



Chapter 8: Public Health and Safety

R A N C H O C U C A M O N G A G E N E R A L P L A N

Introduction

Rancho Cucamonga has long emphasized a proactive approach to public health and safety planning. This effort involves identifying and mitigating hazards present in the environment that may adversely affect property and threaten lives, health, and safety. While recognizing that there is a limit regarding the level of protection that can be afforded, through a proactive approach to planning and the efforts of the dedicated police and fire personnel plus the contributions of community volunteers, the City endeavors to avoid or mitigate these hazards. In addition to planning for and reacting to potential hazards, another important component of maintaining public health and safety is ensuring that we lead sustainable lives, decreasing the impact on global warming and climate change to maintain a healthy Earth.

Since the City's founding, providing adequate public safety has been a core value within the community. In order to provide excellent fire protection and emergency medical services, the City created a subsidiary agency, the Rancho Cucamonga Fire Protection District (RCFPD). The RCFPD has become recognized as a statewide leader in innovation. The police services that are provided by the San Bernardino County Sheriff's Department have been custom tailored to meet the needs of this unique community. The low crime rates and safe streets have been cited as one of the primary reasons why people choose to live and raise their families in Rancho Cucamonga.

Chapter 8: Public Health and Safety

This Chapter consists of the following sections:

- Fire and Emergency Services
- Crime Prevention
- Seismic and Geologic Hazards
- Flood Hazards and Inundation
- Wind Hazards
- Aviation Hazards
- Air Quality, Atmosphere, and Climate
- Noise

Rancho Cucamonga is located at the base of the San Gabriel Mountains. This proximity creates the potential for natural hazards. Faults located at the base of the foothills create the potential for seismic and geologic hazards. Open spaces along the foothills can lead to wildland fires, endangering residential properties that abut the wildland/urban interface. Canyon creeks and streams can lead to flooding hazards during rain storms, while mountain canyons and passes can stir up high winds. Industrial properties in the City, as well as in the region, often need to transport hazardous materials through Rancho Cucamonga on its freeways and rail lines, creating the potential for accidental releases. These are some of the hazards the City has faced for many years and is well prepared to manage them through the coordinated efforts of its dedicated emergency services entities. This Chapter encapsulates the policy direction that enhances the level of protection from natural and human-made hazards.

Achieving Our Vision

The vision for Rancho Cucamonga is based on a commitment to provide a safe living environment for families, businesses, and visitors and placing a high priority on planning for potential natural and human-caused hazards. The high level of public safety the City provides contributes to the quality of life and sense of community in Rancho Cucamonga. The City is a regional leader in environmental sustainability efforts and initiatives to reduce carbon production, thereby guarding against climate change and the associated local public safety impacts. The City of Rancho Cucamonga's vision for public health and safety is reflected in the following Spirit of Rancho Cucamonga Guiding Principles:

The Spirit of Family

- Rancho Cucamonga is a people-first community with a focus on families. We strive to create an environment that leads to stable and healthy families.

The Spirit of Community

- Through programs such as Healthy RC, we inspire a lifestyle that embraces a Healthy Mind, Body and Earth. We support lifelong learning and enrichment, active and healthy living, and environmental sustainability. These values are reflected in our programs and facilities for our residents and businesses. The high quality of services the City provides strengthens community bonds and contributes to healthy lifestyles.
- We depend upon one another and this is demonstrated by encouraging and recognizing volunteerism.

The Spirit of Leadership

- Our City is committed to being a leader in providing a safe place to live, work, and play.
- We promote sustainable neighborhood and building design.

The Spirit of Tomorrow

- Rancho Cucamonga will lead the way to a healthy environment. We are committed to environmental sustainability, which means meeting the needs of the present while conserving the ability of future generations to do the same.

- We are dedicated to a sustainable balance in land use patterns (residential, business, educational, agricultural, recreational, open space, and historic uses) and supporting transportation.
- We continue to provide a stable City government which respects the decisions of the past while being committed to long-range planning initiatives and the positive impacts of future development.

Fire and Emergency Services

The Rancho Cucamonga Fire Protection District (RCFPD) serves the combined 50-square-mile Rancho Cucamonga City and Sphere of Influence area. RCFPD is responsible for providing community protection by managing numerous programs for the efficient delivery of fire protection and emergency medical services, as well as other diverse emergency management and response programs. Personnel are dedicated to the preservation of life and property in service to the people of Rancho Cucamonga. In addition to highly skilled firefighters protecting commercial and industrial structures and homes, the RCFPD has identified specialized skills and trained many of its members and has equipment to deal with different types of emergencies. These include:

- **Wildland Fire Protection:** Firefighters specialize in mitigating fires in the Wildland Urban Interface (WUI) areas.
- **Emergency Medical Services (EMS):** Firefighters trained as Paramedics and Emergency Medical Technicians are responsible for providing rapid response and assessment of life in threatening situations that result from injury or illness.
- **Technical Rescue:** The Technical Rescue team is a specialized team that is trained in confined space rescue, trench rescue, building collapse and shoring, swift water rescue, high angle rope rescue, and large animal rescue.
- **Hazardous Material:** The Hazardous Materials team is a specialized team that is trained and certified to take corrective action to prevent or contain the spread of hazardous materials from spills, explosion, or fire.

RCFPD is also responsible for enforcing and implementing various community-based programs to ensure compliance with established fire standards. In addition, a community based Fire Safe Council has been established to focus on public education related to the threat of fires in the Wildland Urban Interface (discussed below). Currently, RCFPD operates six fire stations in the City; two additional fire stations are proposed, with one currently under construction, as per the recommendations of the 2005 Strategic Plan.

Wildland Urban Interface Fires

Located along the northern parts of the City is the Wildland Urban Interface (WUI), which poses an ongoing threat to the community. During the summer season, dry vegetation, little seasonal rain, and Santa Ana wind conditions can combine to increase the likelihood of fires in the San Bernardino National Forest, potentially threatening residential development near the San Gabriel Mountains. New construction within WUI areas is required to comply with California Building Code Chapter 7A, including requirements for fire retardant or ignition resistant construction

materials at roofs, eaves, vents, exterior walls, exterior windows, doors, and decks. California Government Code Section 51182 also requires buildings within these areas to provide defensible space. Members of the Wildland Fire Protection Team work closely with the City's Emergency Management Program to develop evacuation and travel routes in the event of a wildland fire.

| Table PS-1: Fire Stations | |
|-------------------------------|----------------------------------|
| Fire Station | Location |
| Fire Station 171 | 6627 Amethyst Avenue |
| Fire Station 172 | 9612 San Bernardino Road |
| Fire Station 173 | 12270 Fire House Court |
| Fire Station 174 | 11297 Jersey Avenue |
| Fire Station 175 | 11108 Banyon Street |
| Fire Station 176 | 5840 East Avenue |
| Fire Station 177 ¹ | Hellman Avenue and Rancho Street |
| Maintenance Facility | 11274 Jersey Avenue |

Source: Rancho Cucamonga Fire Protection District, 2009.

Note:

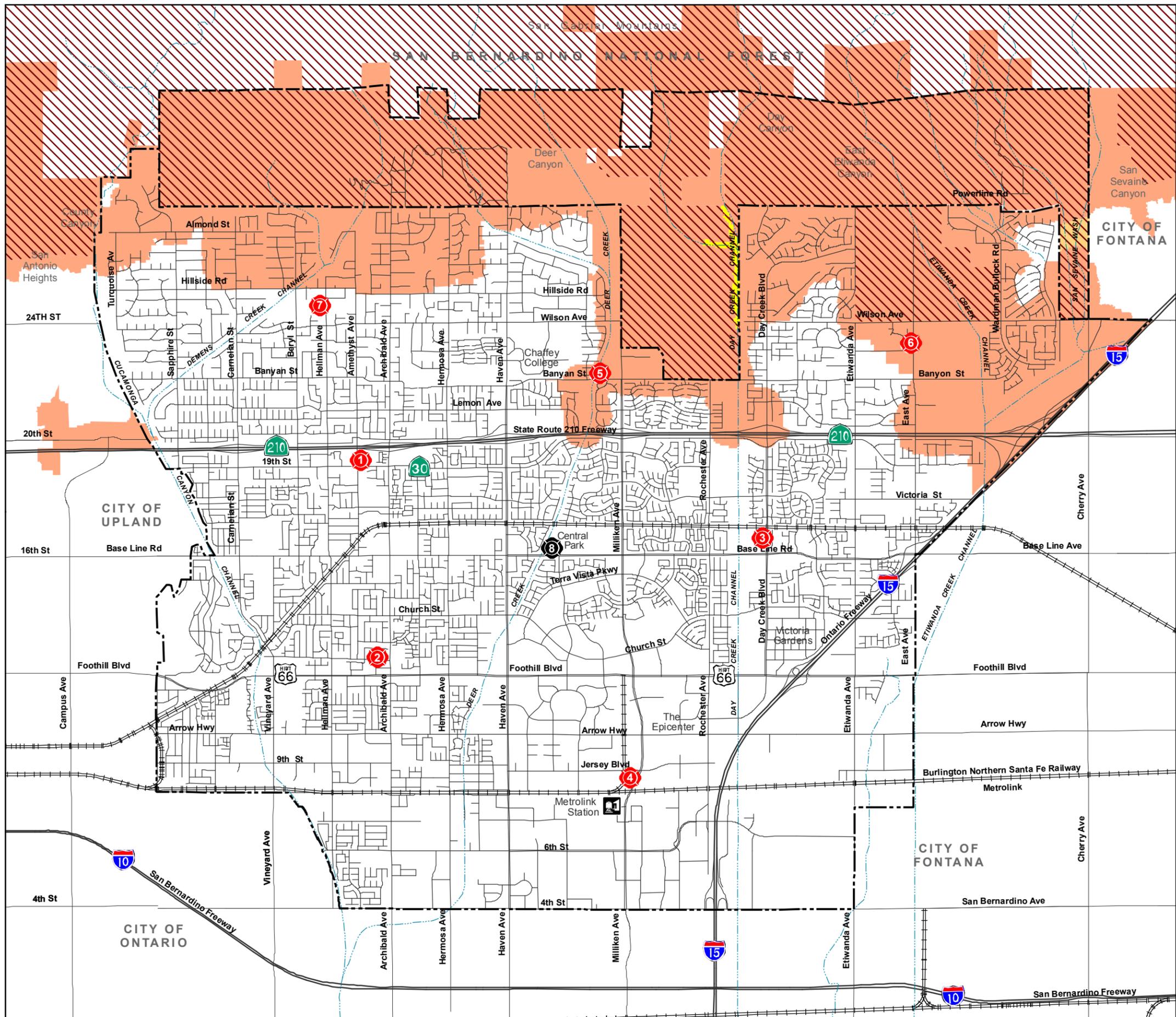
1. Fire Station 177 under construction as of 2009.

The threat of fire to hillside developments at the base of the San Gabriel Mountains is of real concern to Rancho Cucamonga residents living in the foothills. In 2003, the Grand Prix Fire burned through the entire WUI area of Rancho Cucamonga over a three-day period. Fifteen homes, three of which were in the City and twelve in the Sphere of Influence, were destroyed and more were damaged. Thousands of homes were threatened and evacuated. Figure PS-1 illustrates the fire hazard severity zones and fire protection responsibility areas identified by the California Department of Forestry and Fire Prevention (CAL Fire).

As part of a comprehensive plan to protect Rancho Cucamonga from the threats of wildland fires, the RCFPD has established recommendations for fire prevention, public education, strategic locations of new fire stations, reduction and modification of vegetation, ensurance of adequate water supply, and strict access provisions related to new development. These standards are referred to in more detail in the Local Hazards Mitigation Plan.

Urban Structural Fires

In addition to fires in the WUI, fires also occur within the City's urban areas. However, the threat of urban structural fire conflagration not associated with the WUI is relatively low in Rancho Cucamonga. Rancho Cucamonga requires that all new non-residential buildings over 5,000 square feet provide built-in fire sprinklers. In addition, all multi-family residential unit structures are built with key fire protection features including fire sprinklers.



Fire Protection Responsibility Areas¹

- Federal and State Responsibility Areas
- Local Responsibility Areas (LRA) - Incorporated

Fire Hazards Severity Zones²

- Moderate
- High
- Very High

Fire Stations

- Existing Fire Stations (2009)
 1. Fire Station No. 171
 2. Fire Station No. 172
 3. Fire Station No. 173
 4. Fire Station No. 174
 5. Fire Station No. 175
 6. Fire Station No. 176
 7. Fire Station No. 177
- Future Fire Station
 8. Fire Station No. 178

Base Map

- Rancho Cucamonga City Boundary
- Sphere of Influence

Notes: 1. This data depicts the official map of Fire Hazard Severity Zones in the State Responsibility Area of California as adopted by CAL Fire on November 7, 2007.

Website: http://rap.cdf.ca.gov/webdata/maps/san_bernardino_sw/fhszs_map.62.pdf

2. This data depicts the final CAL Fire recommendations for Very High Fire Hazards Severity Zones (VHFHSZ) in Local Responsibility Areas as of November 13, 2008. The data DOES NOT depict the final adopted map since local government can add additional VHFHSZ's after receiving recommendations from CAL Fire. Users are directed to contact the appropriate local entity (County, City, Fire Department, or Fire Protection District) to determine the status of the local fire hazard severity zone ordinance.

Website: http://rap.cdf.ca.gov/webdata/maps/san_bernardino_sw/fhszl_map.62.pdf

Source: City of Rancho Cucamonga and California Department of Forestry and Fire Protection, 2007 and 2008.

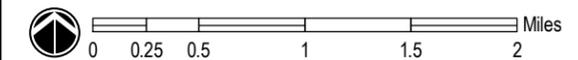


Figure PS-1:
Fire Hazard Severity Zones

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Structural fires occur most frequently in single and multi-family unit dwellings. As the community grows, new mid-rise and high-rise development will pose additional challenges for the RCFPD. There is also a commercial and industrial fire risk present, primarily in older construction, where modern fire protection equipment and systems have not been installed. To mitigate hazards associated with urban structural fires, applicable uniform building and fire codes must be continually enforced through a proactive inspection program.

Emergency Medical Services

RCFPD provides rapid response and assessment of life threatening situations resulting from injury and illness. The Emergency Medical Services (EMS) program consists of certified paramedics who provide Advanced Life Support (ALS) services to treat a variety of illnesses and injuries. Paramedics are responsible for patient assessment, contact with local hospitals, and advanced treatment.

The RCFPD has been a leader in adopting protocols and technology that enhances patient care. This includes its 12-lead EKG program, which helps paramedics detect and treat life threatening heart irregularities in conjunction with San Antonio Community Hospital.

Most of the medical emergencies in Rancho Cucamonga occur in homes and businesses. However, the City also experiences traffic accidents, mass casualty incidents on the freeways, and industrial accidents. Emergency medical services would also be needed in the event of a Metrolink commuter train accident in the City or should individuals become injured on hiking trails, along creeks, or within flood control channels.

Emergency Management

The Emergency Management Program is administered throughout all City departments and the community by the RCFPD. The program includes all four phases of effective emergency management: mitigation, preparedness, response, and recovery, incorporated in an all-hazards planning cycle. The cornerstone of the program is the comprehensive City of Rancho Cucamonga Emergency Operations Plan. Updated regularly, this document details the City's responsibility before, during, and after emergencies. The program also maintains compliance with the federally mandated National Incident Management System (NIMS) and the State Standardized Emergency Management System (SEMS) through regular Incident Command System training and disaster preparedness exercises for employees and the community.

In addition, the program serves as the liaison for the City's disaster volunteers, which include the Auxiliary Communications Service (ACS), responsible for redundant emergency communication, the Alta Loma Emergency Response Team (ALERT), responsible for large animal rescue, and the Citizen Corps Program, which contains the Citizen Emergency Response Team (CERT), providing emergency preparedness information and disaster training for use by individuals in their own neighborhoods in times of emergency. The private sector and the business community are also integral parts of an effective emergency management program. As such, strong relationships are maintained with the Chamber of Commerce as well as Community Organizations Active in Disaster (COAD), a coalition of non-profit agencies committed to disaster response and recovery.

In order to adequately coordinate response activities, the program maintains a fully dedicated and operationally ready Emergency Operations Center (EOC), which

serves as a Multi-Agency Coordination System and facilitates immediate communication with the San Bernardino County Office of Emergency Services. This allows for the full activation of regional, State, and Federal government as necessary.

Hazardous Materials Threat

Hazardous materials and chemicals are used daily by industry, businesses, and residents. Some hazardous material sources include seemingly innocuous businesses such as service stations, medical labs, dry-cleaners, and photo processing centers. Others are large firms that may generate large quantities of hazardous waste, such as chemical manufacturers, electroplating companies, or petroleum distilleries. In addition, commonly used household products such as paints, cleaners, oils, batteries, and pesticides contain potentially hazardous ingredients. Accidental spills or leaks, illegal dumping of hazardous waste, illegal storage, or a transportation accident could release hazardous materials in the community.

Both the Federal government and the State of California require all businesses that store hazardous materials in excess of specified quantities to report their chemical inventories in a Hazardous Materials Management Plan. Businesses are also required to report releases of toxic chemicals into the air, water, and land, as well as off-site transfers of waste to another location. Facilities that store hazardous materials are required to report on pollution prevention activities and chemical recycling. All of these businesses operate under stringent regulations governing the storage, use, manufacturing, and handling of hazardous materials.

The U.S. Environmental Protection Agency (EPA) maintains and publishes a database that lists properties that handle or produce hazardous materials. The EPA defines a small quantity waste generator as one that produces between 100 and 1,000 kilograms of hazardous waste per month. Small businesses like dry cleaners, auto repair shops, hospitals, and metal plating shops usually are defined as generators of small quantities of hazardous waste. As of 2009, approximately 130 small quantity generators operated in Rancho Cucamonga. The EPA defines a large quantity generator as a business that produces over 1,000 kilograms of hazardous waste per month. Large quantity generators include large manufacturing facilities and businesses like chemical manufacturers. As of 2009, 20 large quantity generators were located in Rancho Cucamonga. In addition, Rancho Cucamonga has nine registered transporters of hazardous waste.

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), which is also referred to as the Superfund Act, is a Federal law designed to protect the environment from risks created from previous chemical disposal practices. The EPA designates Superfund sites as neglected or abandoned sites with hazardous waste that could possibly threaten local ecosystems and/or the community. The EPA assigns "archive" status to sites where no immediate or long-term risks to human health are posed. In 2009, the EPA listed one CERCLA/Superfund site in Rancho Cucamonga.

Hazardous Materials Management

RCFPD is the first responder for any hazardous material emergencies in the community, and has a dedicated Hazardous Materials Team at Day Creek Station 173 (north of Base Line Road). This specialized team is trained in both biological and chemical hazardous materials emergency response. Hazardous materials emergencies are most likely to occur on local highways and in the industrial area of the City.

RCFPD also coordinates hazardous materials and emergency preparedness planning and appropriate response efforts with other City departments and outside agencies. Rancho Cucamonga participates in a county-wide interagency coalition to better utilize the expertise and equipment that exists within all participating Fire Districts. The City also adopted a Standardized Emergency Management System (SEMS) Multi-Hazard Functional Plan to respond to chemical emergencies.

The City of Rancho Cucamonga provides a permanent drop-off facility for household hazardous waste (HHW) at a San Bernardino County facility within the community. Both RCFPD and City staff members are trained in hazardous waste handling and emergency response procedures.

Crime Prevention

Public safety is of the utmost importance in Rancho Cucamonga. Accordingly, the City adds equipment and personnel to enhance and meet increased police service needs as the population and businesses grow. In addition, the City continues to seek out programs that educate the public on crime trends, awareness, prevention, and safety. In addition to Rancho Cucamonga's law enforcement professionals working to reduce crime in Rancho Cucamonga, the City has strong volunteer policing programs in place, reflective of residents' dedication to the community.

Police Services

Rancho Cucamonga contracts with the San Bernardino County Sheriff's Department (SBCSD) for police services. SBCSD provides a full range of specialty and support services that would not be available in small municipal police departments, including: Homicide Investigations, Helicopter Patrol, Narcotics Investigations, Special Enforcement Team (SWAT), Media Relations, Crime Lab Services, Bomb and Arson Teams, among others. Given the large territory covered by the Sheriff's Department, Rancho Cucamonga also benefits from a regional approach to crime fighting and public safety. The challenge facing the SBCSD is to work with each contract city in defining the unique service delivery needs of a community and then providing services consistent with those needs and expectations.



There is a Police Substation located at Victoria Gardens Shopping Center.

The SBCSD operates the Police Department and provides response services, criminal investigation services, traffic enforcement, and preventive patrol with the main police facility located at the City’s Civic Center. There is also a sub-station located within the Victoria Gardens Shopping Center and one satellite office located at Vineyard Avenue and Base Line Road. The City intends to design and construct a new public safety facility in the northeast part of the City (known as the North End Station, to be located at Milliken Avenue and Grizzly Drive). The new public safety facility will offer the same services as the main station. The Police Department also maintains a motor home that can be utilized as either a command post or a temporary station if needed.

| Table PS-2: Police Stations | |
|------------------------------------|--------------------------------------|
| Fire Station | Location |
| Police Department (main facility) | 10510 Civic Center Drive (City Hall) |
| Victoria Gardens Satellite Station | 7743 Kew Avenue |
| Satellite Office | Vineyard Avenue and Base Line Road |

Long-range planning is the key to maintaining the level of public safety Rancho Cucamonga currently experiences. The long-term goals of the Rancho Cucamonga Police Department include:

- Maintaining the current high level of services being provided, despite population and territorial growth
- Continual review and evaluation of the San Bernardino County police services contract to ensure a constant high level of service as the City’s needs change
- Planning for and implementing changes in levels of staffing and equipment to maintain high levels of services for future growth

Reinforcing that commitment is the network of neighborhood watch groups who work together on pro-active measures to deter crime. In addition, Rancho Cucamonga has a Solution Oriented Policing Unit that works with other City agencies and residents to develop practical, innovative, and permanent solutions to reducing crime. This unit includes a gang detail, a crime prevention unit, a bicycle enforcement team, school resource officers, and an “Every 15 Minutes” Youth Anti-Drunk Driving Program. The Police Department also benefits from extensive volunteer programs including a Sheriff’s Reserve Team, Citizen’s Patrol Program, and Citizen’s Equestrian Unit. The Equestrian Unit patrols over 150 miles of hiking and riding trails in the area. Volunteers donate thousands of hours of time to support the crime prevention services of the Police Department.

The Rancho Cucamonga Police Department also works in cooperation with the law enforcement agencies of neighboring cities and jurisdictions, as well as State and Federal agencies. There is a Mutual Aid Plan in place, which sets up contingency plans for assistance and cooperation in the event of a large-scale disaster or emergency.

Crime Prevention Through Environmental Design

Rancho Cucamonga values effective crime prevention and strives to find creative ways to make residents and businesses safe. Crime Prevention Through Environmental Design (CPTED) is a planning tool that focuses on the proper design and use of the built environment to deter and prevent crime. Strategies include design techniques that encourage “eyes on the street” building orientation and design features that deter criminal activity and positively influence human behavior and the perception of safety.

Rancho Cucamonga’s CPTED is a multi-disciplinary approach that includes many City departments and agencies (including Planning, Police, Business Licensing, Code Enforcement, and others) and members of the community to work together to reduce crime. The expertise provided by these groups helps the City fix underlying problems instead of focusing on isolated solutions to individual incidents.

The five basic principles of CPTED provide the foundation for the crime prevention strategies related to physical design. These principles make it clear that CPTED is oriented almost exclusively toward crimes of opportunity: crimes committed by perpetrators who are unknown to the potential victim. While not all crimes are of this type, they constitute the vast majority and account for the greatest sense of fear by law-abiding citizens. The principles include:

- **Engagement.** Involve community members as participants in the crime prevention network through Neighborhood Watch, Citizen Patrol, Equestrian Patrol, reserve officers, and other programs in conjunction with the Police Department and other law enforcement agencies. This is critical to preventing crime. To deter crime, make sure the community is aware of potential criminal activity, is geared to observing and reporting crime, and is educated on crime prevention techniques. The goal is to have plenty of “eyes on the street.”
- **Natural Surveillance.** It is important to organize physical features, activities, and people in such a way as to maximize visibility so that crimes of opportunity can more readily be witnessed. The prospect of being seen deters criminal activity.
- **Natural Access Control.** The judicious placement and design of entrances, exits, driveways, signs, fencing, landscaping, and lighting physically guides people coming to and going from a space. This is particularly valuable in making escape appear more difficult for criminals after they have committed a crime.
- **Territorial Reinforcement.** The use of physical attributes that express ownership, such as fences, pavement treatments, art, signs, and landscaping help distinguish those who belong in an area from those who may not and aids in the quick identification of unusual behavior.
- **Management and Maintenance.** The continued use of a space for its intended purpose, which serves as an additional expression of ownership and territoriality, reinforces the identity of places and spaces that are safe; simply making an area less desirable for potential criminals.

Seismic and Geologic Hazards

The Southern California landscape clearly reveals the earth forces that shaped the region and that we live with daily. The mountain ranges are expressions of the Earth's surface moving, which continues to push the San Gabriel Mountains upward at a rate of up to two centimeters per year. As a result of location, Rancho Cucamonga needs to plan for potential earthquakes, secondary seismic effects, and geologic conditions.

Seismic Hazards

While many natural and man-made hazards have the potential to impact the City, the event with the greatest potential for loss of life, property, and economic damage is an earthquake. The hazards associated with an earthquake in Rancho Cucamonga include ground shaking, fault rupture, landslides, and foundation failures caused by liquefaction or settlement. Earthquakes can also trigger many secondary effects such as landslides and rock falls, urban fires, building collapse, water tank or dam failures, disruption of essential facilities and systems (water, sewer, gas, electricity, transportation, and communications), and hazardous materials releases.

Although it is not possible to prevent earthquakes from occurring, their destructive effects can be minimized. Through the implementation of comprehensive hazard mitigation programs, including the identification and mapping of hazards, prudent planning, emergency exercises, enforcement of building codes, and expedient retrofitting and rehabilitation of weak structures, the City can significantly reduce the scope of damage caused by an earthquake.

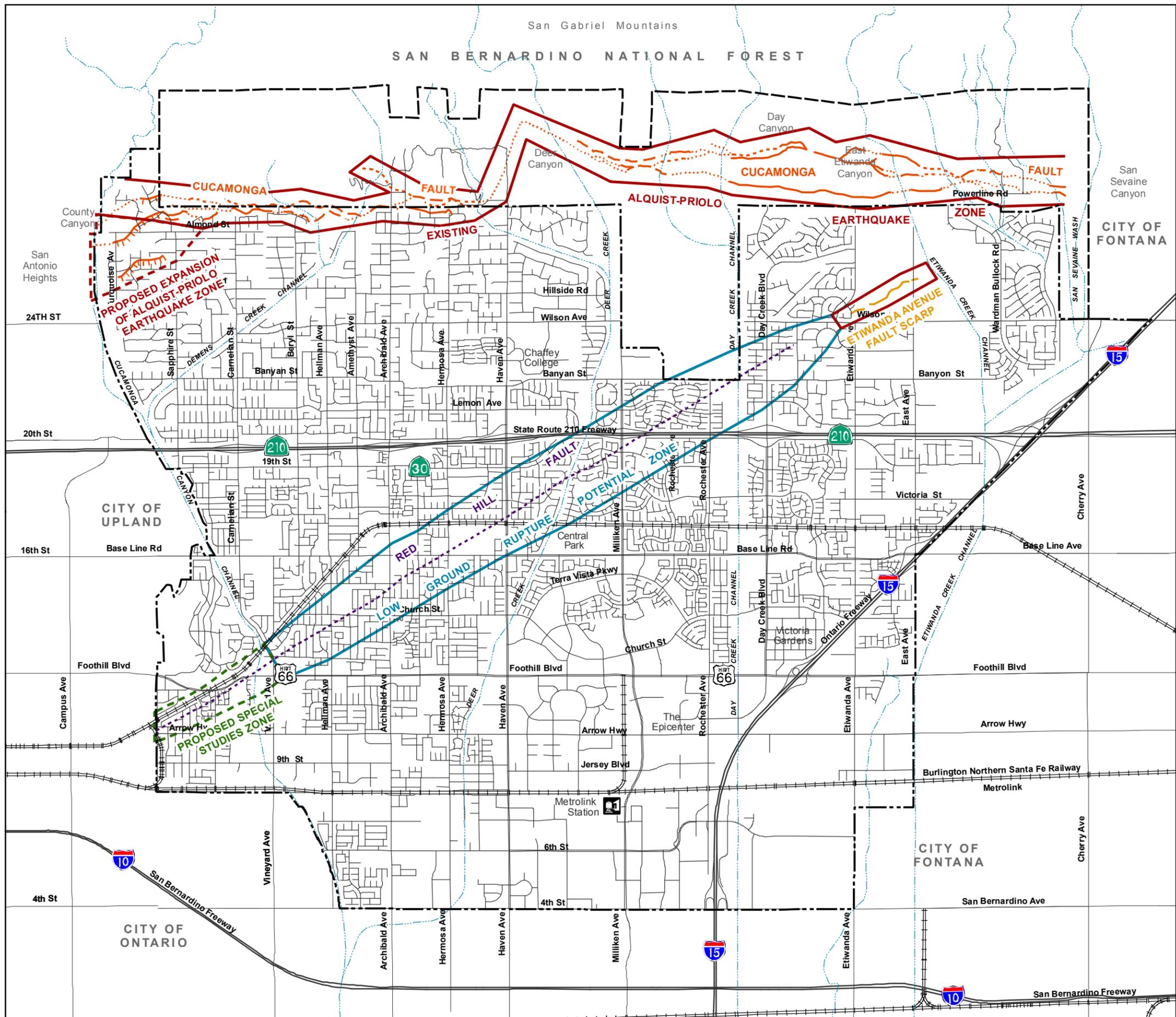
The Reservoir Hazard Study for the Cucamonga Valley Water District (CVWD) evaluated the performance of CVWD's tanks under seismic loads from earthquakes on the nearby Cucamonga and Red Hill faults. Should a large earthquake occur on either of these faults, the study indicates that none of CVWD's water tanks will survive undamaged. Most (14) will suffer only broken pipe connections, 10 will probably suffer tears or seam breaks, and 2 will likely collapse. These findings are significant in their impact on fire flow and emergency storage following an earthquake.

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 of the earthquake and proximity to the event's epicenter.

The City of Rancho Cucamonga is located near two of California's most active faults, the San Andreas and San Jacinto Faults. These faults are thought to have the highest probability of generating a large earthquake in the near future (up to 7.3 and 6.7 magnitude, respectively). Figure PS-2 illustrates the locations of faults.

While activity on the San Andreas and San Jacinto Faults is considered more likely, a major earthquake (7.0 magnitude) on the Cucamonga Fault, located in the northern Sphere of Influence, is assumed to be the worst-case earthquake scenario for the City. Ground displacements of up to 9 feet could occur along the fault, intense ground shaking could last more than 30 seconds, and losses could be extensive.



Fault Zones

- Existing Alquist-Priolo Earthquake Zone¹
- - - Proposed Expansion of Alquist-Priolo Earthquake Zone¹
- - - Proposed Special Studies Zone¹
- Low Ground Rupture Potential Zone²

Active Faults

- Cucamonga Fault**
- Fault Accurately Located
 - - - Fault Approximately Located
 - · · · · Fault Inferred
 - · · · · Fault Concealed
 - ||||| Fault Scarp (ticks indicate downthrown side)
- Etiwanda Avenue Fault Scarp**
- Fault Accurately Located
- Red Hill Fault**
- - - Fault Inferred
 - - ? - - Fault Queried (uncertain)

Base Map

- Rancho Cucamonga City Boundary
- Sphere of Influence

Notes: 1. All proposed structures for human occupancy within these zones shall require special fault hazard studies.
 2. Associated with the uncertain segment of Red Hill Fault, special studies/foundations recommended for essential/critical facilities.

Source: City of Rancho Cucamonga, 2008 and Earth Consultants International, 2000.



Figure PS-2:
Fault Hazards

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Another major fault, traversing the City in a northeast direction, is the Red Hill Fault. This fault consists of three segments: (1) the Etiwanda Avenue Fault Scarp, which has been shown to be clearly active; (2) a southern section at the base of Red Hill with uncertain activity; and (3) a probable central segment that has not yet been located. The Etiwanda Avenue Fault Scarp (potential for 6.5 magnitude earthquake) is considered capable of ground shaking at an intensity that presents unacceptable risks to proposed structures. The other two segments, not yet detected, could induce further damage.

A fault scarp is a feature on the surface of the earth that looks like a step caused by slip on the fault.

Fault Surface Rupture

In 1972, the Alquist-Priolo Earthquake Fault Zoning Act was enacted to mitigate the hazard of fault rupture by prohibiting the construction of buildings along all active fault lines. The Act dictates that jurisdictions withhold development permits for sites within an Earthquake Fault Zone until geologic investigations demonstrate that the sites are not threatened by surface displacements from future faulting.

Alquist-Priolo Earthquake Fault Zones have been designated for the Cucamonga Fault and a portion of the Red Hill Fault, referred to as the “Etiwanda Avenue Fault Scarp.” Since adoption of these zones, two potential changes have been identified.

The first is to include recently discovered splays of the Cucamonga Fault in the northwestern portion of the City within the Alquist-Priolo Earthquake Fault Zone. The second is the adoption of another Earthquake Fault Zone for a portion of the Red Hill Fault near the western boundary of the City. It is conjectured that the Red Hill Fault may extend to meet the Etiwanda Avenue Fault Scarp, however evidence is inconclusive. As such, the City continues to designate a Potential Zone for this area, where special geologic investigations will be required for all essential and critical facilities. Critical facilities include fire stations, schools, hospitals, dams and flood control structures, bridges, communication centers, and other facilities that are needed during an emergency or would pose unacceptable safety risks to the community if severely damaged. Figure PS-2: Fault Hazards Map illustrates the existing and proposed Alquist-Priolo Zones in Rancho Cucamonga.

Liquefaction

Liquefaction is a geologic process that causes various types of ground failure. Liquefaction typically occurs when loose, saturated sediment of primarily sandy composition is subject to strong ground shaking. When liquefaction occurs, the sediments involved experience a total or substantial loss of shear strength and behave like a liquid substance. California’s Seismic Hazards Mapping Act provides for statewide mapping of seismic hazards. Not all areas of California have been mapped yet; as of 2009, no information was available for Rancho Cucamonga as mapping is still being conducted.

However, a review of high groundwater areas in the City can provide some indication for areas of concern regarding liquefaction. In Rancho Cucamonga, three small areas of concern have been identified. These areas are located in the western portion of the City, where groundwater is within fifty feet of the surface, which meets the condition for liquefaction to occur (Figure PS-3: Geotechnical Hazards). However, regional mapping indicates that much of the sediment in these areas may be too dense to liquefy. Projects proposed in these potential liquefaction zones should address the potential for liquefaction to occur, and mitigate as needed.

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. Figure PS-3: Geotechnical Hazards, as referenced above, outlines the areas of the City that are susceptible to seismically induced landslides.

Settlement

The potential for seismic settlement to occur is based on the intensity and duration of ground shaking and the relative density of the subsurface soils. Most of the City is susceptible to some degree of seismic settlement, as the alluvial fans underlying much of the City are of low density. However, as past earthquakes have shown, seismic settlement is primarily damaging in areas subject to differential settlement. Although differential settlement generally occurs slowly enough that its effects are not dangerous to building inhabitants, it can cause significant building damage over time. In the City, differential settlement is most likely to occur at the base of the San Gabriel Mountains, and especially where loose or uncontrolled (non-engineered) fill is used.

Geologic Hazards

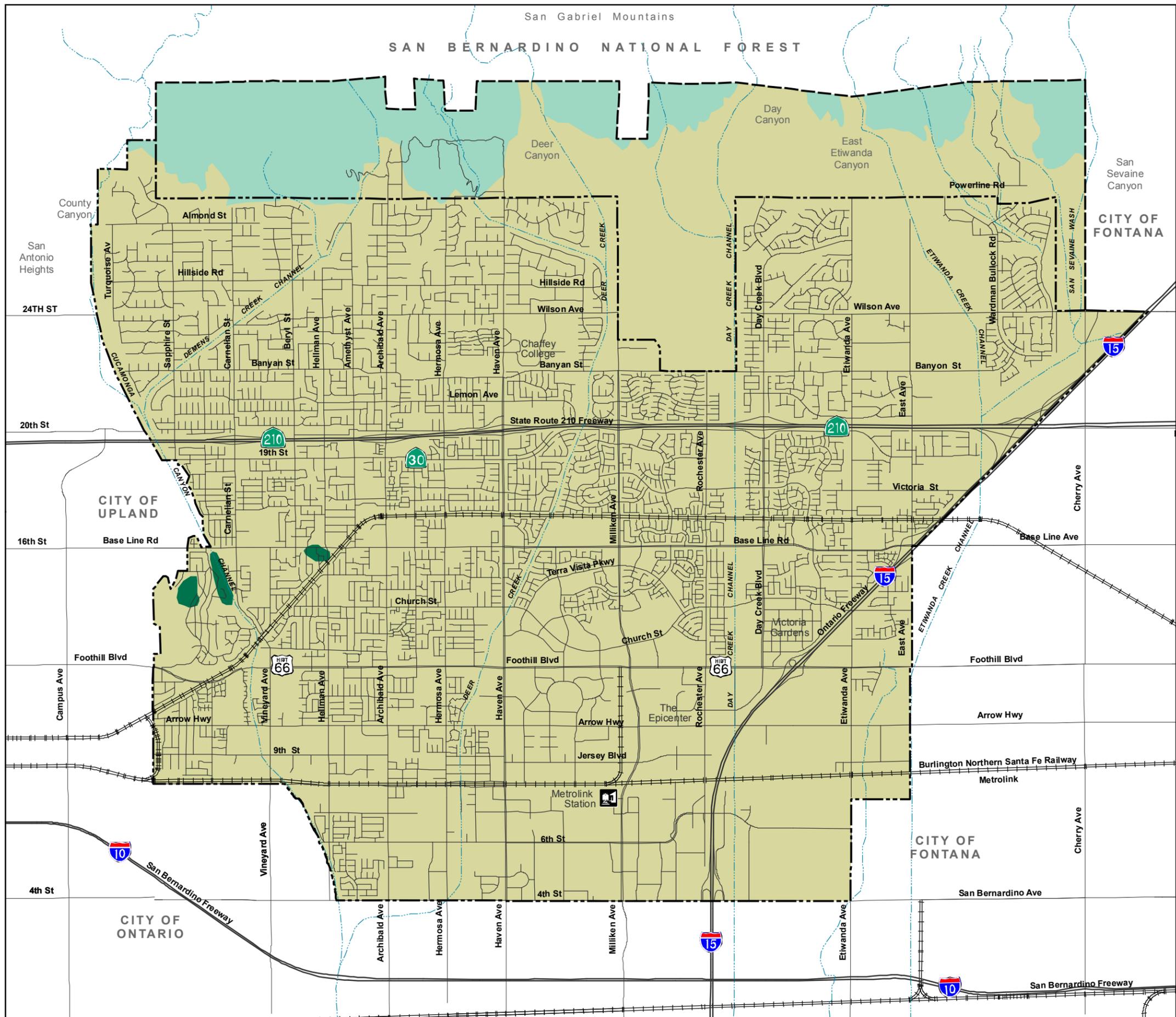
The San Gabriel Mountains are among the fastest rising and fastest disintegrating mountain ranges in the world. Due to Rancho Cucamonga's proximity to the mountain range, these rapid changes make the City susceptible to geologic hazards including debris flows and falling rocks due to erosion of the steep slopes, concentration of precipitation from storms, and rapid stream flow from mountain streams, leading to increased potential for land subsidence in certain soil conditions. The areas most at risk from hazards associated with debris flow and falling rocks are located along the base of the San Gabriel Mountains in the northern portion of the Sphere of Influence area.

As with seismic hazards, the Municipal Code contains the baseline minimum standards to guard against unsafe development in geologically hazardous areas. These standards are further supported through zoning regulations, hillside development standards, and the policies and implementing actions contained in this General Plan.

Slope Stability

The potential for slope failure is dependent on many factors and their interrelationships. Some of the most important factors include slope height, slope steepness, and shear strength and orientation of weak layers in the underlying geologic units. Ultimately, prolonged rainfall, erosion and undercutting by streams, man-made alterations to the slope, or seismic shaking can cause a slope to fail.

Debris flows, like rock falls, occur rapidly and without warning, causing boulders, cobbles, and sand to fall within the drainages of the eastern San Gabriel Mountains. These drainage areas include Cucamonga Creek, Demens Canyon, Deer Canyon, Day Canyon, and East Etiwanda Creek. Debris flows and flooding hazards associated with the San Gabriel Mountains are controlled by the San Bernardino County Flood Control District, which maintains numerous debris basins and flood control facilities in the City and Sphere area. County and City officials work together through the project review process to ensure that new development is properly protected from debris flows and flooding. Figure PS-4: Slopes illustrates the slope steepness and mitigation guidelines proposed in the City.



- Landslides**
Potential for seismically-induced rockfall. Based on slope steepness and the presence of granitic boulders.
- Liquefaction**
Potential liquefaction areas. Groundwater is locally perched within 50 feet of the ground surface.
- Potential for regional seismic settlement**

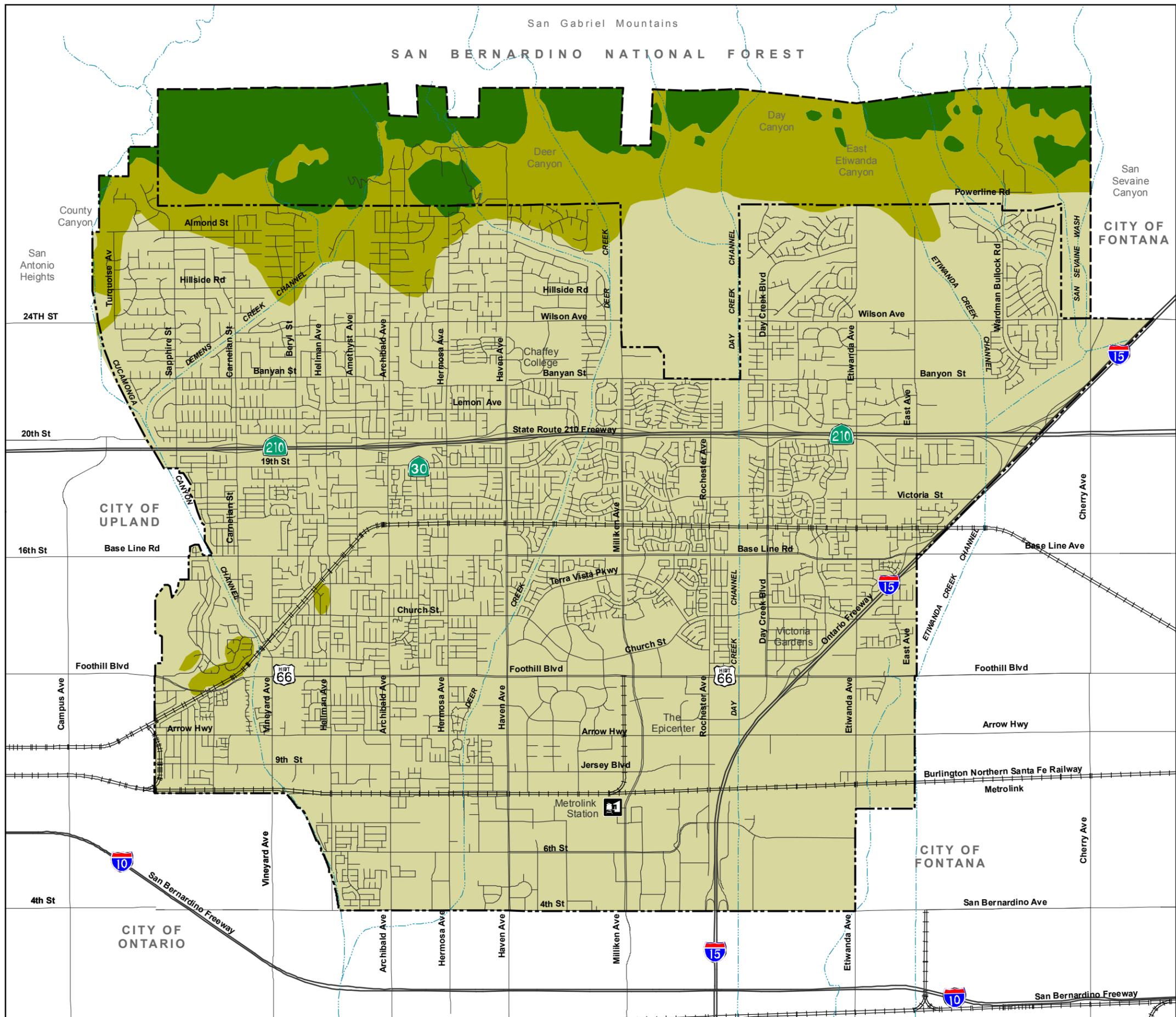
- Rancho Cucamonga City Boundary
- Sphere of Influence
- Waterways

Source: Rancho Cucamonga, 2001 and Earth Consultants International 1999.



Figure PS-3:
Geotechnical Hazards

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- Slopes**
- Slopes greater than 30%**
Recommended to remain as open space to reduce the potential for slope instability and debris flows.¹
 - Slopes between 10%-30%**
Region where hillside design and grading guidelines should be implemented (see text).²
 - Slopes less than 10%**
No special hillside recommendations are required.

--- Rancho Cucamonga City Boundary
 - - - Sphere of Influence

Notes: 1. Slope steepness is based on regional mapping and specific sites near boundaries should be checked by the project engineer.
 2. Refer to Rancho Cucamonga Development Code regarding slopes greater than 8% for hillside development regulations.

Source: City of Rancho Cucamonga, 2008 and Earth Consultants International, 2000.



Figure PS-4:
 Slopes

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To reduce future debris flow and slope instability, maintenance of existing debris basins and flood control facilities is required, as well as environmental preservation of the eastern San Gabriel Mountains. Additionally, a Hillside Development Regulations Ordinance was designed and adopted to help achieve these goals.

Subsidence

Ground subsidence is the gradual settling or sinking of the ground with little or no horizontal movement. This condition is usually associated with the extraction of oil, gas, or groundwater from below the ground surface, or the organic decomposition of peat deposits, with a resultant loss in volume. The thick alluvial deposits underlying most of the City would be susceptible to subsidence should rapid groundwater withdrawal occur. Damage to structures as a result of regional subsidence may be greatest at the valley margins adjacent to the San Gabriel Mountains and possibly the Red Hill Fault. A regional approach to groundwater conservation and recharge is required in these areas.

Flood Hazards and Inundation

Rancho Cucamonga, due to its location at the base of the San Gabriel Mountains, has a history of flooding. Many of the streets in the northern portion of the City have been known to flood. Comprehensive storm drain improvements and flood control projects have reduced the threat of floods somewhat, but not entirely. An unusually large storm and flash flooding can create flooding hazards within the City.

The largest flood in recent memory occurred in 1969, and many residents were unprepared for a flood of this size. A damaged flood levee structure in the Cucamonga Spreading Grounds failed, causing the Cucamonga Creek to breach its channel and resulted in \$68 million in damages. Another major flood occurred in 1977; damages were especially severe on Vineyard Avenue and Hellman Avenue. The most recent large-scale flood occurred in 1983. Alta Loma High School on Base Line Road was damaged with more than 30 of its classrooms flooded. Flood waters damaged asphalt streets in the City causing wash-outs, cave-ins, and flooded homes.

Flood Hazard Areas

The unpredictable range in seasonal rainfall that is typical of Southern California, coupled with the location near the San Gabriel Mountains, makes Rancho Cucamonga vulnerable to flooding during the winter storm season. To prepare and mitigate hazards from flooding, Rancho Cucamonga participates in the National Flood Insurance Program. Flood Insurance Rate Maps, or FIRMs, are prepared by the Federal Emergency Management Agency (FEMA) to identify potential flood zones. Figure PS-5: Flood Hazard Zones, identifies the “Special Flood Hazard Areas” for Rancho Cucamonga, as recorded by FEMA. The Flood Hazard map shows locations of essential public facilities.

Flood hazards related to storm events are generally described in terms of a 100- or 500-year flood. These are floods that, respectively, have a 1.0 percent and 0.2 percent chance of occurring every year. Rancho Cucamonga has adopted flood protection standards requiring minimum building elevation, flood proofing, and anchoring of buildings in areas that are identified as prone to flooding. The precise limits of the flood plain areas and the flood zone designations can be viewed on the FIRM maps in the City’s Engineering Department.

Drainage Plans and Facilities

The City maintains a Master Drainage Plan to provide a drainage system that will adequately convey a 100-year storm event. In addition to storm drains and flood control channels, the system includes debris basins and spreading grounds to reduce mud flows. The drainage system in Rancho Cucamonga has been substantially improved in recent decades and contains an integrated approach that provides for regional and local drainage flows. The completion of the Hillside Storm Drain, Deer Creek Channel, Demens Channel, and Day Creek Debris Basins has reduced the extent of potential flooding within the City. Recent improvements, including the Upper and Lower Hermosa Storm Drain projects, the Archibald Storm Drain project and the Etiwanda/San Sevaine Flood Control project, have further reduced flooding potential in the City.

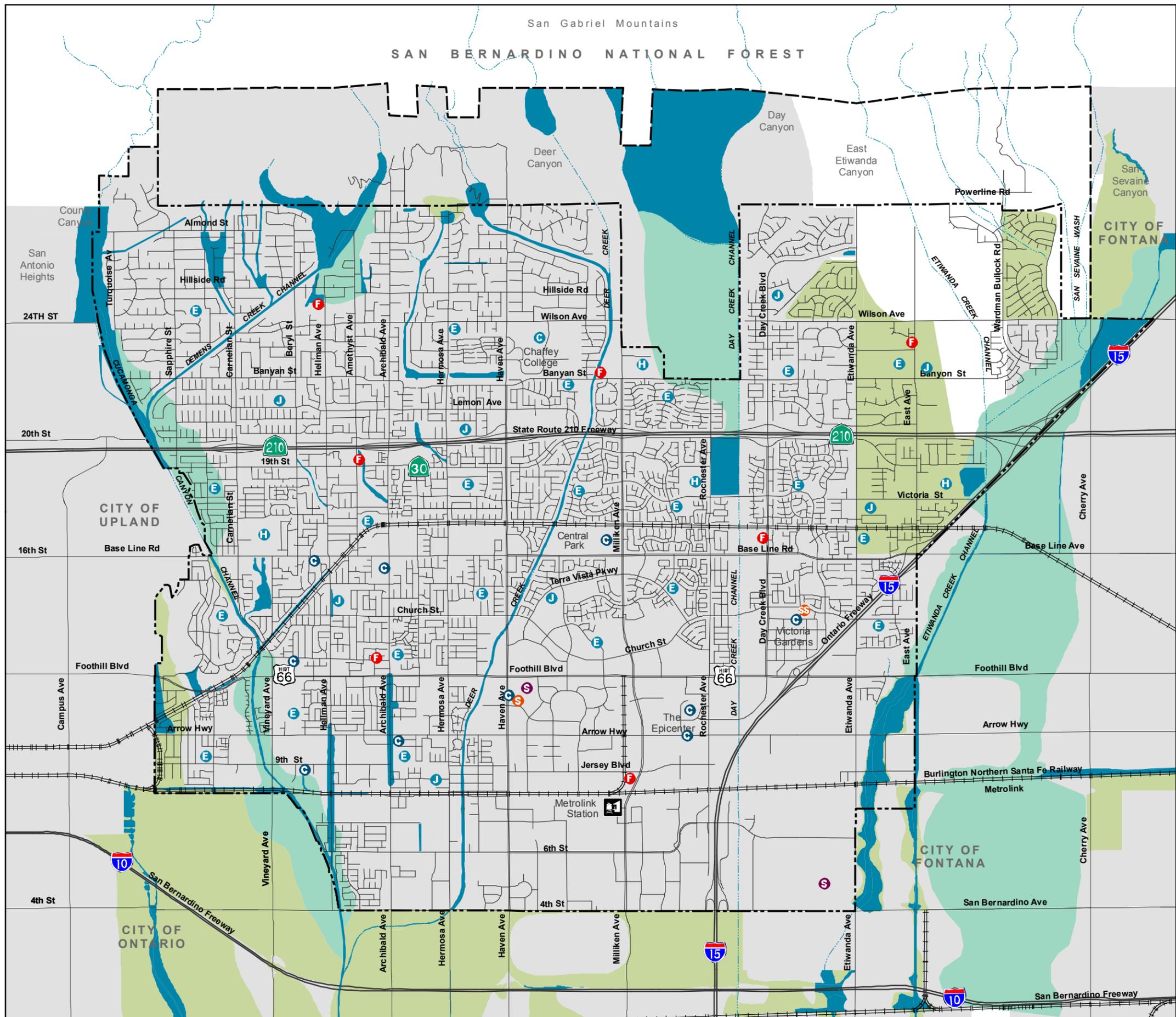
The San Bernardino County Flood Control District is responsible for the regional facilities and the City of Rancho Cucamonga is responsible for the localized facilities. Both agencies coordinate in the preparation of drainage plans as well as individual project review based on design criteria established by the San Bernardino County Flood Control District.

The City of Rancho Cucamonga has prepared specific drainage plans for the east and west portions of the City. The drainage plans detail the funding required through collection of revenue from new development for construction of the systems. The plans approximate the flood control needs of a fully developed drainage area.

A substantial portion of the City is not covered by the two City drainage plans identified above. Instead, the drainage system for the area is covered by a number of adopted Specific Plan or Community Plan facilities. Developers within the County of San Bernardino Flood Control District are responsible for completing the necessary drainage facilities not covered by City drainage plans.

Two areas within the City are known to be deficient in their level of drainage improvements. The first area consists of those portions of the City that are not yet developed and, therefore, have no flood control improvements. Future development of these areas will decrease the amount of permeable ground area that can absorb water, thereby contributing to an increase in the amount of stormwater runoff that must be controlled. Therefore, as development continues, new flood control facilities will be required.

In addition, certain areas within the Industrial Specific Plan areas may require additional detention facilities. The drainage facilities for the industrial property generally located north and south of the Metrolink tracks between Haven Avenue and Rochester Avenue were designed and constructed using San Bernardino County Flood Control criteria in effect during the early 1980s. New development within this area may require the addition of detention facilities on a case-by-case basis to provide 100-year flood protection for the structures on these properties.



- Flood Hazard Zones**
- Special Hazard Area (100-year Floodplain)
 - 1% Annual Chance of Flood Hazard Area
 - Moderate Hazard Area (500-year Floodplain)
 - 0.2% Annual Chance of Flood Hazard Area
 - Protected by Levee
 - Minimum Hazard Area (500-year Floodplain)
 - Area Outside of 0.2% Annual Chance of Flood Hazard

- Base Map**
- Rancho Cucamonga City Boundary
 - - - Sphere of Influence
 - ... Waterways

- Critical Facilities**
- E Elementary School
 - J Junior High/Middle School
 - H High School
 - G College
 - F Fire Station
 - S Sheriff's Station
 - SS Sheriff's Sub-Station
 - SG San Bernardino Government Facilities
 - C City Facilities

Note: The National Flood Hazard Layer (NFHL) data used to create this map incorporates all Digital Flood Insurance Rate Map (DFIRM) databases published by FEMA, and any Letters Of Map Revisions (LOMRs) that have been issued against those databases since their publication date. The published effective Flood Insurance Rate Map (FIRM) and DFIRM maps are issued as the official designation of the Special Flood Hazard Areas (SFHAs).

For official FIRM visit FEMA's Website: <http://msc.fema.gov>

Source: City of Rancho Cucamonga, 2008 and Federal Emergency Management Agency, DFIRM published August 28, 2008.



Figure PS-5:
Flood Hazard Zones

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Dam Inundation

Dam or catch basin failure could occur as a result of an earthquake, erosion, design flaw, or water overflow during storms, causing inundation in certain parts of the City. California law 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 the water retention facilities that could affect Rancho Cucamonga are shown in Figure PS-6.¹

There are four debris and water catch basins located within the City, and a small portion of southwestern Rancho Cucamonga could be affected by a breach of the San Antonio Dam in Upland. The dam is a flood control and water conservation project constructed and operated by the U.S. Army Corps of Engineers.

The closest acute care hospital, San Antonio Community Hospital in Upland, is located in the inundation path of the San Antonio Dam, which was damaged by the relatively minor 1990 Upland earthquake, and is considered vulnerable to a Cucamonga or San Andreas Fault earthquake.

Even if earthquake damage at the dam does not result in failure, damage to the dam may lead to evacuation of the potential inundation areas, including San Antonio Community Hospital. Therefore, disaster planning must consider alternative acute care facilities for casualties.

Inundation studies based on failures of CVWD's water tanks indicate that four of the projected reservoir failures will impact land that is currently vacant, three are expected to inundate one or two structures, and one reservoir site may inundate as many as 15 residences. The City is required by State law to have in place emergency procedures for the evacuation and control of populated areas within the limits of inundation below the dams. In addition, real estate disclosure upon sale or transfer of property in the inundation area is required.

Hazards and Development Suitability

A key consideration in relation to the three natural hazards discussed above (Seismic, Geologic, and Flooding/Inundation) is how these hazards impact the suitability of development. Table PS-3: Suitability of Development in Seismic/Geologic Hazard Areas indicates the general specifications for critical structures and structures for human occupancy in relation to potentially hazardous conditions.

¹ Mapping data is not available for inundation areas associated with Deer Canyon or Day Creek debris basins.

Table PS-3: Suitability of Development in Seismic/Geologic Hazard Areas

| Potential Hazards | Land Use ¹ | |
|-----------------------------------|-----------------------|--------------------------------|
| | Critical Structures | Structures for Human Occupancy |
| Ground Rupture | | |
| Across Known Active Fault | prohibited | prohibited |
| Elsewhere in Special Studies Zone | study required | study required |
| Liquefaction | | |
| In Identified Special Hazard Zone | study required | study required |
| Dam Failure | | |
| In Potential Inundation Path | prohibited | study required |
| Slope Failure | | |
| >30% in steepness | prohibited | prohibited |
| 10-30% in steepness | study required | study required |

Note:

1. Lifelines require special study in all cases. May require special design when located across known active fault.

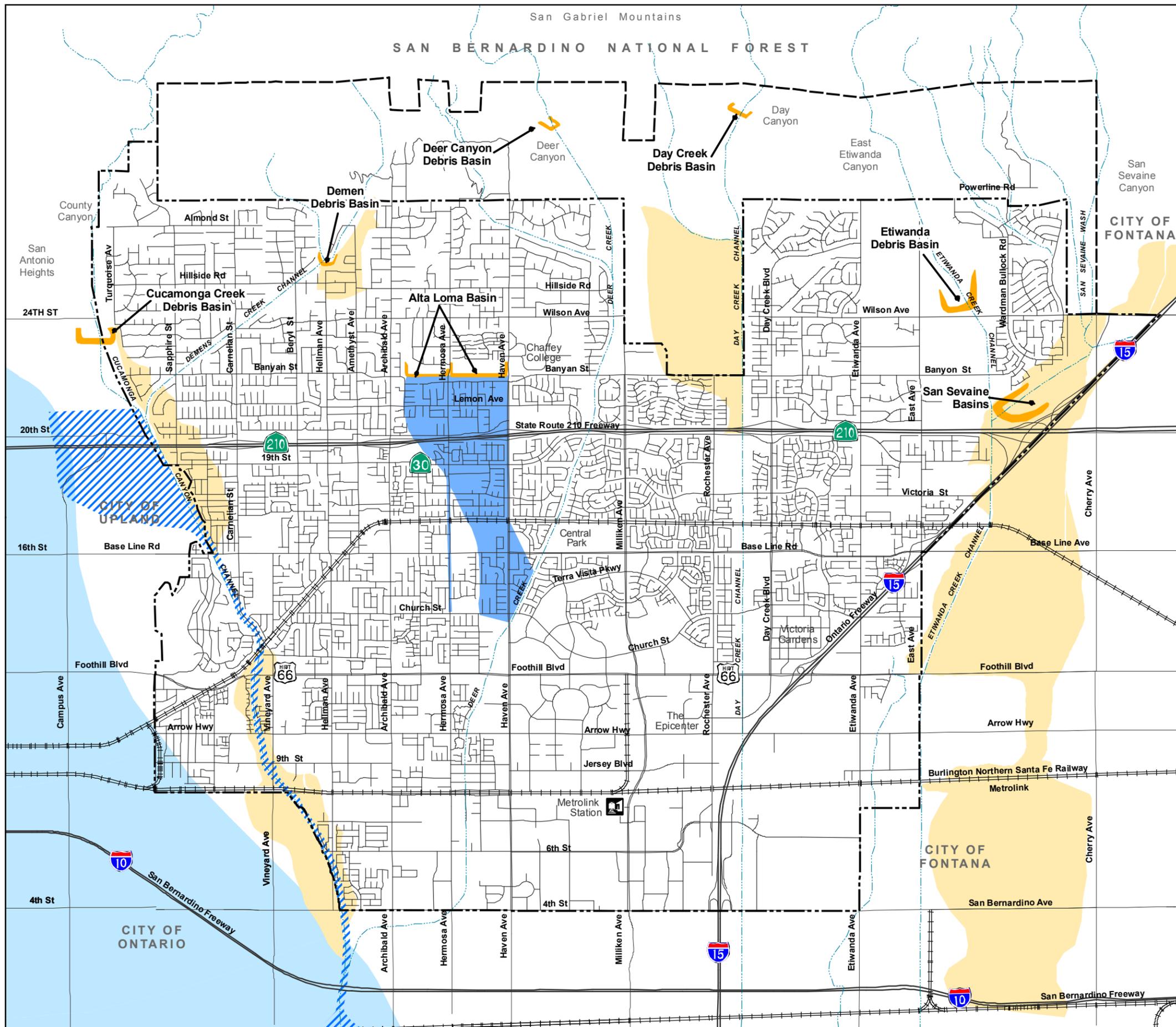
Wind Hazards

The City of Rancho Cucamonga has a history of extensive windstorms, often related to Santa Ana winds. The Santa Ana winds are strong, extremely dry offshore winds that characteristically sweep through the area in late fall and early winter. High winds can also result from thunderstorm inflow and outflow or high and low pressure systems moving through the region. High winds have speeds reaching at least 50 miles per hour, and can exceed 100 miles per hour. Wind events constitute one of the most frequent major hazards in the City. Not only do windstorms happen frequently; they can be costly in terms of property damage and can cause injury to people.

The winds affecting Rancho Cucamonga can damage structures, uproot trees, and create dust storms in the southern part of the City where the soil type is susceptible to wind erosion. Additionally, as the southern part of the City has shifted from agriculture to developed lands, the severity and frequency of dust storms has been reduced substantially.

An additional consideration, given the agricultural heritage of the community, is the impact of these winds on aging windrows that consist mainly of Blue Gum Eucalyptus trees. Where urban development has encroached upon these windrows, the potential for damage to structures or even injury to people is substantial. When windrows are not well maintained, the debris that accumulates around the trees is a fire hazard and a nuisance.

Rows of Eucalyptus trees (“windrows”) were originally planted as windbreaks to protect the citrus groves from the Santa Ana winds blowing through the canyons or the mountain passes.



- Inundation Areas**
- Dams/Catch Basins
 - Alta Loma Basin Inundation Area
 - Cucamonga Creek Inundation Area
 - 500-year Flood Zone Area Protected by Levee
 - San Antonio Dam Inundation Area

- Rancho Cucamonga City Boundary
- Sphere of Influence
- Waterways

Source: Rancho Cucamonga, 2001 and San Bernardino County Assessor, 2009.



Figure PS-6:
Dam Inundation Hazards

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While the strategies for minimizing this aspect of wind hazards are aimed primarily at the remaining windrows, these strategies apply to an increasing degree to any large trees that are part of the urban landscape. This is particularly true where inadequate planting and maintenance techniques have been practiced.

Aviation Hazards and Airport Compatibility Planning

LA/Ontario International Airport is a commercial jet service airport located in the City of Ontario. The airport is owned and operated by Los Angeles World Airports (LAWA). In 2008, over six million passengers departed from and arrived at the airport on over 124,000 commercial and general aviation flights. In addition, over 480,000 tons of freight moved through the airport.

The northern runway is located approximately one mile from Rancho Cucamonga's southern boundary. The airport's runway safety zones extend from both ends of the runways in the City of Ontario, but no aircraft safety zones affect Rancho Cucamonga. Departing planes primarily fly over Ontario and Montclair, and most commercial jet arrival flights cross Fontana and Ontario. Smaller private planes fly over southern Rancho Cucamonga as they take off and land, avoiding the jet aircraft flight patterns.

Section 21675(a) of the California Public Utilities Code requires that airport land use compatibility plans (ALUCPs) be based upon long-range Airport Master Plans adopted by the airport owner/proprietor or, if such a plan does not exist for a particular airport, an Airport Layout Plan may be used with the approval of the California Division of Aeronautics. Compatibility plans must also reflect the anticipated growth of the airport with a minimum 20-year horizon. Compatibility plans address aircraft noise, safety, airspace protection, and overflight notification based on existing and future airport operations and can place restrictions on building heights, types of land uses, and density of uses within the Airport Influence Area.

As of 2010, a master plan for LA/Ontario International Airport had not been prepared; however, master planning efforts initiated by LAWA in 2002 were suspended in late 2008 due to the national economic slowdown and decline in aircraft operations. In 2008, the City of Ontario initiated an update to the Airport Land Use Compatibility Plan (ALUCP) for LA/Ontario International Airport utilizing information from LAWA's master planning efforts. The City of Rancho Cucamonga and other neighboring jurisdictions that may be affected by operations at the airport participated and contributed towards development of the ALUCP.

Since LAWA discontinued master plan efforts for LA/Ontario International Airport, the City of Ontario submitted and received approval by the State Division of Aeronautics for a Composite Airport Layout Plan showing existing and proposed runway configurations for compatibility planning purposes. LAWA's 2008 master planning efforts for LA/Ontario International Airport proposed a reconfiguration of the runway system, shifting both runways south and east of their present positions. LAWA regarded this reconfiguration necessary to enable the runway system to accommodate SCAG's 2008 Regional Transportation Plan growth projections of 33.4 million annual air passengers and 3.2 million annual tons of cargo by 2030. Prior to any airfield reconfiguration and expansion at LA/Ontario International Airport, LAWA

must first complete the LA/Ontario International Airport Master Plan and required environmental review.

In the mid-1990s, California law was amended to streamline new development within Airport Influence Areas and allow cities and agencies to conduct their own airport consistency reviews through the Alternative Process, in lieu of an Airport Land Use Commission. In 1996, the County of San Bernardino elected to adopt the Alternative Process and delegate the responsibility for preparing an Airport Land Use Compatibility Plan, making airport consistency determinations for new development, and mediating land use disputes to local jurisdictions. Subsequently, in 1996 the City of Ontario adopted by resolution the Alternative Process and accepted the responsibility for compatibility planning around LA/Ontario International Airport, at a time when impacts did not extend outside the City of Ontario. Since then, on-going growth of the airport, future growth projections, and updated State compatibility planning standards have extended airport influence areas outside the City of Ontario. These factors have required the Alternative Process to be amended and include neighboring jurisdictions into the compatibility planning process.

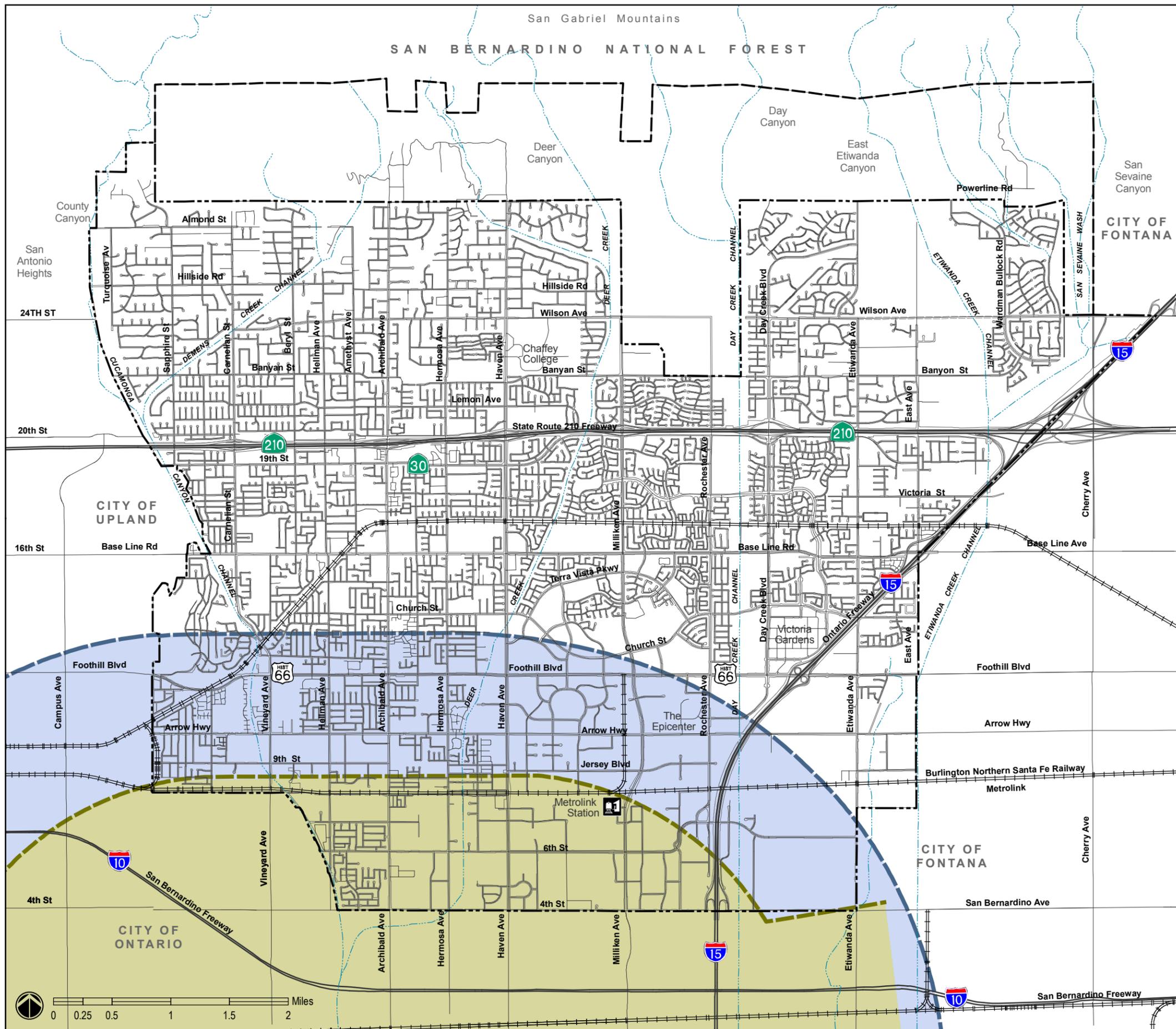
The amended Alternative Process will allow the City of Rancho Cucamonga to conduct its own consistency reviews for new development within LA/Ontario International Airport's Influence Areas. The Alternative Process establishes a Technical Advisory Committee (TAC) with membership from each affected jurisdiction. The TAC is intended to provide a coordinated approach to compatibility planning around LA/Ontario International Airport and include key stakeholders in the planning process. The TAC will also provide technical information, issue consistency findings, and be ambassadors to compatibility planning matters. Where possible inconsistencies arise between land use projects within the Airport Influence Area and the ALUCP, a mediation board will settle disputes.

Rancho Cucamonga has participated in the TAC process and ALUCP planning efforts. The City anticipates working with the TAC and member jurisdictions regarding future airport planning decisions that directly affect Rancho Cucamonga. The City recognizes the importance of the LA/Ontario International Airport and the economic benefits it provides to the entire region. However, the City wants to balance the growth of the airport with impacts associated with the airport on properties in Rancho Cucamonga. The City also looks to balance the need of protecting airport and aircraft operations with restrictions on land uses in Rancho Cucamonga that would affect the economic value of properties.

Airspace Protection

The Federal Aviation Administration (FAA) provides regulations regarding protecting airspace around airports. The FAA is concerned about the consequences that certain land uses, buildings, and associated activities can have on the airport and aircraft operations. Under Part 77 of the Federal Aviation Regulations (FAR), the FAA requires notice of proposed construction in excess of certain heights that may affect the safety of aircraft operations. FAR Part 77, Subpart B, requires that the FAA be notified of any proposed construction or alteration having a height greater than an imaginary surface extending 100 feet outward and one foot upward (slope of 100 to 1) for a distance of 20,000 feet from nearest point of any runway. Beyond the FAA Height Notification Area boundary, any object taller than 200 feet requires FAA notification.

Figure PS-7: Airspace Protection, identifies Part 77 surfaces within Rancho Cucamonga. The authority of the FAA in these matters extends only as far as issuing



Airspace Protection Areas

-  FAA Height Notification Area (1)
-  FAA Obstruction Surfaces (2)

Base Layers

-  City Boundary
-  Sphere of Influence
-  Waterways
-  Freeway
-  Roads
-  Railroads

Notes:

(1) Based on FAR Part 77, Subpart B, which requires that the FAA be notified of any proposed construction or alteration having a height greater than an imaginary surface extending 100 feet outward and 1 foot upward (slope of 100 to 1) for a distance of 20,000 feet from nearest point of any runway. Beyond FAA Height Notification Area boundary, any object taller than 200 feet requires FAA notification.

(2) FAR Part 77 Obstruction Surfaces: Based on FAR Part 77, Subpart C, which establishes standards for determining obstructions to air navigation.

Source: Ontario General Plan, Figure LU-6: Airport Environs, 2009; Exhibit 1-7, Compatibility Factors: Airspace. Mead & Hunt, Inc. 2009.



Figure PS-7:
Airspace Protection Areas

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a notice of hazard to air navigation. The FAA has no authority over local land use; limiting the height of structures falls upon the local jurisdiction. However, the responsibility of the results of FAA review should be taken into account by a jurisdiction prior to approving a project. The airspace protection component of the ALUCP will be based on Part 77.

FAR Part 77, Subpart C (Obstruction Surfaces) establishes standards for determining obstructions to air navigation. Further procedures and notification boundaries will be developed through the Airport Land Use Compatibility Plan or developed specifically by Rancho Cucamonga to be integral to its development review process.

Overflight Notification

Overflight notification is meant to inform potential buyers or tenants regarding the presence of LA/Ontario International Airport and potential impacts on property, particularly residential property. Consistent with the ALUCP, the City is committed to requiring notification to prospective buyers and tenants within the airport influence area of the impacts of aircraft overflight. Notification can be accomplished through an aviation easement dedication, recorded overflight notification (recorded deed), or real estate disclosure. Further procedures and notification boundaries will be developed through the Airport Land Use Compatibility Plan or developed specifically by Rancho Cucamonga to be integral to its development review process.

Air Quality, Atmosphere, and Climate

Each day, individuals inhale approximately 3,400 gallons of air. When we breathe in air, we also take in the contaminants that result from daily activities such as driving cars, burning fossil fuels, and manufacturing chemicals. Although air quality in Southern California has improved since the 1960s, even with the region's substantial economic expansion and population growth, further improvements are needed. The Southern California region still has some of the most polluted air in the nation.

In addition to human health concerns with regard to air quality, the daily activities are significant sources of carbon dioxide and other greenhouse gas emissions, which are the leading causes of global climate change. Global climate change, or global warming, is the increase in the average temperature of the Earth since the mid-twentieth century. As the global temperature increases, other likely effects include sea level rise, increases in the intensity of extreme weather events, species extinctions, and changes in agricultural yields.

Air Quality

Rancho Cucamonga lies in the northwest portion of the South Coast Air Basin and is at the foot of the mountain chain defined by the San Gabriel and San Bernardino Mountains. These mountain ranges direct air circulation and dispersion patterns. The combination of onshore wind patterns, mountain range barriers, and temperature inversions can trap air within the community and prevent the vertical dispersal of air pollutants.

South Coast Air Basin

Rancho Cucamonga is located within the South Coast Air Basin, a 6,000-square-mile area that encompasses Los Angeles County and the non-desert portions of Orange, Riverside, and San Bernardino Counties. Through the U.S. Clean Air Act (1970) and the California Clean Air Act (1988), both the State and Federal governments have established health-based Ambient Air Quality Standards (AAQS) for a variety of air pollutants. The South Coast Air Quality Management District (SCAQMD), created in 1976, is the regional agency authorized to develop and enforce air pollution control standards mandated by the Federal and State Clean Air Acts within the Basin. Rancho Cucamonga has continued to work with the SCAQMD and in accordance with the applicable Air Quality Management Plan to improve local and regional air quality.

Local Air Quality

SCAQMD monitors the air quality in the basin through a regional network of air pollution monitoring stations. The Basin is a “non-attainment” area for Federal and State air quality standards for ozone and State standards for particulate matter. At the monitoring station nearest to Rancho Cucamonga, ozone levels have consistently exceeded State and Federal standards. However, the number of days that ozone levels have exceeded State and Federal standards has been consistently decreasing each year. This can largely be attributed to State measures requiring newer vehicle models to emit fewer emissions. Particulate levels have also exceeded the State standards every year. Unlike ozone, suspended particulate levels have exceeded State standards at a relatively consistent level over the last five years.

Sources of Air Pollution

Motor vehicles represent the major source of regional emissions throughout the Basin and within Rancho Cucamonga. Efforts to reduce emissions from this source can result in significant improvements in air quality. In the past, national and regional land use patterns have inefficiently distributed housing, employment centers, and mass transit. This development pattern has led to excessive automobile usage and resulting air pollution. Many of the transportation-related pollutants (ozone, sulfur dioxide, and small particulates) are respiratory irritants and thus are a major contributing factor to rates of asthma. They are also associated with a higher incident and severity of respiratory symptoms, impaired lung function, and other health problems.

Sources of non-mobile air pollution include industrial/manufacturing uses, auto repair businesses, dry cleaners, and other businesses that regularly use chemical solvents. Common sources of fine particulate matter (PM10) include road dust, construction activity, grading, and fires (including fireplaces). Air pollution is significantly worse where air pollutants are concentrated, including energy-intensive industrial areas, high volume roads, diesel truck routes, rail yards, and sea ports.

Atmosphere and Climate

The scientific consensus is that global climate change is an increasingly acknowledged environmental problem and that it is caused as greenhouse gases are released into the atmosphere faster than the Earth’s natural systems can re-absorb them. Global climate change is likely to be one of the largest problems this generation faces.

A 2007 Supreme Court ruling confirmed that greenhouse gases qualified as pollutants and could be regulated by the EPA. The process of developing Federal regulations on greenhouse gas emissions is anticipated to begin in 2009/2010.

See the Resource Conservation Chapter for more information on energy and water conservation, green buildings, and sustainability to curb global climate change.

In response to these concerns, California enacted legislation in 2006 and 2008 that requires jurisdictions to comprehensively address how long-range plans will begin to reduce greenhouse gas emissions and help achieve statewide air quality goals. AB 32, the Global Warming Solutions Act of 2006, established a comprehensive program of regulatory and market mechanisms to achieve real, quantifiable, cost-effective reductions of greenhouse gas emissions. The law aims to reduce carbon emissions in California to 1990 levels by 2020.

SB 375, Redesigning Communities to Reduce Greenhouse Gases, passed into law in 2008, is implementing legislation for AB 32. This legislation endeavors to control greenhouse gas emissions by curbing sprawl (the unplanned, uncontrolled spread of urban development). The legislation encourages compact development patterns that reduce the need to drive, thereby reducing air pollution from car exhaust, conserving water, and protecting habitat, among other benefits. To achieve these goals, this law is designed to align regional land use, housing, and transportation plans with greenhouse gas reduction targets.

Without a reduction in greenhouse gas emissions, global changes affecting Rancho Cucamonga in the future could include:

- More frequent heat waves
- More extreme weather events
- More frequent and increased severity droughts
- Increased potential for tropical insect-borne diseases

Rancho Cucamonga recognizes the importance of reducing greenhouse gas emissions to preserve a high quality of life and safety for generations to come. Many actions undertaken by the City directly or indirectly improve air quality. These include building residential units near the Metrolink station, pursuing Mixed Use development, supporting transit use, development of bicycle routes and trails, and supporting the use of alternative fuel vehicles (AFVs) in the City's fleet and in the community. Considering air quality issues in the decision-making process will ensure that new development results in limited emission levels to the extent feasible. Rancho Cucamonga also leads by example, with sustainable building and operation processes for City government.

Transportation and energy production are among the leading activities associated with greenhouse gas emissions. As such, it is important to understand how the long-range planning decisions as well as daily activities can have implications on local air quality. As SB 375 indicates, air quality issues are intricately related to policies in the Managing Land Use, Community Design, and Historic Resources Chapter and the Community Mobility Chapter of the General Plan that reduce use of and dependence on automobiles. Implementation of sustainability policies throughout this General Plan will help minimize the City's contribution to global climate change.

Noise

Noise is commonly defined as intrusive or undesired sound. Excessive noise can be disruptive, be it from the continuous thrum of trucks traveling along a busy roadway or the whine of gasoline-powered leaf blowers on an otherwise quiet morning. Noise may interfere with communication, work, rest, recreation, and sleep, and can impact residents' quality of life. In extreme cases, excessive noise may produce

physiological or psychological damage. For all of these reasons, the City evaluates noise-generating sources and ambient noise conditions in land use planning and decision making.

This section provides policy direction for minimizing noise impacts on the community and for coordinating with surrounding jurisdictions and other entities regarding noise control. By identifying noise-sensitive land uses and establishing compatibility guidelines for land use and noise, noise considerations will influence the general distribution, location, and intensity of future land use. The result is that effective land use planning and mitigation can alleviate the majority of noise problems.

Noise Metrics

Sound intensity is measured and expressed by decibels (dB), with an adjustment referred to as the A-weighted measure (dBA) to correct for the relative frequency response of the human ear. Decibels are measured on a logarithmic scale, representing points on a sharply rising curve. For example, a noise level of 10 decibels is 10 times more intense than one decibel, 20 decibels represents a noise 100 times more intense, and 30 decibels reflects a noise condition 1,000 times more intense. A sound as soft as human breathing is about 10 times greater than a zero decibel level.

The decibel system of measuring sound gives a rough connection between the physical intensity of sound and its perceived loudness to the human ear. A 10-decibel increase in sound level is perceived by the human ear as only doubling of the loudness of the sound. Ambient sounds in the urban environment generally range from 30 dBA (very quiet) to 100 dBA (very loud), as indicated in Table PS-4: Typical Sound Levels.

Because people generally are more sensitive to noise intrusions during the evening and night hours, State law requires, for planning purposes, use of such metrics as the Community Noise Equivalent Level (CNEL) or Day-Night Noise Level (Ldn). These metrics add an artificial decibel increment to quiet time noise levels in a 24-hour noise descriptor to account for increased sensitivity during late hours. The CNEL descriptor requires that an artificial increment of 5 dBA be added to the actual noise level for the hours from 7:00 a.m. to 10:00 p.m., and 10 dBA for the 10:00 p.m. to 7:00 a.m. period. The Ldn descriptor uses the same methodology, except that no artificial increment is added to the hours between 7:00 a.m. and 10:00 p.m. Both descriptors yield roughly the same 24-hour level, with the CNEL being only slightly more restrictive (that is, higher).

| Noise Source at a Given Distance | A-Weighted Sound Level in Decibels | Example Noise Environment | Perception |
|----------------------------------|------------------------------------|------------------------------|----------------|
| Shotgun (at shooter's ear) | 140 | Aircraft carrier flight deck | Painfully Loud |
| Civil defense siren (100 ft) | 130 | | |
| Jet takeoff (200 ft) | 120 | | |

Table PS-4: Typical Sound Levels

| Noise Source at a Given Distance | A-Weighted Sound Level in Decibels | Example Noise Environment | Perception |
|--------------------------------------|------------------------------------|-----------------------------|----------------------|
| Loud rock music | 110 | Rock music concert | Very Loud |
| Pile driver (50 ft) | 100 | | |
| Ambulance siren (100 ft) | 90 | Boiler room | Moderately Loud |
| Pneumatic drill (50 ft) | 80 | Noisy restaurant | |
| Busy traffic; hair dryer | 70 | | |
| Normal conversation (5 ft) | 60 | Data processing center | Quiet |
| Light traffic (100 ft); rainfall | 50 | Private business office | |
| Bird calls (distant) | 40 | Average living room/library | Very Quiet |
| Soft whisper (5 ft); rustling leaves | 30 | Quiet bedroom | |
| Normal breathing | 20 | Recording studio | Threshold of Hearing |
| | 10 | | |

Source: Beranek, L.L. 1998. *Noise and Vibration Control*. Institute of Noise Control Engineering.

Effects of Noise

At 60 dBA, noise can impair a person’s ability to understand what someone else is saying, and sound levels over 40 to 45 dBA can disturb sleep. A person’s likelihood of hearing loss strongly increases at prolonged exposure to sound levels over 85 dBA.

The level of background (ambient) noise is the key factor used to determine whether a particular land use should locate in a particular location. In Rancho Cucamonga’s neighborhoods, residents expect to experience ambient noise conditions that allow them to conduct their day-to-day activities without interference from noise. Face-to-face conversations at a distance of about five feet can be conducted with relative ease where A-weighted noise levels are as high as 66 dBA. In conversations involving groups of people, the level of background noise needs to be between 50 and 60 dBA to allow people to hear each other.

With regard to sleep disturbance and noise, sleep generally follows similar patterns in people of all ages, from falling asleep, to deep sleep, to waking states, to in-between. The time spent in each state varies, but sound can interfere with any sleep stage. Although people can acclimate themselves to certain noises and sleep through them, quieter night-time noise levels generally are more conducive to restful sleep patterns, and as noted, residents expect their neighborhoods to be quiet at night.

Because of the ways that different people perceive noise, in any given noise environment a variety of reactions can be expected, ranging from serious annoyance to no awareness. As a general observation, studies have shown that if a noise problem is allowed to occur, a greater reduction in the noise level (ranging from five dBA to 10 dBA) is often necessary to appease complaints than would have been necessary if the noise had instead been addressed at the design stage. For this reason, the preferred approach regarding noise control is to address it early in the development process.

Noise Standards

The State of California's noise insulation standards are codified in the California Code of Regulations, Title 24, Building Standards Administrative Code, Part 2, California Building Code. These noise standards are applied to new construction for the purpose of providing suitable interior noise environments. The regulations specify that acoustical studies must be prepared when noise-sensitive structures, such as residential buildings, schools, or hospitals, are located near major transportation noise sources, and where such noise sources create an exterior noise level of 60 dBA CNEL or higher. Acoustical studies that accompany building plans must demonstrate that structures have been designed to limit interior noise in habitable rooms to acceptable noise levels. For new residential buildings, schools, and hospitals, the acceptable interior noise limit for new construction is 45 dBA CNEL.

City noise standards are included in the Development Code for each land use district. In addition, the City has adopted a Noise Abatement section of the Development Code (Section 17.02.120) that has special provisions for determining and addressing noise issues. Noise complaints are addressed on an individual basis.

Figure PS-8: Noise Compatibility Matrix generally reflects guidelines promulgated by the California Office of Noise Control. This matrix provides the City with an integral tool to gauge the compatibility of land uses relative to existing and future noise levels.

The Noise Compatibility Matrix allows for higher ambient noise levels for residential development within areas designated for higher density residential uses and Mixed Use. However, where Mixed Use is allowed in Rancho Cucamonga, and where residential neighborhoods directly interface with commercial development, such as along Foothill Boulevard, careful review of site design and operational characteristics of individual commercial uses will allow the City to address any site-specific noise concerns through design and operational conditions applied to individual projects.

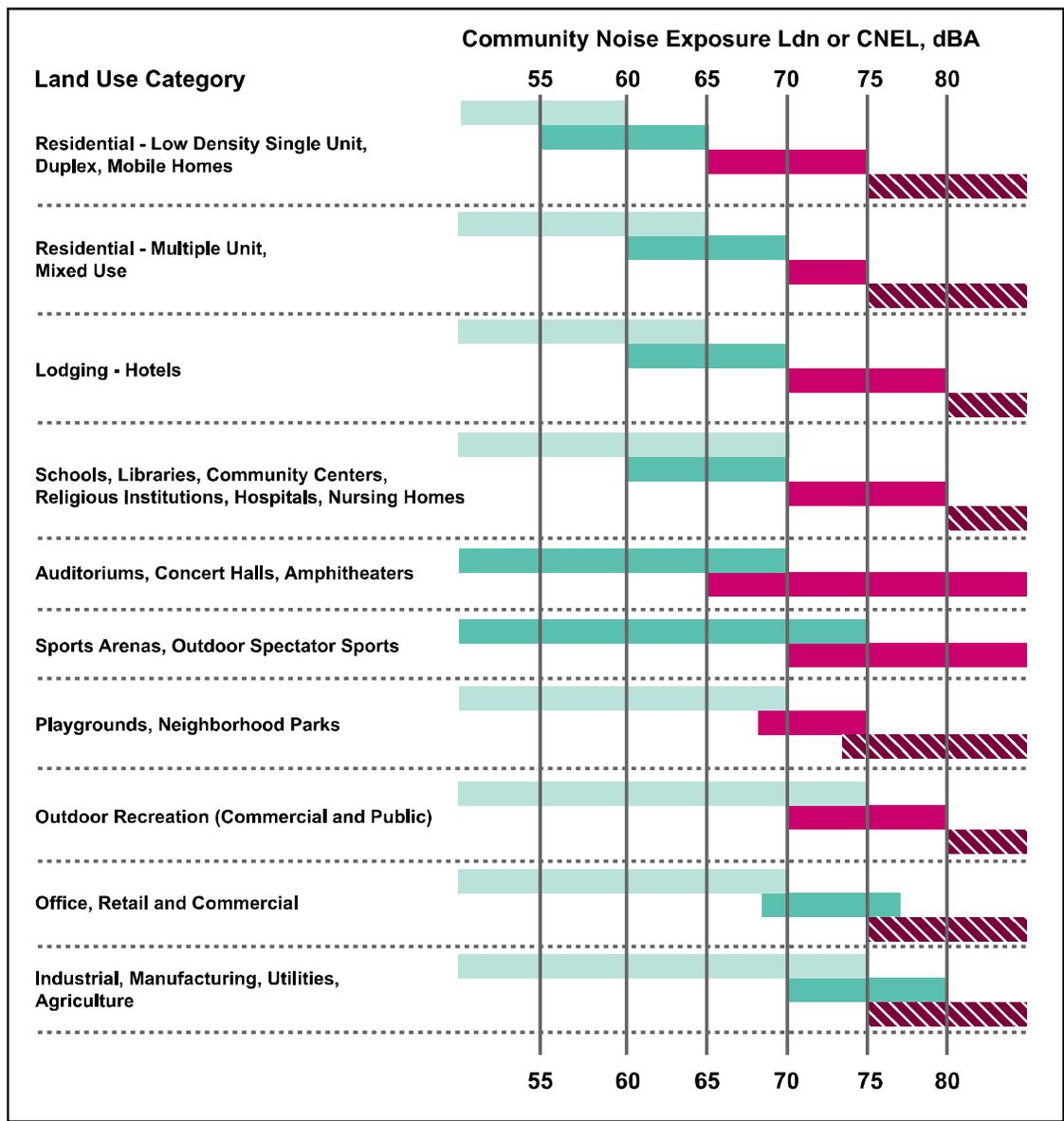
The Noise Environment

Noise Conditions - 2009

Noise surveys conducted in 2009 revealed that the ambient noise environment in Rancho Cucamonga largely is influenced by roadway noise (Figure PS-9: Existing Noise Contours - 2009). To a lesser degree, aircraft operations at LA/Ontario International Airport and trains contribute to noise conditions in the areas near these activities. Distinct truck, railroad, and aircraft noise are notable in the southern portion of the City.

Two types of noise sources are considered in the community noise inventory: stationary sources and mobile sources. Stationary sources include industrial and construction activities (including truck loading), playgrounds, outdoor sports facilities,

Figure PS-8: Noise Compatibility Matrix



Normally Acceptable
Specified land use is satisfactory based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.

Conditionally Acceptable
New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction but with closed windows and fresh air supply systems or air conditioning will normally suffice. Outdoor environment will seem noisy.

Normally Unacceptable
New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made with needed noise insulation features included in the design. Outdoor areas must be shielded.

Clearly Unacceptable
New construction or development should generally not be undertaken. Construction costs to make the indoor environment acceptable would be prohibitive and the outdoor environment would not be usable.

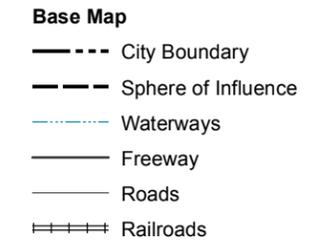
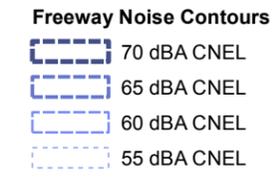
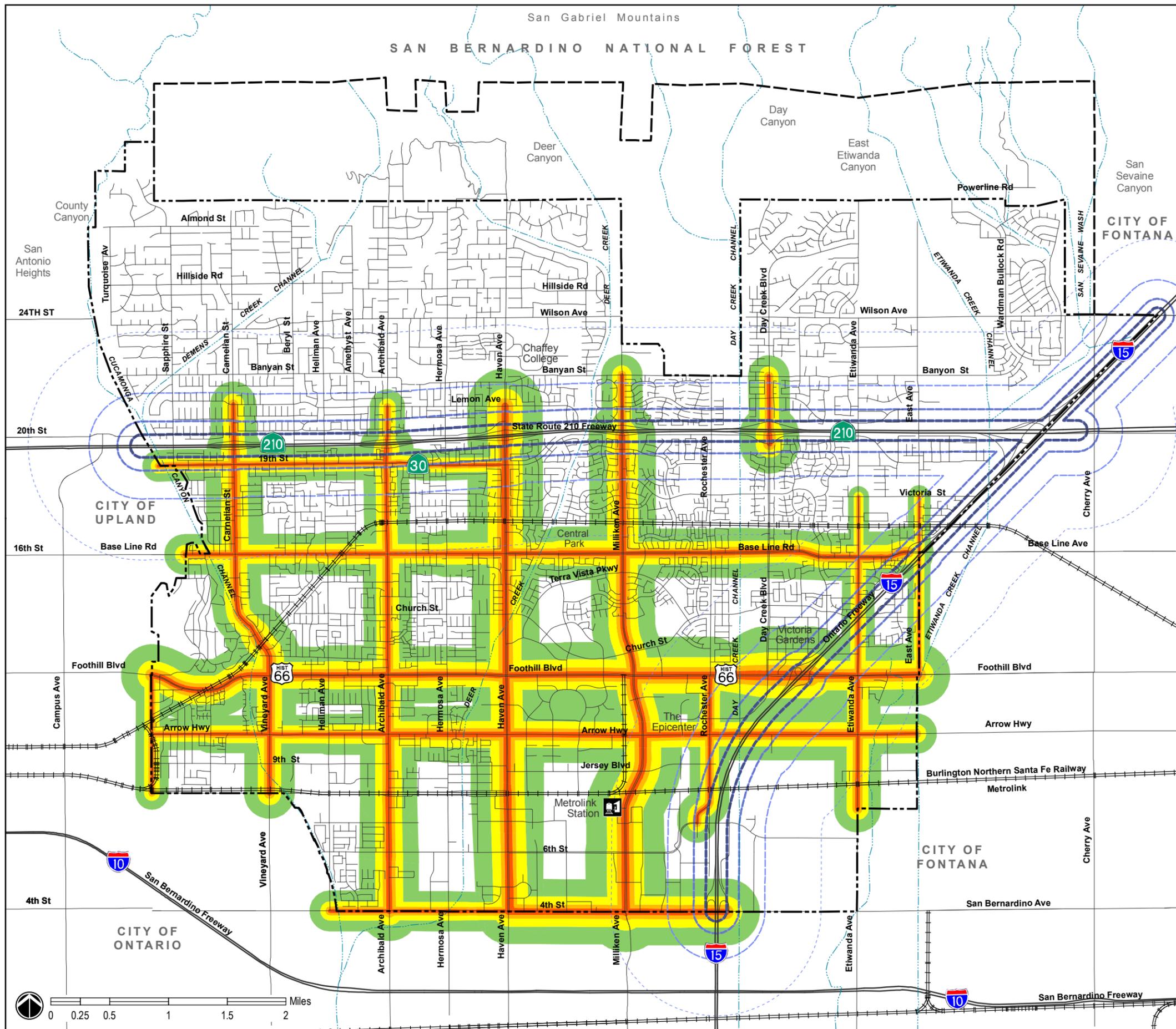
landscape maintenance equipment, construction activities, and the typical sounds heard in a residential neighborhood (power tools, barking dogs, etc.). Mobile noise sources refer to cars, trucks, motorcycles, buses, aircraft, and trains.

In Rancho Cucamonga, the key transportation corridors that contribute to ambient noise levels are I-15, SR-210, and the Metrolink rail line. Areas adjacent to freeways experience noise levels approximately 70 to 75 dBA CNEL. Sound walls along I-15 and SR-210 help alleviate some of the noise impacts from the freeways. Areas adjacent to the Metrolink railroad can experience levels of noise up to 71 dBA when trains are passing through. There are residential uses adjacent to the railroad immediately west of Haven Avenue. Land uses east of Haven Avenue generally consist of industrial uses, so train noise is not a major concern.

Vehicles traveling on Haven Avenue can generate noise levels up to 75 CNEL along the edge of the roadway.



Foothill Boulevard, Base Line Road, Haven Avenue, Milliken Avenue, Day Creek Boulevard, 19th Street, Archibald Avenue, Arrow Highway, and Vineyard Avenue/Carnelian Street are roadways in the City that carry significant vehicle volumes. Measurements taken in residential neighborhoods near these roadways in 2009 indicated that noise levels typically range from 60 to 70 dBA CNEL. Local traffic contributes considerably to noise levels throughout the City.



Note: The CNEL contours on this map do not take into account the effect of any noise barriers or topography that may affect ambient noise levels.

Source: Mestre Greve Associates, 2009.



Figure PS-9:
Existing Noise
Contours: 2009

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With regard to aircraft noise, the jet landing patterns at LA/Ontario International Airport are oriented east-west. Occasional aircraft noise can be heard in southern areas of Rancho Cucamonga. No noise contours over 60 dBA CNEL extend into Rancho Cucamonga. Jurisdictions that experience the brunt of airplane departure and arrival noise levels are Ontario, Fontana, and Montclair.

Future Noise Environment (2030)

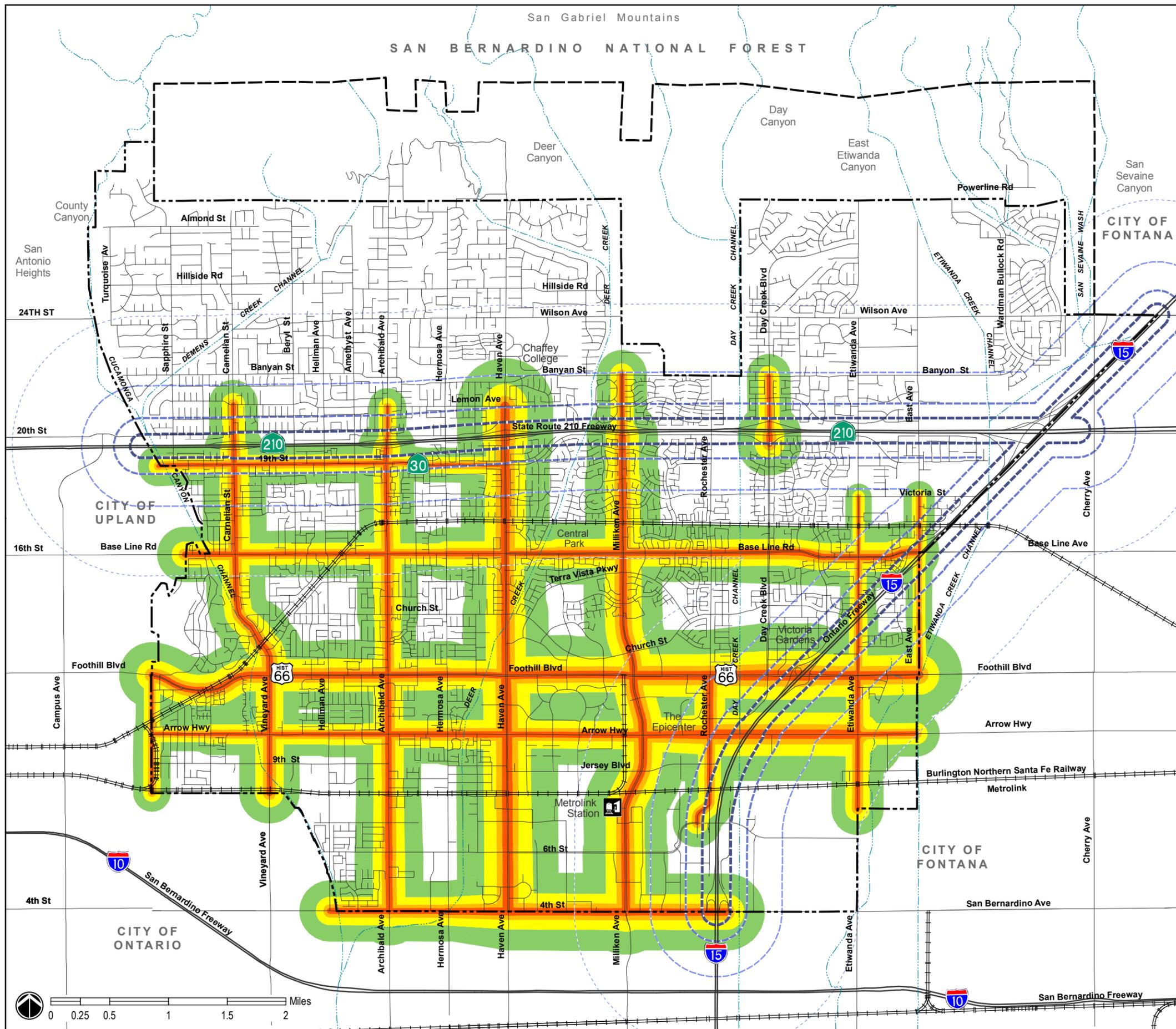
The projected noise exposure contours for year 2030 are indicated in Figure PS-10: Future Noise Contours - 2030. The future noise contours should be considered as a guide to identifying potential land use/noise compatibility issues and will be used to determine the requirement for project specific noise studies and mitigation. In comparison to the 2009 noise contours presented in Figure PS-9, future noise levels will increase, but not significantly. Noise level increases are projected to occur along Haven Avenue, Milliken Avenue, and Foothill Boulevard due to increased traffic volumes.

Public Health and Safety Issues

Key issues relative to public health and safety are:

- **Wildland Urban Interface Fires.** Rancho Cucamonga's location adjacent to the San Bernardino National Forest and San Gabriel Mountains puts it at high risk for Wildland Urban Interface (WUI) fires. This type of fire begins in the chaparral north of the City and can spread to structures in those areas and on the perimeter of the City.
- **Emergency Medical Services.** Rancho Cucamonga Fire Protection District (RCFPD) is the first responder to medical emergencies. EMS responses are the most common response made by RCFPD, and service demands have been steadily increasing. As the Rancho Cucamonga population ages, and new residents and employees locate here, the EMS program will continue to be impacted.
- **Emergency Management.** In the event of an emergency or natural disaster, it is important to have clear, up-to-date plans to expedite response. Public outreach and education regarding emergency preparedness is also crucial.
- **Hazardous Materials.** Releases of explosive, reactive, corrosive, toxic, and flammable materials can cause injury, life loss, and property damage and may necessitate evacuations. Emergency plans and trained personnel are necessary to adequately respond to hazardous materials emergencies.
- **Crime Prevention.** Rancho Cucamonga has set high standards for public safety and protection, and as a result is one of the safest cities of its size in the nation. To maintain these high levels of public safety, it will be important to continue to evaluate existing programs, meet response time goals, and support crime prevention through environmental design. In addition, involving the community in crime prevention programs is integral to the City's public safety success.

- **Seismic and Geologic Hazards.** The presence of multiple faults within and near Rancho Cucamonga poses a seismic hazard to residents and businesses in the City.
- **Flood Hazards and Inundation.** Rancho Cucamonga is a tributary to flood waters emanating from the San Bernardino National Forest and other unincorporated areas north of the City. The proximity to these areas necessitates a regional approach to responding to stormwater flows, debris and mudflows, and potential inundation from dam or catch basin failure. In addition, an increase in potential flood hazards may arise from future development in the City. As development occurs over open spaces, new infrastructure, pavement, etc. will decrease the amount of exposed permeable ground area that can absorb water. With this reduction of permeable ground, an increase in the amount of stormwater runoff will follow that must be controlled.
- **Wind Hazards.** The strength of windstorms in Rancho Cucamonga can damage structures, uproot trees, and create dust storms. Furthermore, high winds create public safety issues affecting traffic conditions and school operations as well as an increasing demand on fire and police services and the City's Emergency Operations Center.
- **Airspace Protection.** Operations at LA/Ontario International Airport can impact Rancho Cucamonga regarding safety and flight patterns. Potential development height restrictions and other development regulations could affect certain airport-influence zones in southern Rancho Cucamonga.
- **Overflight Notification.** LA/Ontario International Airport aircraft fly over Rancho Cucamonga. The City intends that prospective buyers and tenants within the airport area be notified to create awareness of the potential impacts of overflight.
- **Air-Quality.** Air pollutant levels in the community are frequently unhealthy, and Rancho Cucamonga must make an effort to reduce greenhouse gas emissions and curb global climate change. In addition, the complexity of air quality issues and the regional nature of the matter demands that the City work closely with other local and regional governments and agencies to ensure everyone does their part in improving air quality and curbing climate change.
- **Noise Impacts.** The most significant noise sources in Rancho Cucamonga – cars, trucks, trains, and airplanes – are beyond the City's regulatory control. However, the City can use land use planning strategies to minimize the effects of transportation-related noise. Heavier industrial business activities, specifically those within the industrial areas, generate noise levels that generally are incompatible with residential uses. Land use policies emphasize separation of such uses, and local regulatory controls can be used to minimize conflicts.



Noise Contours

- 70 dBA CNEL
- 65 dBA CNEL
- 60 dBA CNEL
- 55 dBA CNEL

Freeway Noise Contours

- 70 dBA CNEL
- 65 dBA CNEL
- 60 dBA CNEL
- 55 dBA CNEL

Base Map

- City Boundary
- Sphere of Influence
- Waterways
- Freeway
- Roads
- Railroads

Note: The CNEL contours on this map do not take into account the effect of any noise barriers or topography that may affect ambient noise levels.

Source: Mestre Greve Associates, 2009.



Figure PS-10:
**Future Noise
 Contours: 2030**

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Public Health and Safety Goals and Policies

The following goals and policies are aimed at providing guidance and policy direction regarding public health and safety in Rancho Cucamonga.

GOAL PS-1: Plan, promote, and demonstrate a readiness to respond and reduce threats to life and property through traditional and innovative emergency services and programs.

Policy PS-1.1: Reduce the loss of life, property, and injuries incurred as a result of fires by offering and supporting comprehensive fire prevention, public education, and emergency response programs.



Discussion: Fire hazards pose a threat to Rancho Cucamonga residents, especially in areas near the Wildland Urban Interface (WUI). Fire prevention is effective when it includes public education and appropriate land use restrictions, as well as adequate facilities and personnel to mitigate fires when they occur. The Fire District is expected to continually develop effective prevention and response strategies to address this constant risk.

Policy PS-1.2: Strive to limit loss of life and property as a result of wildland fires through adequate wildland fire protection services, education and enforcement of defensible space and brush clearance requirements, and wildland fire evacuation and preparedness plans.

Discussion: The dry vegetation north of the City is conducive to quick moving and high-heat fires that can spread rapidly and cause damage to structures and homes. Keeping brush and vegetation away from structures is critical to decreasing risks to these structures, and evacuation and preparedness plans are necessary to ensure that responses to wildland fires are coordinated and efficient.

The Fire District shall routinely assess the current threat to life and property in the WUI. Needs for improvements in response capability will be identified.

The City should also expand the existing education and warning system that can be activated following significant wildland fires on the hillsides above the City. Education efforts can include mailers to households in the affected areas, public meetings, and/or door-to-door education campaigns that inform the public of wildland fire safety tips and procedures.

Policy PS-1.3: Continue to provide high-quality patient care with cross-trained firefighter/paramedics and emergency medical technicians. Improve the level of patient care in the community through the development and implementation of innovative emergency medical service delivery strategies.

Discussion: Rancho Cucamonga enjoys a high level of Emergency Medical Services as provided by the RCFPD. However, the service demands on the City's Emergency Medical Services (EMS) program have increased steadily over the years. The EMS program will be further impacted by growth factors including continued construction of new housing developments, additional senior housing, assisted living and skilled nursing facilities, accidents and collisions related to SR-210 and the I-15 freeways, and visitors to the various recreational venues and expanding retail centers.

Policy PS-1.4: Work with the Police Department to expedite the investigation of fires associated with arson.

Discussion: Arson is a violent and dangerous crime against property and people. Arson can be especially dangerous when applied to the wildland areas near Rancho Cucamonga. Recent extremely damaging fires, including the Old Fire (2003) in San Bernardino and the Los Angeles County Station Fire (2009), were set by arsonists. Rancho Cucamonga will expedite and cooperate with all arson investigations to help bring arson culprits to justice.

Policy PS-1.5: Promote a high quality of life and safety for all residents with community safety education campaigns and comprehensive fire and injury prevention programs.

Discussion: Public education programs are an important component of emergency preparedness. The City will continue educating the community regarding safety hazards and tips to protect residents in case of emergencies.



Policy PS-1.6: Minimize life and property loss and injuries by maintaining a comprehensive technical rescue program.

Discussion: The RCFPD has a Technical Rescue team trained in performing rescues in special and difficult circumstances. The Team is trained in confined space rescue, trench rescue, building collapse and shoring, swift water rescue, high angle rope rescue, and large animal rescue. Most of the Team's calls require rope rescue usually in the steep foothills of the District.

The Technical Rescue Team is certified as a Heavy Level Rescue and was the first Heavy Level Team in San Bernardino County. Additionally, the Technical Rescue Team is part of the California State Office of Emergency Services System, which allows for the Team to be activated throughout the State if needed.



Policy PS-1.7: Foster a supportive relationship with businesses and citizens regarding Fire inspections and Code Enforcement programs.

Discussion: Proper building construction and built-in fire protection (including sprinklers) significantly reduces the risk of damage and large-scale urban structure fires. As such, it is imperative to enforce codes and regulations through inspections and public education.

Policy PS-1.8: Improve the professional standards and operational readiness of fire department personnel through modern training techniques, professional development, and fitness programs.



Discussion: Maintaining RCFPD services is critical to protecting the health and welfare of the City and its residents. Rancho Cucamonga must continue to be proactive in the training of personnel and the use of the latest technologies and techniques to protect the community from harm.

Policy PS-1.9: Require adequate water supply and fire flow throughout the City to meet fire demand during times of peak domestic water demand through a cooperative relationship with the Cucamonga Valley Water District.

Discussion: There is currently an adequate water supply and flow to meet the needs of Rancho Cucamonga. The City needs to maintain this level to meet RCFPD demands in the event of an emergency and to provide the highest level of service to the community. As the City's population increases, it will be particularly important to extend and improve the water system commensurate with new development. Preventative maintenance of water lines, hydrants, and reservoirs must be continued.

Policy PS-1.10: Review and determine needs for future system improvements when indicated by key performance measures.

Discussion: The fundamental strategy of the RCFPD Strategic Plan is to provide appropriate Fire Station location (distribution) and staffing in order to effectively handle various emerging service demands (concentration). It is crucial that a properly equipped and staffed fire department resource arrive at the scene quickly to initiate action in the event of an emergency. While statistics may indicate more frequent demands in certain parts of the community, a serious fire or life-threatening emergency can and does occur at any place, any time, throughout the community. Therefore, it is a goal that all areas of the community can be reached within the timeframe established by the adopted service goals within the Fire Strategic Plan. As the community continues to change and develop, reviewing the Strategic Plan goals to ensure that response time remains consistent is necessary.

Policy PS-1.11: Coordinate, plan, and manage a comprehensive capital improvements program for expansion and improvement of fire and life safety services in response to the needs of a growing community.

Discussion: The 2005 RCFPD Strategic Plan outlines a series of recommendations to maintain high service levels. In order to develop a plan to expand and improve the response system and maintain high levels of service, a comprehensive capital improvements program will be necessary.

GOAL PS-2: Strive to maintain the appropriate level of community preparedness for natural and human-caused disasters and threats.

Policy PS-2.1: Support an appropriate level of individual and community preparedness.

Discussion: Rancho Cucamonga supports a strong, ongoing program of emergency preparedness that includes comprehensive All-Hazard Emergency Planning and Preparedness by the RCFPD. Public education regarding what to do in the event of a disaster, fire prevention, and steps to take during medical emergencies are also important components of emergency preparedness.

Policy PS-2.2: Maintain the Emergency Operations Center to enhance community safety.

Discussion: The City's new Emergency Operations Center (EOC) opened in 2005. A centralized and permanent location, the EOC provides a place to concentrate response activity in the event of a disaster.

Policy PS-2.3: Identify public facilities and critical infrastructure to be protected, and take action to prepare and respond effectively to emergencies.

Discussion: Parks and other community facilities can serve as sites for emergency operations and shelters in the event of a disaster. Future design and improvements of these facilities should accommodate emergency functions. Critical infrastructure and facilities, as identified in the Hazard Mitigation Plan, include the City's fire and police stations, schools, utilities, and local government buildings. These facilities were deemed "critical" due to their importance in the day-to-day operations of the City or for their role in response to a disaster.

Policy PS-2.4: Regularly review and update emergency plans that are in place in the event of emergencies and/or disasters.

Discussion: The City's Emergency Management Program, as managed by the RCFPD, is responsible for maintaining and updating the City's emergency plans, including the Hazard Mitigation Plan and Emergency Operations Plan. These documents should be updated regularly, to be "living" documents that change with the City's needs as it continues to evolve and develop.

Policy PS-2.5: Develop plans for short-term and long-term disaster recovery.

Discussion: Well planned and executed post-disaster recovery can help existing businesses survive, help residents stay in the community, and restore normalcy quickly after a disaster. The City has a responsibility to be prepared in advance to conduct community recovery efforts as efficiently and wisely as possible. The Multi-Hazard Disaster Plan does not address long-term recovery. Future recovery plans should ensure that buildings are rebuilt safely, and establish a process for rebuilding quickly.

Policy PS-2.6: Continue to coordinate automatic mutual aid agreements with Federal, State, local agencies, and the private sector to establish responsibility boundaries, joint response services, and multi-alarm and station coverage capabilities.

Discussion: Mutual aid agreements with Federal, State, local agencies, and the private sector will be critical in the event of a worst-case earthquake scenario along the Cucamonga Fault. There is a Mutual Aid Plan in place, which sets up contingency plans for assistance and cooperation in the event of a large scale disaster or emergency. The City will continually maintain such mutual-aid agreements to ensure maximum assistance in the event of a major emergency.

GOAL PS-3: Protect City residents, businesses, and employees from the potential hazards associated with the use, storage, transport, and disposal of hazardous materials in and through Rancho Cucamonga.

Policy PS-3.1: Continue to coordinate hazardous material planning and appropriate response efforts with other City departments, as well as local, County, and State agencies to further improve readiness to mitigate local impacts resulting from hazardous material-induced emergencies.

Earth

Discussion: The City takes part in a comprehensive effort with the State, County, and other jurisdictions to identify and manage hazardous materials and to respond to hazardous materials accidents. Because hazardous materials may spread beyond jurisdictional boundaries, it is important to maintain cooperative relationships so that mitigation can quickly be implemented.

Policy PS-3.2: Identify and regulate businesses that handle hazardous materials in Rancho Cucamonga.

Discussion: Both the Federal government and the State of California require all businesses that handle more than a specified amount of hazardous materials or extremely hazardous materials to submit a business plan, report releases of toxic chemicals, and report off-site transfers of waste to another location. The City is committed to supporting and strengthening this effort through local code enforcement actions, penalizing repeat violators of regulations, and conducting annual fire inspections to confirm the accuracy of information provided by businesses that handle hazardous materials.

Policy PS-3.3: Educate residents and businesses about proper disposal methods of household hazardous waste, and the availability of less toxic materials that can be used in place of more toxic household materials.

Earth

Discussion: Most victims of chemical accidents are injured at home, according to the Office of Federal Emergency Management Assistance (FEMA). Most of these accidents result from carelessness or lack of knowledge regarding household hazardous and flammable materials. It is important for the City to continue to provide additional information and resources to encourage proper disposal and handling of hazardous materials and also encourage the reduction of hazardous material use. A permanent drop-off facility for household hazardous waste is located at a San Bernardino County facility within the City and is staffed by personnel who have been trained in procedures for handling the waste.

GOAL PS-4: Provide a high level of public safety services throughout Rancho Cucamonga.

Policy PS-4.1: Regularly evaluate Police Department programs and make adjustments as needed to respond to the changing needs of the community.

Discussion: The Police Department provides a variety of services and programs that go beyond responding to emergencies associated with traffic accidents and crimes. The Solution Oriented Policing (SOP) Unit employs a range of innovative law enforcement and crime prevention programs. Volunteer and community based policing programs are also important to maintain. The City recognizes the value of each of these police programs, and encourages continued success through regular evaluation of these programs.

Policy PS-4.2: Maintain, and improve where feasible, police response times to all calls for service and require that a minimum four-minute response time is maintained for emergency calls.

Discussion: Response times to emergency and non-emergency calls are impacted by a number of factors including population growth, traffic patterns, location and number of stations, and number of officers on duty. The Police Department should continue to conduct an annual response time analysis that determines if response time problems are encountered and how adjustments in services should be made to correct any deficiencies. This analysis should also consider new and proposed development in the City.

Policy PS-4.3: Continue to promote neighborhood watch programs for residential areas aimed at empowering neighborhoods to watch for and report any suspicious activity.

Discussion: Neighborhood Watch programs have proven to be very effective in creating both the reality and sense of security desired by residents. Continued efforts by the Neighborhood Watch, along with physical design strategies and strong police responsiveness, ensure an ongoing low crime rate in the community.

Policy PS-4.4: Promote existing crime prevention programs for commercial and industrial areas.

Discussion: Security from crime is a major concern in the business community, in part because of the daily time periods during which so many of the business entities are closed or have limited use. Larger developments typically have either a dedicated or contracted security service to augment police services. Smaller developments may not and, in such cases, a cooperative program similar to a residential neighborhood watch system could be of value.

Policy PS-4.5: Encourage the continuation of volunteer public safety forces, including a police reserve unit, citizen’s patrol, equestrian patrol, and the Explorer Program.

Discussion: The City has a number of volunteer, community based policing programs including the Law Enforcement Explorer Program, Citizen’s Patrol, Bicycle Enforcement Team, Reserve Police Officers, and Equestrian Citizen Patrol Programs. These volunteer forces free up valuable police assets and serve to strengthen the community by actively involving citizens in day-to-day police activities.

Policy PS-4.6: Utilize the principles of Crime Prevention Through Environmental Design (CPTED) during the review of development projects.

Discussion: In order to incorporate safety and security into the design of the built environment, the City’s design review process takes into consideration CPTED principles. Projects are promoted that reduce crime by providing maximum visibility for pedestrian pathways, channeling movement and creating clear movement patterns, providing territorial reinforcement, and supporting continued maintenance of properties.

GOAL PS-5: Minimize the potential damage to structures and loss of life that may result from earthquakes and other seismic hazards.

Policy PS-5.1: Require geological and geotechnical investigations in areas of potential seismic or geologic hazards as part of the environmental and developmental review process for all structures proposed for human occupancy.

Discussion: Figure PS-2: Fault Hazard Map, identifies the locations of the existing and proposed expansion of Alquist-Priolo Earthquake Fault Zones. Consistent with this exhibit, the City proposes to include recently discovered splays of the Cucamonga fault in the northwestern portion of the City within the Alquist-Priolo Earthquake Fault Zone and adopt another Alquist-Priolo Earthquake Fault Zone for the remainder of the Red Hill Fault.

In Rancho Cucamonga, the Alquist-Priolo Fault Zone requirements are applied to all proposed structures for human occupancy, whereas State law only requires that requirements are applied to projects of four or more units. Within the buried/uncertain segment of the Red Hill Fault, a Potential Zone will be created where special geologic investigations will be required for all essential and critical facilities to demonstrate the site is not threatened by surface displacements from future earthquakes. Critical facilities include fire stations, schools, hospitals, dams and flood control structures, bridges, communication centers and other facilities that are needed during an emergency or would pose unacceptable safety risks to the community if severely damaged.

Policy PS-5.2: Establish minimum setbacks for any structure proposed for human occupancy within the Special Studies Zones identified on the Fault Hazard Map, based on minimum standards established under State law and recommendations of the project geologist and City Engineer.

Discussion: Setbacks recommended for active faults in the City can never be less than 50 feet on either side of the zone of deformation, and should be based on the recommendations of the project geologist and City Engineer. In the case of low angle faults, such as the Cucamonga Fault, asymmetric setbacks are common because the upper plate contains fractures and displacements at greater distances from the main fault trace. Setbacks of 100 feet or more may be necessary in certain areas. In the case of critical facilities, setbacks from potentially active faults are required under State law.

Policy PS-5.3: Promote the strengthening of planned utilities through the Cucamonga Valley Water District's Master Plan, the retrofit and rehabilitation of existing weak structures and lifeline utilities, and the relocation or strengthening of certain critical facilities to increase public safety and minimize potential damage from seismic and geologic hazards.

Discussion: The aging of older, weaker structures increases the risk of hazards resulting from earthquakes. As such, attention should be directed to the existing public utilities and critical facilities that are vulnerable in the event of a major earthquake in the City. This includes certain water storage reservoirs in the community operated by CVWD, San Antonio Community Hospital in Upland, and possibly existing debris basins. The City Building Official requires that critical structures within the City be designed to remain functional following the maximum credible shaking of the structure at the site.

Policy PS-5.4: Continue to encourage the retrofit of unreinforced masonry buildings and identify other potentially hazardous buildings.

Discussion: As required by State law, the City of Rancho Cucamonga has adopted an ordinance aimed at retrofitting unreinforced masonry buildings. Although retrofitted buildings may still incur severe damage during an earthquake, the mitigation results in a substantial reduction in the numbers of casualties by preventing collapse of the building. State law also encourages the identification and mitigation of seismic hazards associated with other types of potentially hazardous buildings, including pre-1971 concrete tilt-ups, soft-stories, mobile homes, and pre-1952 single family structures.

Policy PS-5.5: Continue to incorporate the most recent seismic safety practices into City codes and project review processes.

Discussion: As a result of experience in recent earthquakes, as well as extensive research under the National Earthquake Hazard Reduction Program (NEHRP), seismic codes have been significantly modified. Two significant changes are (1) a revision of soil types and amplification factors, and (2) incorporation of proximity of earthquake sources as a critical risk factor. Both changes impact the City, as the Cucamonga Fault is within 6.2 miles of most of the City. The City is committed to implementing improvements to building codes that will improve public safety related to seismic and other hazards.

Policy PS-5.6: During the environmental and developmental review process, promote alternative project designs that incorporate low-intensity land uses in areas determined to have significant seismic or geologic constraints.

Discussion: Much of the Cucamonga Fault Zone in the Sphere of Influence area consists of open space, conservation lands and limited hillside residential development. The newly discovered scarps in the northwestern corner of the City impact very low-density residential uses. These types of land use designations are commonly acceptable for fault zones throughout California, provided that careful, peer-reviewed fault studies are performed in conjunction with proposed projects. These designations allow for the positioning of greenbelts, trails, and roads along the active fault segments, while still allowing productive use of the property.

Policy PS-5.7: Promote public awareness of seismic and geologic hazards within the City by requiring property transfer notifications.

Discussion: The Cucamonga fault scarps control the geologic character of the foothills. A significant number of forest service roads and community trails follow along these scarps. The City also supports improving the visibility of hazard declaration statements on subdivision tract, parcel, and zoning maps; and requires property owners to sign a notice confirming their awareness and waiver of mitigated or unmitigated risk identified in engineering, geologic, or geotechnical investigation reports. Agents and sellers of real property that is located within an Earthquake Fault Zone must disclose to any prospective purchaser that the property is within an Earthquake Fault Zone pursuant to the requirements of the Alquist-Priolo Act.

GOAL PS-6: Minimize the potential damage to structures and loss of life that may result from geologic hazards.

Policy PS-6.1: Continue enforcement of the Hillside Development Guidelines to allow for prudent development and redevelopment of all properties located on slopes greater than 10 percent, and continue to preserve as open space properties located on slopes greater than 30 percent.

Discussion: The most effective way to protect lives and property from debris flows and slope instability is to continue to prohibit development on property that exceeds 30 percent in slope, in accordance with current ordinances. In addition, property having a natural slope between 10 and 30 percent can be made unstable by development and grading activities. Hillside development guidelines enforce the existing grading standards and require aesthetic treatments that both improve the appearance of the hillsides and preserve the stability of the slopes. These measures include returning slopes to their natural appearance, density reduction, clustering of developments, and steepness after grading. Environmental preservation of the eastern San Gabriel Mountains is also required to reduce debris flow potential. Development of the hillside terrain will only increase the potential for debris flows to damage the City unless the situation is carefully managed.

Policy PS-6.2: Support mitigation of existing development and private development projects located on potentially unstable hillside areas, especially slopes with recurring failures, where City property or public right-of-way is threatened from slope instability, or where considered appropriate and urgent by the Engineering, Fire, or Police Departments.

Discussion: Areas most susceptible to falling rocks are located below steep, resistant outcrops of relatively cohesive materials that underlie much of the northern Sphere of Influence. The hazard from falling rocks in this area is considered high for hillside development, as well as for development located adjacent to steep slopes. Areas adjacent to stream and storm channel systems, where adjacent properties may be affected by erosion and undercutting during significant storm events, are also prone to slope instability. Foundations adjacent to stream channels shall be setback from erosion and undercutting hazards based on a determination of the project soils engineer and the City Building Official. Much of the City is vulnerable to debris flows and floods from the streambeds draining from the San Gabriel Mountains. As a result, extensive man-made controls have been constructed to reduce the impact of these events on the City. Most often, the impact to the City will be boulders and mud transported onto roadways. Occasionally, catastrophic debris flow events occur. The greatest San Gabriel Mountain debris flow events of the twentieth century occurred in 1934, 1938, 1969 and 1977, but there is generally a destructive event each decade.

Policy PS-6.3: Enact a geologic disaster recovery ordinance for use following severe winter storms that cause extensive landslide or erosion damage.

Discussion: To efficiently recover after a geologic disaster, plans must be in place. The disaster recovery ordinance could identify authorities and powers of different City officers, distribution of responsibility and accountability, authorization of extraordinary procedures for streamlining repair permit issuance and simplifying public notices, interim joint powers, and contract procedures. The ordinance should also address criteria for establishing building moratoria, standards for expedited repair permit processing, criteria for restoration of standard operating procedures, and organization for planning and implementation of long-term reconstruction and redevelopment programs.

GOAL PS-7: Provide adequate and appropriately designed storm drainage and flood control facilities to minimize the risk of flooding.

Policy PS-7.1: Continue to upgrade and expand the flood control system so that the community is protected from flooding.

Discussion: The City currently collects flood control fees from developers to upgrade the City's drainage system. The fees are used to expand the system, in accordance with the City's Drainage Master Plan. Developers may be reimbursed for previous contributions beyond their project needs. Areas of the community that are deficient should be prioritized for upgrade based upon the level of risk posed to the public. In addition, the City will continue to utilize other funding mechanisms, such as funds from the City's Redevelopment Agency, to construct needed flood control improvements.

Policy PS-7.2: Continue to maintain and improve the City's flood control system and upstream tributary areas.

Discussion: The flood control facilities are part of an integrated system that provides regional flood control improvements through the San Bernardino County Flood Control District and localized improvements through the City. Rancho Cucamonga will continue to collect flood control fees for both the County and City to ensure that individual development projects, and the City as a whole, are adequately protected from flooding. In addition, the City will continue to participate in the regional Zone 1 Advisory Committee meetings to ensure that City concerns are addressed.

Policy PS-7.3: Provide input on the level of development intensity and conservation practices within the City's Sphere of Influence area and the San Bernardino National Forest.

Discussion: The flood control system is designed to accommodate a particular level of runoff. Runoff is influenced by the use of the land, including new development. The City is tributary to stormwater runoff and its associated debris and mud flows from the unincorporated area and San Bernardino National Forest to the north. Changes in conservation practices that would increase erosion or allow increased development would affect the City's flood control system. Reviewing proposed plans and programs under the County of San Bernardino's jurisdiction and the National Forest Service jurisdiction will allow the City to determine if proposed projects will significantly affect the ability to provide adequate drainage protection.

Policy PS-7.4: Maintain structural and operational integrity of essential public facilities in the event of a flooding hazard, and locate new essential public facilities outside of flood hazard zones.

Discussion: Essential public facilities such as hospitals, health care facilities, emergency shelters, fire stations, emergency command centers, and emergency communication facilities should be protected from flood hazards and not be located in flood hazard zones. Construction methods or other methods to minimize damage during a flooding event should also be incorporated if facilities are located in a flood hazard zone.

Policy PS-7.5: Continue cooperative working relationships among public agencies with responsibility for flood control.

Discussion: Rancho Cucamonga Engineering and Public Works Departments, which are responsible for the localized storm drain facilities, continue to maintain a working relationship with the San Bernardino County Flood Control District, which is responsible for regional storm drain facilities.

Policy PS-7.6: Apply a minimum level of acceptable risk standard during the project review phase for new development and improvements to existing development in potential inundation areas and require mitigation to the satisfaction of the Engineering Department and other responsible agencies.

Discussion: The City has been exposed to high peak water flows emerging from the mountain streams of the San Gabriel Mountains. Records from stream gauges at Cucamonga Creek and Day Canyon from the late 1920s to early 1970s indicate that the all-time peak flow occurred on January 25, 1969. Critical structures are prohibited in potential inundation paths, and structures for human occupancy require special studies.

GOAL PS-8: Minimize the risks associated with wind hazards.

Policy PS-8.1: Notify all developers, particularly those of multi-story or critical structures, of potential impacts resulting from Santa Ana Winds, and require appropriate structural and design treatment.

Discussion: Rancho Cucamonga addresses the problems associated with high winds and gust conditions in a preventative manner wherever possible. Building orientation and profiles, window placement, landscape treatment and irrigation, and similar design and engineering considerations can reduce the vulnerability of buildings, their occupants, and their visitors to the impacts of high winds. The City seeks to raise the level of consciousness regarding this risk so that preventive measures can be taken.

Policy PS-8.2: Investigate the use of building materials that are effective in withstanding the impacts of high winds and keep the development community apprised of these findings.

Discussion: Rancho Cucamonga sets a high standard for design, including building construction and materials. The City's Building Code design standards are more demanding than that of other cities in the area, and the construction approved over the years is solidly built, utilizing contemporary building materials and technology. Rancho Cucamonga endeavors to be on the leading edge of knowledge regarding new building technology or materials that would make structures less vulnerable to wind damage.

Policy PS-8.3: Require agricultural operations and new construction to comply with City provisions for preventing soil erosion and excessive generation of dust where the property is vulnerable to these conditions.

Discussion: In designated Soil Erosion Control Areas or other areas determined by the City to be particularly vulnerable to the impacts of high wind conditions, the dispersal of dust and debris must be controlled. It is not only a disruption for other property owners and citizens, it can also be a true hazard to people and property. Through proper management of construction activities, randomly wind-blown materials will be kept to a minimum. A particular concern is the impact of blowing dust and debris on sensitive uses, such as hospitals or convalescent homes, rehabilitation hospitals, schools, and other places of public gathering. Grading and construction inspection diligence is necessary to ensure that dust control programs are being complied with.

Policy PS-8.4: Enforce contemporary dust control provisions in the City's Development Code.

Discussion: Current practice includes several methods for managing dust control on parcels with soils that are particularly vulnerable to dispersal by high winds. These methods may apply to project sites smaller than those designated by the Agricultural Commissioner. In those cases, City specifications will prevail and a dust control plan will be part of the permit process. The City endorses those methods and seeks to continually maintain regulations that are at the leading edge in this area. Typical techniques include, but are not limited to, pre-watering and irrigation, maintaining vegetative cover on idle lands, and use of soil stabilizers.

Policy PS-8.5: Enforce regulations that require the proper management of windrows and other landscape elements to limit the damage caused by falling branches or uprooted trees resulting from high winds.

Discussion: It is each landowner's responsibility to manage the landscape elements on his/her property, whether in the form of windrows or random trees. Rancho Cucamonga is open to creative methods for complying with this responsibility, including assigning maintenance responsibilities to willing adjacent property owners where that is the best way to ensure attention to wind susceptible trees.

Property owners should explore options for windrows replacement as well as preservation actions. Of particular value may be the selective replacement of Eucalyptus trees with other species that are not as vulnerable to wind induced damage that would impact nearby structures or cause injury to people in the vicinity.

GOAL PS-9: Balance economic development and land use objectives in Rancho Cucamonga with the operational needs of LA/Ontario International Airport.

Policy PS-9.1: Participate in the Airport Land Use Compatibility Plan and Technical Advisory Committee for LA/Ontario International Airport to protect Rancho Cucamonga interests regarding land use and safety.

Discussion: Rancho Cucamonga will consult with the LA/Ontario International Airport to minimize aircraft impacts on properties in the southern area of the City, where appropriate.

Policy PS-9.2: Balance the need to protect LA/Ontario International Airport aircraft from physical, visual, or electronic hazards without minimizing use restrictions on Rancho Cucamonga properties that would diminish full economic use of those properties.

Discussion: Rancho Cucamonga is committed to achieving consistency between General Plan land use and related policies and the LA/Ontario International Airport Land Use Compatibility Plan. The City recognizes the importance of protecting aircraft from potential development hazards that could hinder airport and aircraft operations. However, the City also wants to ensure that restrictions do not severely impact economic use of properties within airport influence zones.

Policy PS-9.3: Create an appropriate strategy to address proposed development where heights exceed FAR Part 77 standards.

Discussion: FAR Part 77, Subpart B (Notification Surfaces) requires that the FAA be notified of any proposed construction or alteration having a height greater than an imaginary surface extending 100 feet outward and one foot upward (slope of 100 to 1) for a distance of 20,000 feet from the nearest point of any runway. Beyond FAA Height Notification Area boundary, any object taller than 200 feet requires FAA notification. FAR Part 77, Subpart C (Obstruction Surfaces) establishes standards for determining obstructions to air navigation.

Policy PS-9.4: Create policies or procedures that provide flexibility regarding how prospective buyers and tenants of properties within the LA/Ontario International Airport Influence Area are informed of potential aircraft overflight impacts.

Discussion: This policy provides options for informing prospective buyers and tenants within the airport area of the impacts of airport overflight. Notification can be accomplished through an avigation easement dedication, recorded overflight notification (recorded deed), or real estate disclosure. As these generally are the responsibility of real estate agents or brokers, the City may consider including appropriate conditions in entitlements and other City-issued permits.

GOAL PS-10: Maintain good local air quality, and reduce the local contributions of airborne pollutants to the air basin.

Policy PS-10.1: Pursue efforts to reduce air pollution and greenhouse gas emissions by implementing effective energy conservation and efficiency measures and promoting the use of renewable energy (e.g., solar, wind, biomass, cogeneration, and hydroelectric power).



Discussion: According to the U.S. Department of Energy's Smart Communities Network, buildings account for 35 percent of greenhouse gas emissions across the country. The most emission-producing activities in buildings are related to heating and cooling and electricity consumption. As such, developing strategies to create and retrofit buildings to be more energy efficient is one of the primary ways to combat global warming.

Policy PS-10.2: Integrate air quality planning with land use, economic development, and transportation planning.



Discussion: Land use, transportation, and economic development decisions each affect impacts to air quality. As such, all planning efforts should consider air quality and utilize best practices to ensure air pollution and greenhouse gas emissions are minimized.

Policy PS-10.3: Consider surrounding land uses when locating sensitive receptors such as schools, hospitals, and residential uses so they are not unreasonably exposed to uses that generate pollutants considered detrimental to human health.

Discussion: Air pollution is significantly worse where air pollutants are concentrated. As new sensitive land uses are located, project reviews should consider the health impacts of existing energy-intensive industrial areas, and avoid these areas if possible.

Young children, older adults, and persons with existing health problems are susceptible to respiratory complications. These segments of the population tend to be concentrated in schools (particularly pre-schools and nursery schools), convalescent homes, and hospitals. To prevent health impacts, these uses should avoid locating in heavy industrial areas that emit air pollution.

Policy PS-10.4: Require projects that generate potentially significant levels of air pollutants to incorporate the best available air quality mitigation into the project design, as appropriate.



Discussion: In order to limit increases in air pollution, mitigation techniques are required of certain pollution-generating uses. As technology expands to better limit air pollution and greenhouse gas emissions, projects should utilize new mitigation measures as much as feasible.

Policy PS-10.5: Avoid placing sensitive land uses adjacent to heavy industrial areas.

Discussion: Pollutants from heavy industrial users create an unhealthy situation for residents and other businesses. Heavy particulates can travel beyond property lines. Being sensitive to adjacent uses is the easiest way to prevent unnecessary health risks.

Policy PS-10.6: Implement the policies in the Resource Conservation Chapter that are related to energy resources, energy conservation, and green buildings.



Discussion: The General Plan is based upon providing a Healthy Mind, Body, and Earth. An aggressive effort is being made in this Plan and those goals and policies are highlighted in this Chapter and the Resource Conservation Chapter, among others.

GOAL PS-11: Reduce the volume of pollutants generated by motorized vehicles.

Policy PS-11.1: Implement the policies in the Community Mobility Chapter to foster a healthy and sustainable community and promote transportation choices other than the private automobile.



Discussion: Motor vehicles represent the major source of air pollution emissions within Rancho Cucamonga. Thus, efforts to reduce emissions from this source can result in significant improvements in air quality. Additional benefits of utilizing other modes of transportation include potential cost savings and exercise, contributing to a healthy lifestyle.

Policy PS-11.2: Minimize vehicle emissions by encouraging alternative land use patterns that reduce the need for automobile trips.



Discussion: Compact development patterns that reduce the need to drive by locating housing near employment centers, shopping, and transit will help reduce the need for automobile trips. These land use policies encourage alternatives such as public transit, carpooling, bicycling, and walking.

Policy PS-11.3: Support programs that increase ridesharing, reduce pollutants generated by vehicle use, and meet the transportation control measures recommended by SCAQMD in the most recent Clean Air Plan.



Discussion: Ridesharing is an effective way to quickly reduce the number of vehicles commuting and contributing to local air pollution emissions. The City will work with local businesses to promote ridesharing programs, such as shuttle services, reserved carpool parking, flexible work schedules, car-sharing, and other measures. In addition, the City will work with regional agencies to support reduced vehicle emissions in support of Clean Air Plans.

Policy PS-11.4: Support regional and local transportation and housing programs that reduce vehicle emissions by decreasing vehicle miles traveled (VMT).



Discussion: Vehicle trip reduction directly affects local air quality, traffic congestion, noise, and energy consumption. Methods to reduce vehicle trips involve the arrangement and density of land uses, encouraging carpool programs, and offering other convenient modes of travel. Site planning techniques include increasing residential densities near activity centers or commercial centers, providing convenient pedestrian and bicycle access to and within commercial/office developments, promoting high-speed internet access for home-office use, and various site planning techniques. The City has also taken a more direct approach through the adoption of a Transportation Demand Management Ordinance that establishes regulations aimed at trip reduction to be implemented by new development.

Policy PS-11.5: Consult with neighboring cities and jurisdictions and regional agencies, including the Southern California Association of Governments (SCAG) and the South Coast Air Quality Management District (SCAQMD), to reduce vehicle emissions.



Discussion: Air pollution and global warming are issues that cross jurisdictional and even national boundaries. As such, these problems require continual regional cooperation. At the same time, local-level leadership is also important to implement programs and achieve solutions.

Policy PS-11.6: Pursue strategies and capital improvements that allow safe routes for children to walk or bike to school to reduce the need for automobile trips.



Discussion: Safe Routes to Schools is a national program that assists communities in enabling and encouraging children to safely walk and bike to school by providing funding to create safe routes through infrastructure improvements. In 2008, Rancho Cucamonga received funding to launch a pilot program to educate children and their parents about the benefits of utilizing the Pacific Electric Trail as a safe route for walking and bicycling to school. The City will continue to pursue funding and strategies to encourage safe walking and bicycling to school.

GOAL PS-12: Mitigate against climate change.

Policy PS-12.1: Consult with State agencies, SCAG, and the San Bernardino Associated Governments (SANBAG) to implement AB32 and SB375 by utilizing incentives to facilitate infill and transit-oriented development.



Discussion: State Assembly Bill 32, the California Global Warming Solutions Act (California Health and Safety Code §38500) requires California to reduce its greenhouse gas emissions levels to 1990 levels by 2020. State Senate Bill 375 (California Public Resources Code §21155) requires the State to set regional greenhouse gas reduction targets. Per SB 375, transportation funding in California is contingent on meeting these targets.

To meet these targets, compact development patterns must be achieved, including infill and transportation-oriented development that encourages alternative forms of transportation. The City will continue to consult with State and regional agencies to participate and cooperate in the implementation of the law.

Policy PS-12.2: Encourage renewable energy installation, and facilitate green technology and business and a reduction in community-wide energy consumption.



Discussion: Energy conservation conserves fossil fuels, helps avoid blackouts, controls air pollution, and promotes sustainability. Both energy-efficient design features and changing wasteful habits are necessary to reduce energy consumption. In addition, renewable energy sources such as solar, wind, and biomass can reduce reliance on fossil fuels. Consumption of imported nonrenewable energy resources results in significant pollutant emissions to the environment, and represents a net outflow of dollars from the community and decreases the economic autonomy of the City. Rancho Cucamonga, therefore, is committed to greater energy efficiency by selectively replacing imported, nonrenewable energy resources with domestic renewable energy sources such as solar and wind energy, recycled municipal solid waste, and green waste as these strategies become economically practical. Green technology and businesses will have a central role in the economy and in providing solutions to greenhouse gas emissions in the upcoming decades.

Policy PS-12.3: Encourage development of transit-oriented and infill development, and encourage a mix of uses that foster walking and alternative transportation.



Discussion: While the existing development pattern demands significant automobile usage to get from one dominant use to another, Rancho Cucamonga seeks to achieve a more balanced mix of access choices as the City evolves. As such, the potential for Mixed Use development is encouraged in key areas. To reduce vehicle miles traveled, land use patterns must be compact and coordinated with regional transportation options that make transit convenient and efficient.

Policy PS-12.4: Provide enhanced bicycling and walking infrastructure, and support public transit, including public bus service, the Metrolink, and the potential for Bus Rapid Transit (BRT).

Earth

Discussion: Transportation sources use the most energy and emit the most greenhouse gas emissions of any sector. A reduction of vehicle miles traveled reduces greenhouse gas emissions. Reduced vehicle miles can be accomplished through a number of methods including increased bicycle, pedestrian, and transit use, and locating employment opportunities and commercial goods and services closer to housing. Providing convenient ways to use alternative transportation encourages its use.

Policy PS-12.5: Provide green building incentives, assess green building techniques as a formal stage of project review, and develop a green building ordinance or program that addresses both new and existing buildings. Adaptation strategies will also include increased water efficiency in buildings.

Earth

Discussion: Sustainable (green) buildings use natural resources in more efficient and ecological ways than traditional buildings. Sustainable building practices include designing, constructing, and operating buildings and landscapes to incorporate energy efficiency, water conservation, waste minimization, pollution prevention, resource-efficient materials, and high standards of indoor environmental quality in all phases of a building's life. These practices also contribute to healthy work environments. In order to ensure sustainability is promoted in new buildings, the City will develop a program to encourage or require green building techniques.

Policy PS-12.6: Encourage efforts to reduce waste generation and re-use and support increased recycling and composting opportunities with a focus on large commercial and industrial waste producers.

Earth

Discussion: Methane from landfills is a known greenhouse gas source. Recycling reduces the amount of pollution emitted from generation of new materials. Rancho Cucamonga will, therefore, continue to promote waste reduction, local recycling of materials, and use of recycled content materials by implementing the provisions of AB 939 and adopting incentives, regulations, and procedures to specify local requirements.

Policy PS-12.7: Support tree planting, planting more vegetation (including native and drought-resistant planting), and preservation of open space.

Earth

Discussion: As trees grow, they take carbon dioxide out of the air and transform it into roots, leaves, bark, flowers, and wood. At the same time, by providing shade and transpiring water, trees lower air temperature and, therefore, cut energy use, which reduces the production of carbon dioxide at power plants where fossil fuels are burned. Vegetation, and especially native and drought-tolerant planting, helps reduce the heat-island effect and lowers temperatures so that less energy-intensive cooling is required. The preservation of open space ensures that development patterns remain compact and space is available for plants that trap carbon dioxide.

Policy PS-12.8: Develop green procurement plans and ensure energy savings in City operations and maintenance.



Discussion: The City of Rancho Cucamonga has set a course towards achieving environmental sustainability. In keeping with the Healthy RC Initiative, City staff has proposed actions that focus on policies and City operations initiatives that will facilitate the integration of a Healthy Mind, Body, and Earth. Working with other stakeholders, the City will set an example by exploring, utilizing, and sharing best practices with the community. One component of this is procuring products that conserve energy and are healthy for users. The City will also ensure energy savings through conservation by design and practice as well as utilizing renewable energy sources.

Policy PS-12.9: Develop energy- or climate change-themed publications and workshops, facilitating energy audits for residents, and establishing partnerships to reduce greenhouse gas emissions. Increase public awareness about climate change, and encourage residents and businesses to become involved in activities and lifestyle changes that help reduce greenhouse gas emissions.



Discussion: A primary component necessary to reduce greenhouse gas emissions and curb climate change is raising public awareness and providing information for both residents and businesses to reduce their energy use. As greenhouse gas emissions are a community and regional issue, cooperation and partnerships are necessary to ensure that as many persons as possible contribute in reduction programs.

GOAL PS-13: Minimize the impacts of excessive noise levels throughout the community, and adopt appropriate noise level requirements for all land uses.

Policy PS-13.1: Consider the compatibility of proposed land uses with the noise environment when preparing or revising community and/or specific plans and when reviewing development proposals. The contour map depicting future noise levels (Figure PS-10) should be used by the City as a guide to land use/noise compatibility.

Discussion: Land use compatibility with noise is an important consideration in the planning and design process. Some land uses are more sensitive to noise intrusion than others. Sensitive receptors, such as residences, schools, health care facilities, and churches should not be located in proximity to major noise sources.

Policy PS-13.2: Consider noise impacts as part of the development review process, particularly the location of parking, ingress/egress/loading, and refuse collection areas relative to surrounding residential development and other noise-sensitive land uses.

Discussion: The City's Planning Department uses the project review process to identify potential noise issues and works with developers and land owners to apply site planning and other strategies to reduce noise impacts. By taking advantage of the natural shape and contours of the site, it is often possible to arrange buildings and other uses in a manner that can reduce and possibly eliminate noise impacts.

Policy PS-13.3: Consider the use of noise barriers or walls to reduce noise levels generated by ground transportation noise sources and industrial sources.

Discussion: In cases where adverse noise levels are not adequately addressed through proper site planning or building design layout, sound walls or landscaped barriers may be considered. The following guidelines are intended to ensure the effectiveness of a noise barrier:

- A noise barrier must be massive enough to prevent significant noise transmission through it and high enough to shield the receiver from the noise source.
- The barrier must be carefully constructed so that there are no cracks or openings.

Policy PS-13.4: Require that acceptable noise levels are maintained near residences, schools, health care facilities, religious institutions, and other noise sensitive uses in accordance with the Development Code and noise standards contained in the General Plan.

Discussion: Noise issues should always be considered during the planning process so that needed measures are incorporated in design and location of land uses. Noise evaluations should be conducted when a proposed project would result in sensitive land uses and major noise generators within close proximity to each other, in order to identify potential mitigation to address noise impacts.

Policy PS-13.5: Limit the hours of operation at noise generating sources that are adjacent to noise-sensitive uses, wherever practical.

Discussion: When different uses operate on differing schedules, noise disturbances can result. As more Mixed Use projects develop in the City, care must be taken to ensure a healthy noise environment for residents and a healthy business environment for restaurants, shops, and entertainment venues. To ensure compatibility of uses, business hours may need to be regulated.

Policy PS-13.6: Implement appropriate standard construction noise controls for all construction projects.

Discussion: Construction activities and noise associated with public works projects or private development occur throughout the City. Construction activities are temporary; however, they must still abide by noise control standards, including hours of operation.

Policy PS-13.7: Require all exterior noise sources (construction operations, air compressors, pumps, fans, and leaf blowers) to use available noise suppression devices and techniques to bring exterior noise levels down to acceptable levels.

Discussion: Sources of community noise are often associated with ordinary daily activities such as property maintenance and construction. Excessive noise from lawnmowers, leaf blowers, mechanical equipment, power tools, and the like can generate complaints when noise-generating activities occur in the evening or during restful weekend hours. The City's noise standards help maintain optimal interior and exterior noise levels within residential areas.

Policy PS-13.8: Require that Mixed Use structures be designed to account for noise from adjacent uses.

Discussion: Land use policy encourages new housing development within Mixed Use areas along Foothill Boulevard, near the Metrolink Station, and near the I-15 and Victoria Gardens. The City understands that a mix of uses is integral to creating an exciting and walkable environment. At the same time, mixing uses can also contribute to noise incompatibilities. As such, care should be taken at the design stage to minimize noise intrusion for residential uses.

Policy PS-13.9: Provide, as appropriate, funding to monitor noise levels and investigate noise complaints.

Discussion: Because land use patterns in Rancho Cucamonga are well established, little opportunity exists to relocate noise-sensitive uses to areas with lower ambient noise levels. In addition, as the community continues to grow and evolve, new noise conflicts could arise.

Policy PS-13.10: Provide education to the community at large about the importance of maintaining a healthy noise environment, and identify ways residents can assist in noise abatement efforts.

Discussion: Experiencing elevated noise can cause hearing impairment, hypertension, annoyance, and sleep disturbance. It is important to educate the community about the health effects of noise, and measures they can take to reduce noise in their environment.

Policy PS-13.11: Continue to work with the surrounding communities to allow for compliance with Rancho Cucamonga's land use and noise compatibility goals and objectives at the City's boundaries.

Discussion: Noise is not limited to jurisdictional boundaries. In cases where proposed projects are located near the City's boundary and include potential noise impacts, the City will communicate with neighboring jurisdictions regarding potential noise mitigation measures.

GOAL PS-14: Minimize the impacts of transportation-related noise.

Policy PS-14.1: Consult with Caltrans and other regional agencies to minimize the impact of transportation-related noise, including noise associated with freeways, major arterials, and rail lines.

Discussion: Freeway and State highway noise issues may result from residents expressing concern related to an existing noise source or for new/expanded roadway projects. In such cases, coordination with Caltrans is required to assess the level of impact and identify the most effective mitigation strategies. The City should continue participating in the Route 210 Joint Powers Authority (JPA) quarterly meetings with surrounding cities to address noise and other related issues with Caltrans.

Policy PS-14.2: Require development that is, or will be, affected by railroad noise to include appropriate measures to minimize adverse noise effects on residents and businesses.

Discussion: Railroad operation noise is notable in the southern portion of the City along two railroad spurs. In addition to noise from movement along the tracks, other sources of noise include warning signals sounded at grade crossings. New development should understand and address the noise environment through appropriate mitigation measures.

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