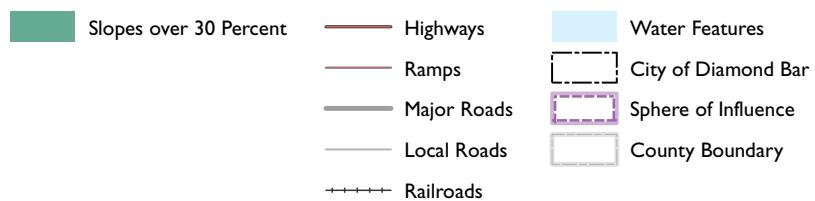
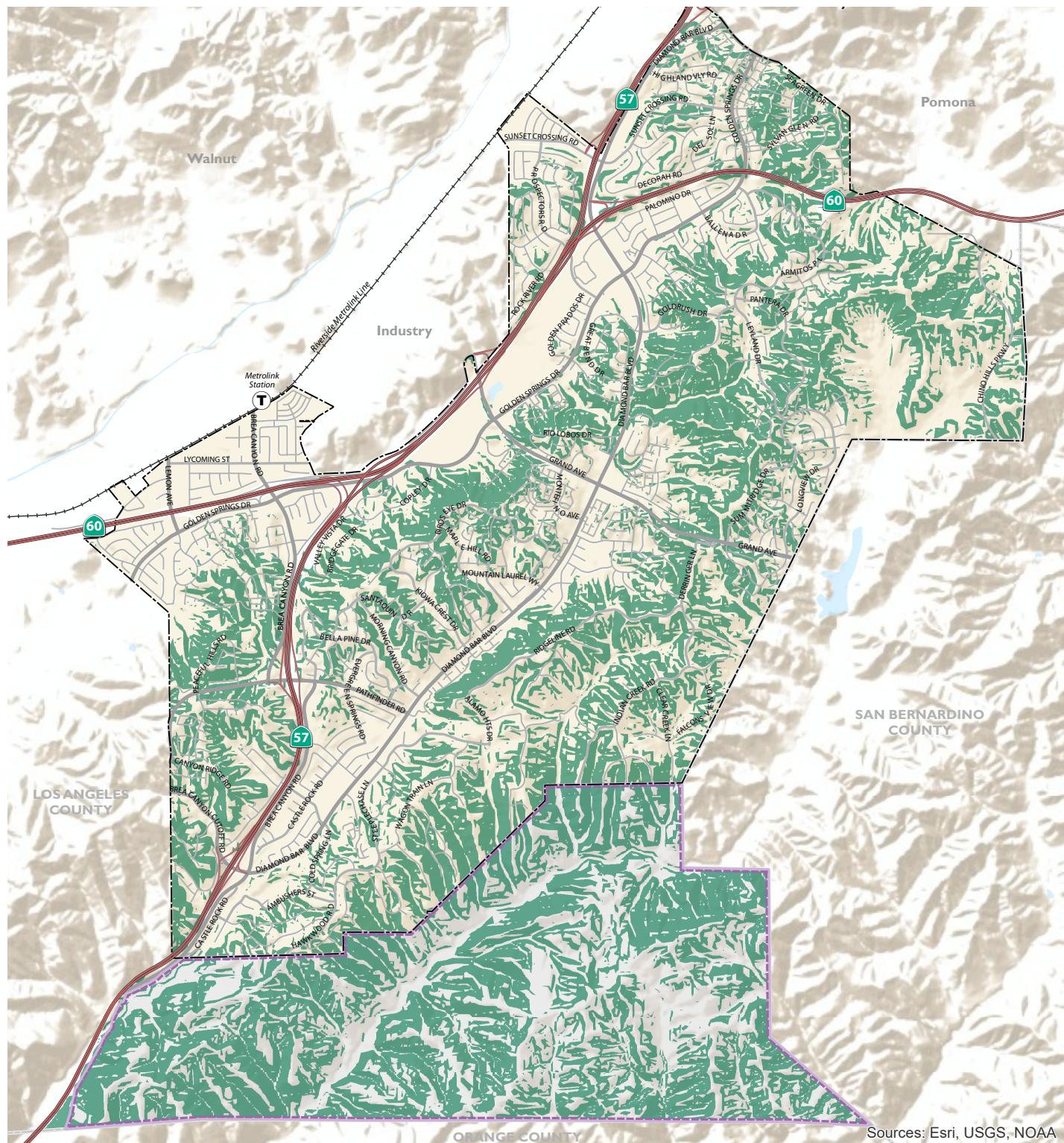


Figure 7-1 Steep Slopes



Source: Los Angeles County GIS Data Portal, 2016; Natural Resources Conservation Service, USDA, 2016;
City of Diamond Bar, 2019; Dyett & Bhatia, 2019

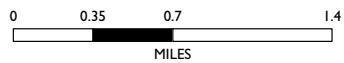
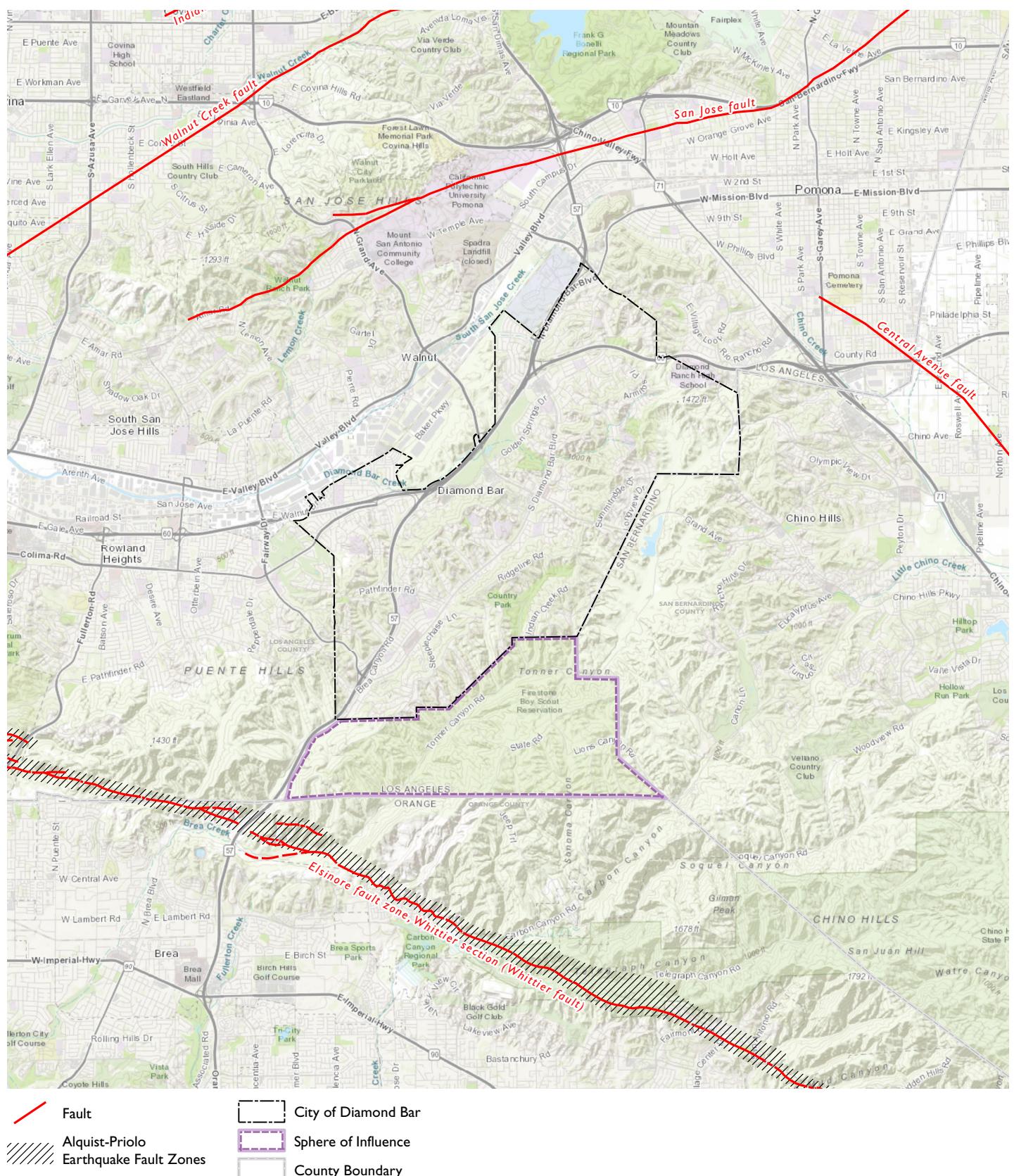


Figure 7-2 Regional Faults

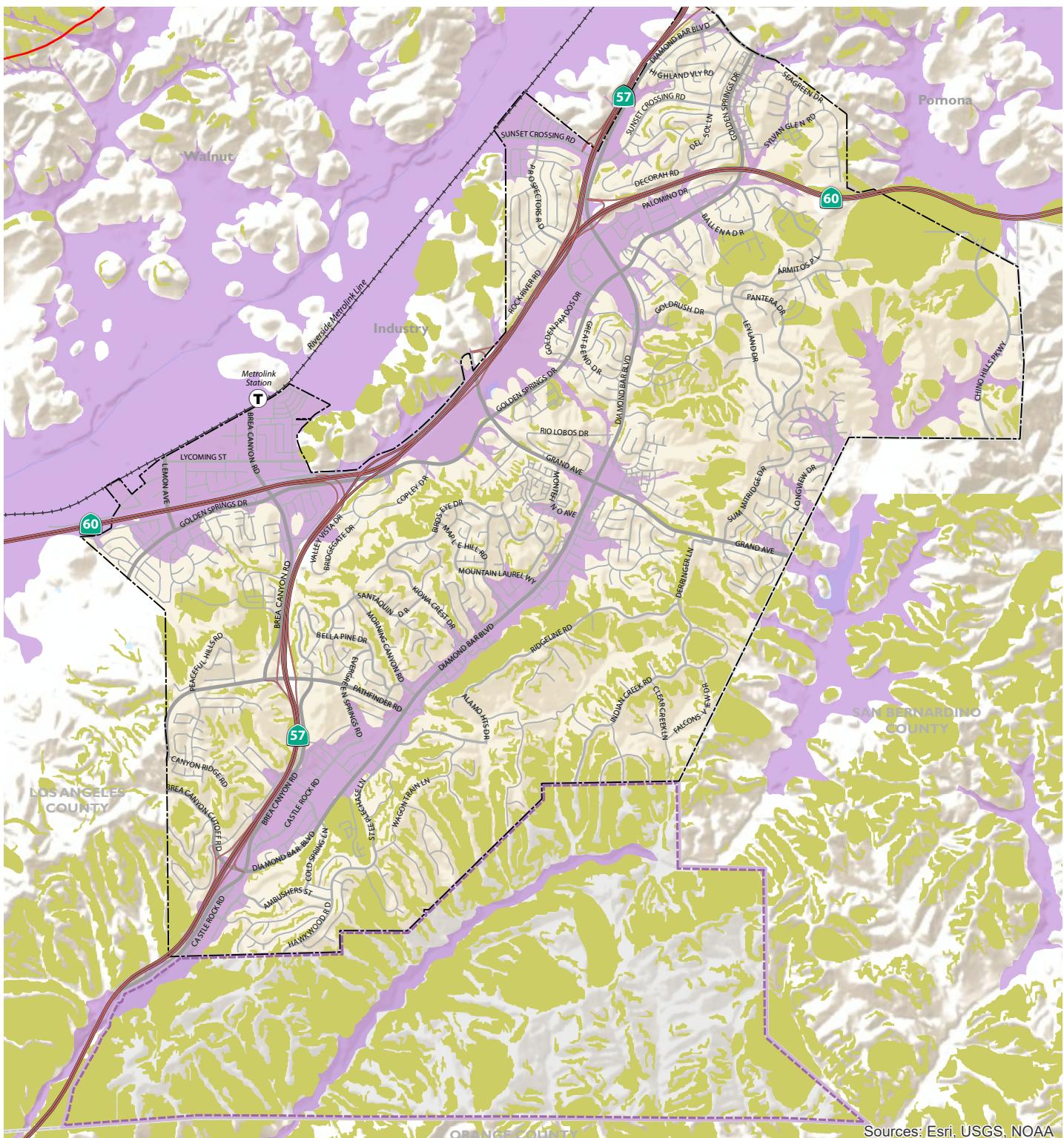


Source: Esri, 2019; California Geological Survey (CGS), 2018;
City of Diamond Bar, 2019; Dyett & Bhatia, 2019

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MILES



Figure 7-3 Liquefaction and Landslide Hazards



Seismic Hazard Zones

- Fault Line
- Liquefaction Zones
- Earthquake Induced Landslide Zones

Water Features

- Highways
- Ramps
- Major Roads
- Local Roads
- Railroads

City of Diamond Bar

- Sphere of Influence
- County Boundary

Liquefaction Zones: Areas where historical occurrence of liquefaction, or local geological, geotechnical and ground water conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

Landslide Zones: Areas where previous occurrence of landslide movement, or local topographic, geological, geotechnical and subsurface water conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

Source: Seismic Hazard Zones, Earthquake Zones of Required Investigation, 199, California Geological Survey (CGS), California Department of Conservation (DOC); Los Angeles County GIS Data Portal, 2016; City of Diamond Bar, 2019; Dyett & Bhatia, 2019

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SEISMIC AND GEOLOGIC HAZARDS

See Chapter 2: Land Use and Economic Development Element and Chapter 4: Resource Conservation Element for additional policies regarding hillside protection and management.

GOALS

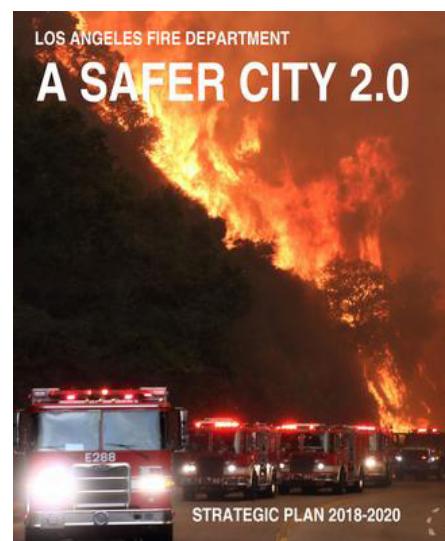
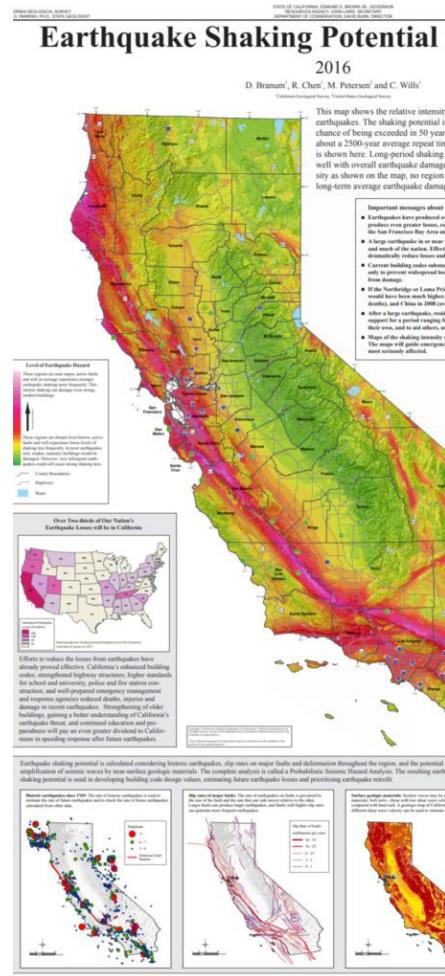
- PS-G-1** Partner with the Los Angeles County Fire and Sheriff's Departments in community education efforts aimed at preventing potential loss of life, physical injury, property damage, public health hazards, and nuisances from seismic ground shaking and other geologic hazards such as landslides and mudslides.

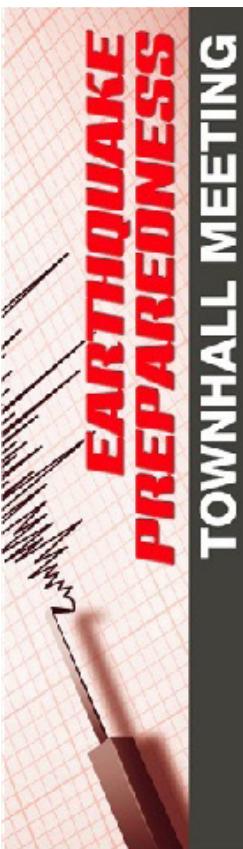
POLICIES

- PS-P-1** Require new emergency facilities subject to City land use regulations and permitting requirements, including, but not limited to, paramedic services, hospitals, ambulance services, and emergency operations centers be designed to withstand and remain in operation following the maximum credible earthquake event.

- PS-P-2** Require areas identified as having significant liquefaction potential (including secondary seismic hazards such as differential compaction, lateral spreading, settlement, rock fall, and landslide) to undergo site-specific geotechnical investigation prior to development and to mitigate the potential hazard to a level of insignificance or, if mitigation is not possible, to preserve these areas as open space or agriculture.

Figure 7-3 shows areas where historical occurrence of liquefaction, or local geological, geotechnical, and groundwater conditions indicate a potential for permanent ground displacements.





PS-P-3 Periodically update the grading standards to supplement the State and local building and construction safety codes with detailed information regarding rules, interpretations, standard specifications, procedures requirements, forms, and other information applicable to control excavation, grading, and earthwork construction, and provide guidelines for preparation of geotechnical reports in the city.

PS-P-4 Carry out a review of City-owned critical facilities that may be vulnerable to major earthquakes and landslides and develop programs to upgrade them.

PS-P-5 Develop a City-based public awareness/earthquake preparedness program to educate the public about seismic hazards and what to do in the event of an earthquake.

PS-P-6 Prevent and control soil erosion and corresponding landslide risks on public property and in conjunction with new private development through hillside protection and management.

7.3 FLOOD HAZARDS AND PROTECTION

DRAINAGE

The Planning Area is almost entirely encompassed by the San Gabriel River Basin, which spans 713 square miles across Los Angeles and Orange counties. As shown in Figure 7-4, the Planning Area drains into four subbasins of the San Gabriel River Basin. The northern half of the

city drains primarily into San Jose Creek, partially via Diamond Bar Creek. Most of the southern half of the city, as well as the SOI, drains into Brea Canyon Creek. Small areas in the northeast of the city are within the Santa Ana River Basin, draining locally into Chino Creek.

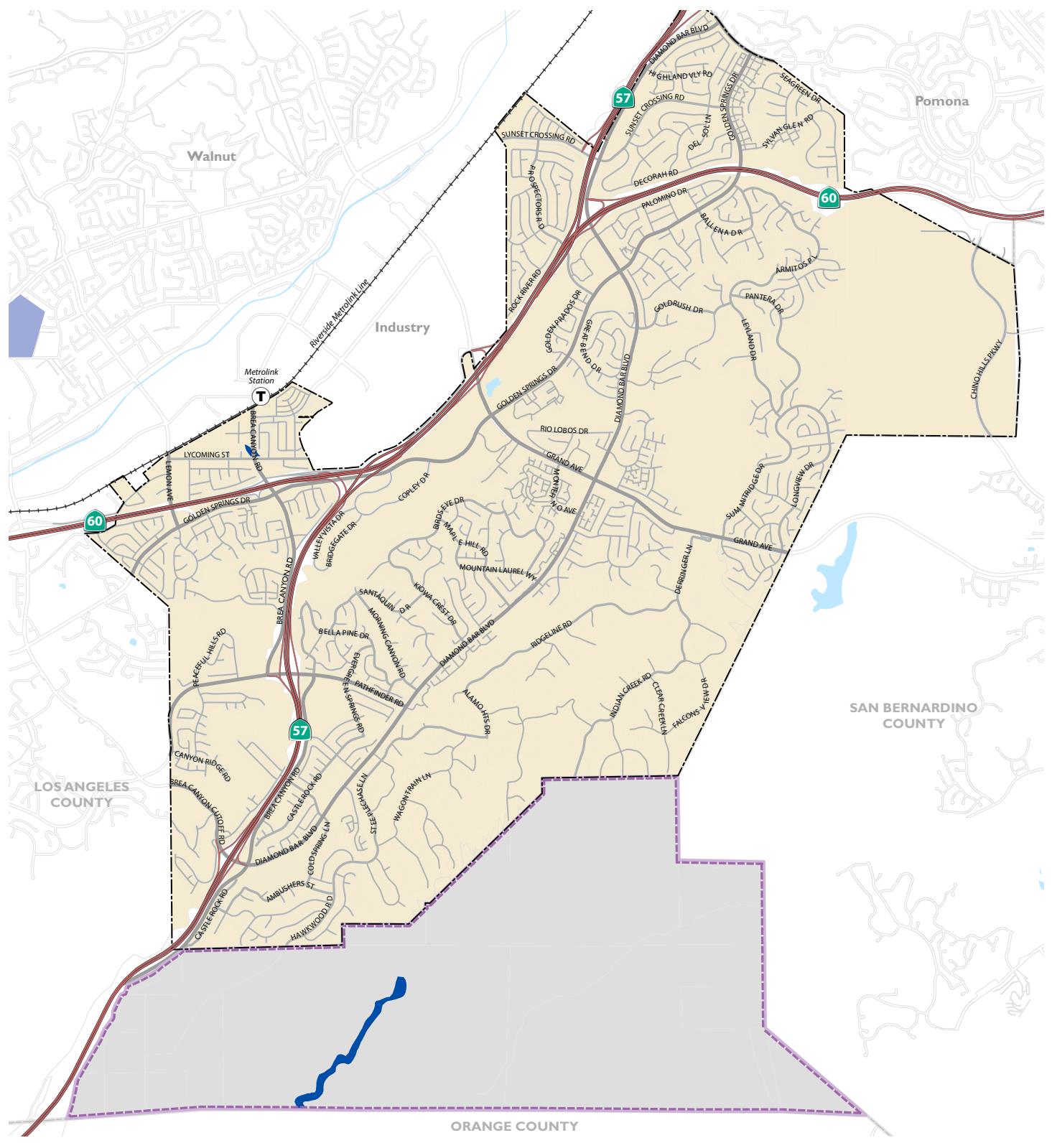
FLOODING

The Federal Emergency Management Agency (FEMA) flood map identifies flooding hazards of various intensities. As shown in Figure 7-4, there are two portions of the Planning Area that are within the 100-year flood zones, which are areas having a 1.0 percent chance of flooding in a given year. The only 100-year flood zone within the city limits lies near the intersection of Brea Canyon Road and Lycoming Street, along the Reed Canyon Channel. Another 100-year flood

zone runs through Tonner Canyon Creek in the SOI. Measures that can minimize flooding hazards include the preservation of open space; protecting natural floodplain functions; regulating development in the floodplains; addressing flood-prone properties through acquisition, relocation, or protection; and improving maintenance of the drainage system on a citywide basis as well as related to specific development projects.



Figure 7-4 Flood Zones



- Highways
- Ramps
- Major Roads
- Local Roads
- - - Railroads
- 100 Year Floodplain
(1% Annual Chance Flood Hazard)
- 500 Year Floodplain
(0.2% Annual Chance Flood Hazard)

- Water Features
- City of Diamond Bar
- Sphere of Influence
- County Boundary

Source: Los Angeles County GIS Data

FLOOD HAZARDS AND PROTECTION

See Chapter 6: Public Facilities and Services for additional policies regarding water and wastewater facilities and relevant plans.

GOALS

- PS-G-2** Implement measures aimed at preventing the potential for loss of life, physical injury, property damage, public health hazards, and nuisances from the effects of a 100-year storm and associated flooding.

POLICIES

- PS-P-7** Work with the Federal Emergency Management Agency (FEMA) as needed to ensure that the City's floodplain information is up to date with the latest available hydrologic and hydraulic engineering data.

- PS-P-8** Continue to implement flood control programs, such as the City's Grading and Floodplain Ordinances, that reduce flood hazards to comply with State flood risk management requirements.

- PS-P-9** Consider the impacts to health and safety from potential flooding on future development in flood-prone areas, including those identified as being within the 100- or 500-year floodplains. Require installation of protective structures or other design measures to protect proposed building and development sites from the effects of flooding in these areas.

Figure 7-4 shows flood zones in and around the Planning Area based on FEMA's 2016 flood hazard data.

- PS-P-10** Ensure that a drainage study has been completed by a qualified engineer as a prerequisite to new development or the intensification of existing development, certifying that the proposed development will be adequately





protected, and that implementation of the development proposal will not create new downstream flood hazards.

- PS-P-11** Use the drainage master plan developed in coordination with the Los Angeles County Public Works Department to assess existing and future flood control needs and related improvements within Diamond Bar.
- PS-P-12** As part of the Capital Improvement Program, consider and incorporate flood control improvements identified in the drainage master plan that specifies funding and timing of prioritized improvements. Coordinate the City's Capital Improvement Program with planned County improvements.
- PS-P-13** As resources become available, reduce the flooding impact of a storm event by enhancing the city's green infrastructure system to complement the gray infrastructure system where feasible.

7.4 FIRE HAZARDS

URBAN FIRES

Urban fires are fires that begin in urban centers. They are typically localized, but have the potential to spread to adjoining buildings, especially in areas where homes and/or business facilities are clustered close together. Other factors affecting urban fire risk and relative likelihood of loss of life or property include building age, height and use, storage of flammable material, building

construction materials, availability of sprinkler systems, and proximity to a fire station and hydrants. Urban fire risk in the city is mitigated in a number of ways, including through the enforcement of updated building and fire codes and the involvement of the Los Angeles County Fire Department in the development review process. Fire services are discussed further in Section 7.6: Public Safety Services.

WILDLAND FIRES

Wildland fires occur in rural or heavily vegetated areas where abundant surface fuels are available to sustain a fire. Wildland fires that occur in the wildland-urban interface (WUI)—areas where undeveloped wildlands intermix with or transition into developed land—have the potential to greatly impact nearby structures and cities. Due to its setting amidst vegetated open space areas to the south and east, and the presence of open space areas interspersed among urban development, Diamond Bar is at risk from wildland fires.

Fire Threat and Fire Hazard Severity Zones

In 2005, the California Department of Forestry and Fire Protection (CAL FIRE) mapped fire threat potential throughout California based on the availability of fuel and the likelihood of an area burning (based on topography, fire history, and climate). Fire threat mapped in and

around Diamond Bar is shown in Figure 7-5. Fire threat in the city was generally categorized as Moderate, with areas of higher threat correlated with open space areas and slopes. Areas with the greatest fire threat include the southern portion of the city surrounding the Country Estates subdivision and the open space areas near Sycamore Canyon and the Summitridge Trails. The SOI is categorized as Very High and Extreme threat.

CAL FIRE also maintains mapping of Fire Hazard Severity Zones (FHSZs) to aid in State and local planning for wildland fire protection. In State Responsibility Areas (SRAs), where the State of California is financially responsible for the prevention and suppression of wildfires, CAL FIRE identifies Moderate, High, and Very High FHSZs. In Local Responsibility Areas (LRAs), where fire protection is provided by city fire departments, fire protection districts, counties, and by CAL FIRE under contract

to local government, CAL FIRE identifies only Very High FHSZs. Under State law (Government Code Sections 65302 and 65302.5), the City of Diamond Bar General Plan must address the risk of fire in Very High FHSZs in the LRA within the City's jurisdiction, and the Los Angeles County General Plan must address the risk of fire in the surrounding SRA, including Diamond Bar's SOI.

As shown in Figure 7-6, Very High FHSZs are mapped in a number of locations throughout the city, including most of the designated open space areas and much of the Country Estates subdivision. In accordance with State law, policies in this General Plan address wildland fire hazards in order to reduce risks both in these zones and in the city as a whole.

Wildfire History

Figure 7-7 shows perimeters for historic wildfires in and around Diamond Bar dating to the 1920s as mapped by CAL FIRE. As shown, areas with higher frequency have included the SOI and surrounding open spaces outside of the city. While several overlapping perimeters are shown in the northern portion of Diamond Bar, all of these date to the 1970s or earlier. Since the 1980s, wildfires have occurred in locations near Peaceful Hills Road, Eldertree Drive, Diamond Knoll Lane, and Wagon Train Lane in the southern portion of the city; in and around the SOI; and near to but outside of the northern city

limits. This data is maintained and made publicly available through CAL FIRE's Fire and Resource Assessment Program for future reference.

Wildfire Management Strategies

In recent years, the State of California has experienced increasingly severe wildfire seasons due to factors such as extreme weather events such as prolonged drought conditions and high winds, and the accumulation of fuel. In 2017 and 2018, devastating fires such as the Camp and Tubbs fires in northern California and the Thomas and Woolsey fires in southern California demonstrated the profound impact wildland fires can have on populated areas. As the State prepares for more such incidents as the WUI continues to expand and changes in climate patterns become more apparent, wildfire risk management at the local level will become increasingly important. Strategies tend to cluster around two main approaches: maintaining defensible space around structures, and ensuring that structures are resistant to fire.

Defensible space refers to a space created around development that is designed and maintained to reduce the ability of a fire to spread. Fuel modification is a key element of creating defensible space and is intended to disrupt what would otherwise be a continuous path that could lead wildfires to buildings, thus increasing the chance that the buildings will

survive. Fuel modification strategies include plant selection based on moisture content, resin, and the production of detritus, and the proper arrangement of plants in relation to structures. The Los Angeles County Fire Department (LACFD) Fuel Modification Unit is responsible for the approval of fuel modification plans for new structures located in the County's FHSZs, including in the Planning Area. State law requires there to be at least 100 feet of defensible space around buildings.

Designing wildfire-resistant structures means constructing buildings so that they have less chance of catching fire from burning embers. Strategies include limiting the use of flammable materials on building exteriors, protecting vents and chimneys from embers, protecting windows from breakage under extreme heat, and screening gutters to reduce accumulation of flammable debris. The California Building Code includes standards that address fire risks to structures in the WUI.

PEAKLOAD WATER SUPPLY REQUIREMENT

Diamond Bar engineering standards require a minimum flow of water for fire protection in accordance

with LACFD, California Fire Code, and Insurance Services Office (ISO) standards.

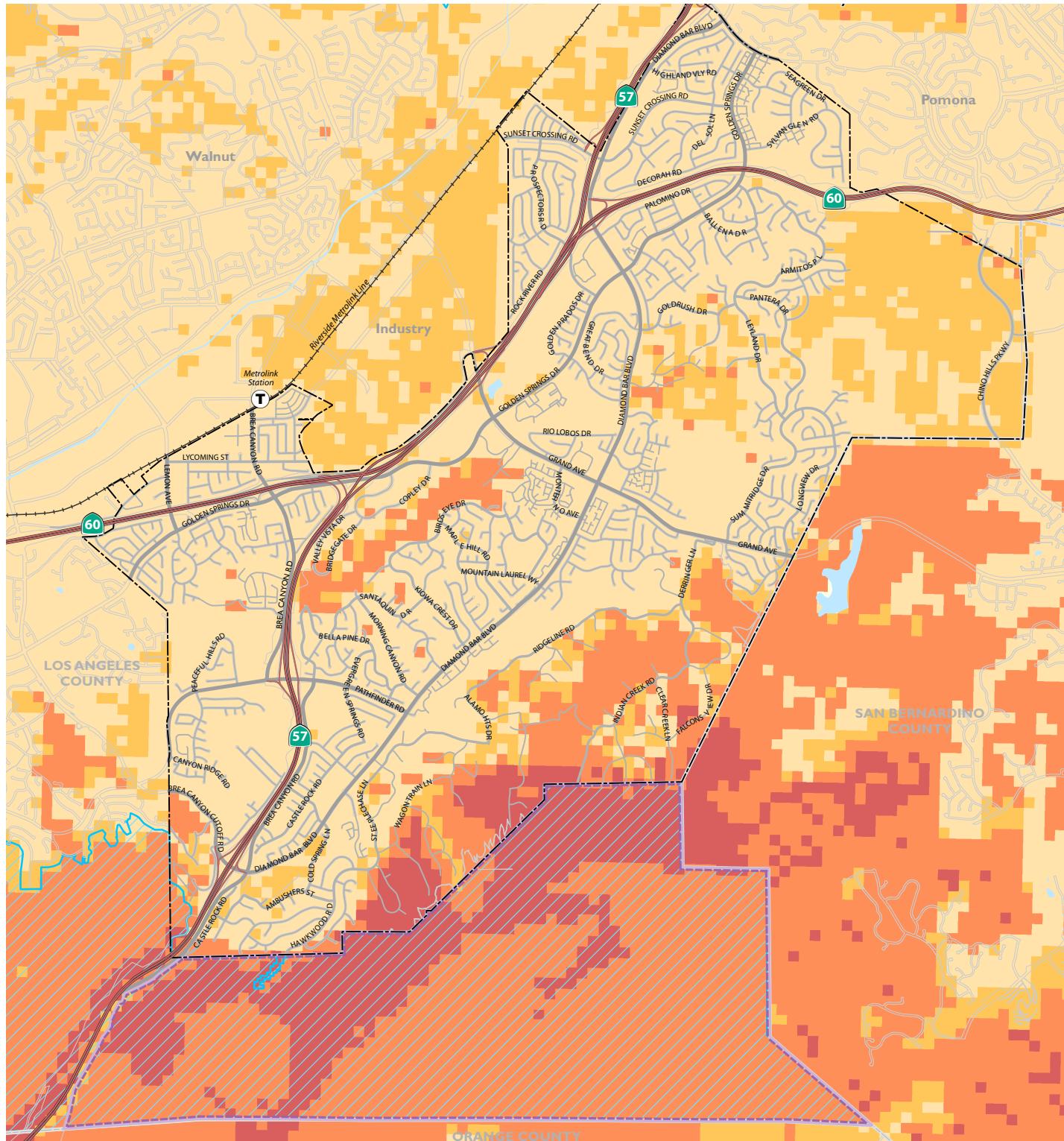
FIRE ACCESS STANDARDS

Fire access is regulated by the adopted and amended California Fire Code and LACFD standards. The current Fire Code establishes a minimum distance for all portions

of a building from serviceable fire access roads. The LACFD establishes a minimum centerline turning radius to accommodate fire trucks and building standards.



Figure 7-5 Fire Threat



Fire Threat Level (Cal Fire)

Extreme Threat	Highways
Very High Threat	Ramps
High Threat	Major Roads
Moderate Threat	Local Roads
Little or No Threat	Railroads

State Responsibility Area (SRA)

Water Features

City of Diamond Bar

Sphere of Influence

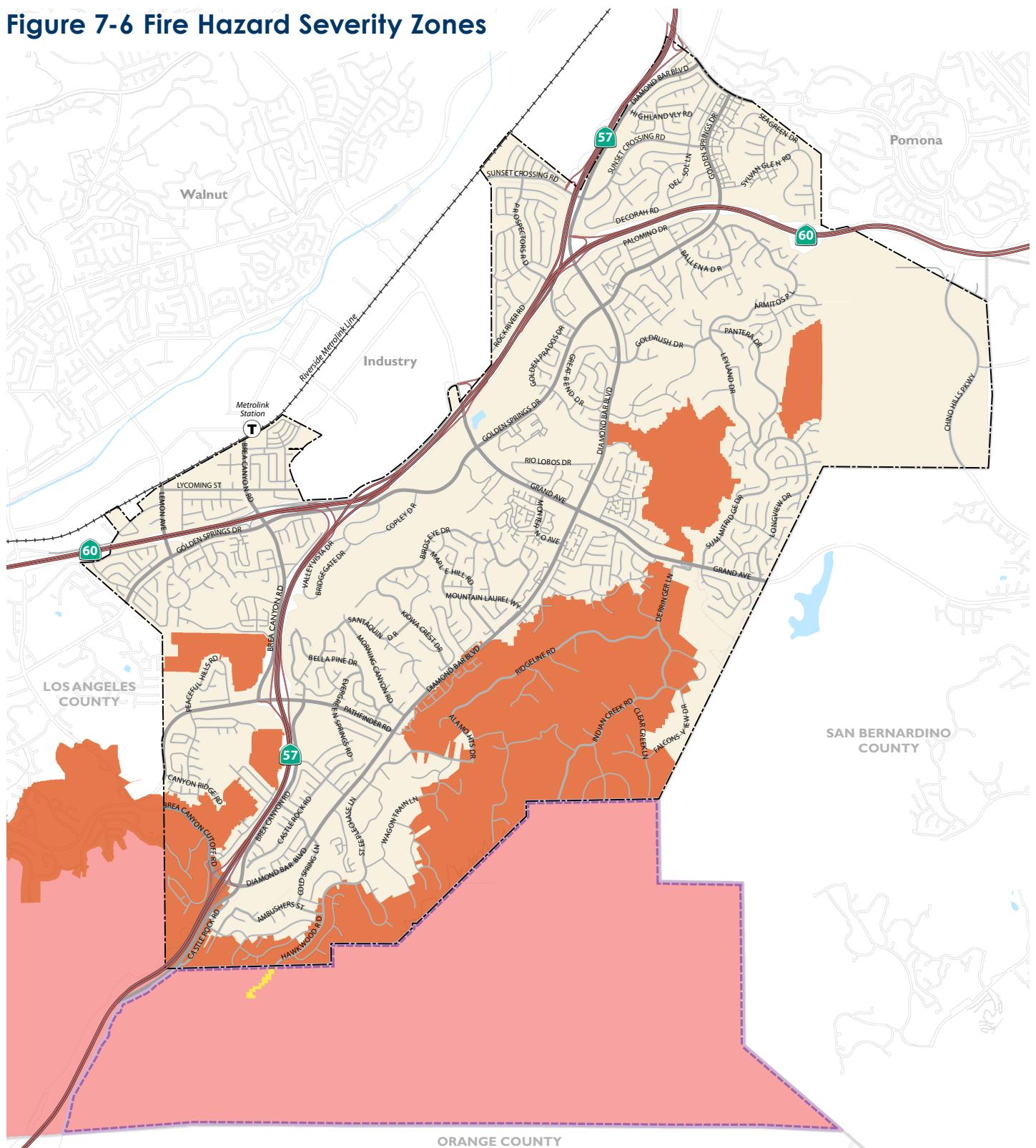
County Boundary

Source: Fire Threat, Fire and Resources Assessment Program (FRAP), Cal Fire 2005;
Los Angeles County GIS Data Portal, 2016; Dyett & Bhatia, 2019

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MILES



Figure 7-6 Fire Hazard Severity Zones



Fire Hazard Severity Zones

Local Responsibility Area (LRA)

Very High

State Responsibility Area (SRA)

Very High

High

Highways

Ramps

Major Roads

Local Roads

Railroads

Water Features

City of Diamond Bar

Sphere of Influence

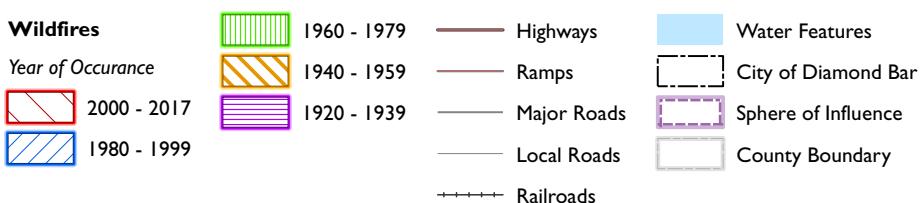
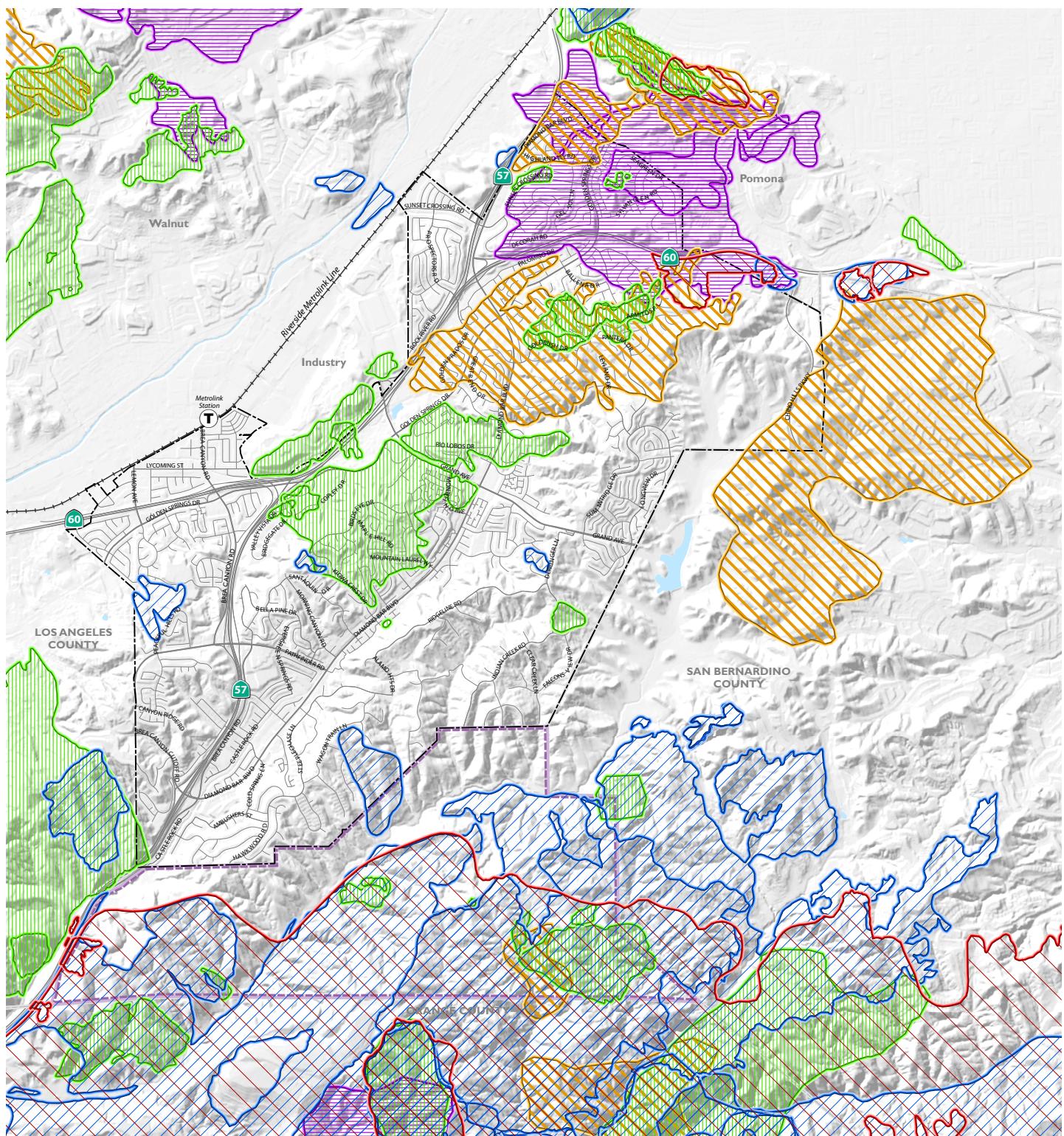
County Boundary

Source: California Department of Forestry and Fire Protection (CAL FIRE), 2007 & 2009; Los Angeles County GIS Data Portal, 2016; Dyett & Bhatia, 2019

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Figure 7-7 Wildfire Perimeters 1928 – 2019



Source: California Department of Forestry and Fire Protection (CAL FIRE), 2019; City of Diamond Bar, 2019; Dyett & Bhatia, 2019

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FIRE HAZARDS

GOALS

- PS-G-3** Partner with the Los Angeles County Fire Department and affiliated agencies to implement hazard mitigation plans and community education efforts aimed at preventing the potential for loss of life, physical injury, property damage, public health hazards, and nuisances from wildland and urban fires.

POLICIES

General

- PS-P-14** Educate the public about fire hazards and fire prevention. Work with the County of Los Angeles Fire Department and CAL FIRE to disseminate information on fire weather watches and fire risks and encourage all Diamond Bar residents to engage in risk reduction and fire preparedness activities.

The Los Angeles County Fire Department maintains information on family fire preparedness plans and risk reduction measures such as vegetation management.

- PS-P-15** Ensure adherence to applicable Fire and Building Codes, including standards for minimum road widths, access and clearance for emergency vehicles, and the identification of all roads, streets, and major public buildings in a manner that is clearly visible to fire protection and other emergency vehicles.





PS-P-16 For privately-owned property within areas designated for development that are subject to high wildfire risk, condition approval of development upon the implementation of measures to reduce risks associated with that development, including, but not limited to, fuel modification plans and Fire Code requirements in effect at the time of project approval.

PS-P-17 Protect and promote native oak woodlands that border residential areas as fire buffers.

PS-P-18 Work cooperatively with the County of Los Angeles Fire Department, CAL FIRE, and fire protection agencies of neighboring jurisdictions to address regional wildfire threats.

Fire Hazard Severity Zones and State Responsibility Areas

PS-P-19 Maintain and update the City's High Fire Hazard Severity Zones map consistent with changes in designation by CAL FIRE to ensure that the County of Los Angeles Fire Department is protecting the community from wildland-urban fires as future development takes place.

PS-P-20 Prior to permit approval, ensure that all new development located in a Very High Fire Hazard Severity Zone or a State Responsibility Area (SRA) is served by adequate infrastructure, including safe access for emergency response vehicles, visible street signs, and water supplies for fire suppression.

PS-P-21 Collaborate with the County of Los Angeles Fire Department to ensure that properties in and adjacent to High or Very High

Fire Hazard Severity Zones as indicated in Figure 7-6 are adequately protected from wildland fire hazards in a manner that minimizes the destruction of natural vegetation and ecosystems through inspection and enforcement. Update Figure 7-6 as new information becomes available from CAL FIRE.

- PS-P-22** Support the County of Los Angeles Fire Department's Provision of weed abatement and brush thinning and removal services in High and Very High Fire Hazard Severity Areas in order to curb potential fire hazards.
- PS-P-23** Where development is proposed within High or Very High Fire Hazard Severity Zones, ensure that the County of Los Angeles Fire Department has the opportunity to review the proposal in terms of its vulnerability to fire hazards and its potential as a source of fire, including fuel modification plan review for new development or additions that are equal or greater than 50 percent of the existing square footage.



7.5 HAZARDOUS MATERIALS AND OPERATIONS

Hazardous materials, as defined by the California Code of Regulations (CCR), are substances with certain physical properties that could pose a substantial present or future hazard to human health or the environment when improperly handled, disposed, or otherwise managed. This refers to a variety of injurious substances, including pesticides, herbicides, toxic metals and chemicals, liquefied natural gas, explosives, volatile chemicals, and radioactive materials.

Hazardous materials are commonly found throughout the Planning Area in households and businesses. Typical residential and commercial substances include motor oil, paint, cleaners and solvents, gasoline, refrigerants, and lawn and gardening chemicals.

Sites where hazardous chemical compounds have been released into the environment can pose threats to health and ecological systems. Historic or current activities, most often associated with industrial or commercial uses (including gas stations, car washes, etc.),

may result in the release, leak, or disposal of toxic substances on or below the ground surface, where they can then contaminate soil and ground water. Disturbance of the ground through grading or excavation can result in exposure of these chemicals to the public. Improper handling of contaminated sites may result in further exposure via airborne dust, surface water runoff, or vapors.

The California Department of Toxic Substances Control (DTSC) and State Water Resources Control Board (SWRCB) track and identify sites with known or potential contamination and sites that may impact groundwater in accordance with Section 65962.5 of the California Public Resources Code (PRC). The list produced in accordance with this code is also known as the Cortese List.

- **EnviroStor.** The DTSC EnviroStor hazardous waste facility and cleanup sites database identifies sites that have known contamination or potentially

