nursing Home
- High Population Building
- 🔔 Schools

Note:
For Critical Facility name and address refer to Table S-3.

FIGURE S-8: CRITICAL FACILITIES

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-6:

Comprehensive and effective emergency and disaster response preparedness

- | | |
|----------------------|--|
| Policy S-6.1: | Coordinate with Los Angeles County, adjacent municipalities, the Federal Emergency Management Agency, and the California Emergency Management Agency in reducing the risk of loss of life, injury, and property damage in the event of an emergency. |
| Policy S-6.2: | Coordinate with other government agencies and organizations to leverage resources related to seismic technology and information, and emergency preparedness. |
| Policy S-6.3: | Maintain an up-to-date Emergency Operations Plan and Natural Hazard Mitigation Plan on a five-year basis to secure adequate federal resources in the event of a disaster. |
| Policy S-6.4: | Conduct ongoing public outreach and promote community awareness regarding evacuation routes and procedures to be followed in the event of an emergency. |
| Policy S-6.5: | 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-6.6: | 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. |