4 HAZARDS, SAFETY, AND NOISE

Issues and topics related to hazards, safety and noise within the Planning Area are addressed in this chapter. Some of these hazards may be naturally induced, such as wildfire hazards. Other health and safety hazards may be the result of natural hazards, which are exacerbated by human activity, such as development in areas prone to flooding. Additional hazards are entirely human-made, including airport crash hazards, exposure to hazardous materials, and noise.

- 4.1 Hazardous Materials and Waste
- 4.2 Air Traffic
- 4.3 Fire Hazards
- 4.4 Flooding
- 4.5 Climate Change and Resiliency Planning
- 4.6 Noise
- 4.7 Wildlife Hazards

4.1 HAZARDOUS MATERIALS AND WASTE

A hazardous material is a substance or combination of substances which, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may either (1) cause or significantly contribute to an increase in mortality or an increase in serious, irreversible, or incapacitating irreversible illness; or (2) pose a substantial present or potential hazard to human health and safety, or the environment when improperly treated, stored, transported, or disposed of. Hazardous materials are mainly present because of industries involving chemical byproducts from manufacturing, petrochemicals, and hazardous building materials.

Hazardous waste is the subset of hazardous materials that has been abandoned, discarded, or recycled and is not properly contained, including contaminated soil or groundwater with concentrations of chemicals, infectious agents, or toxic elements sufficiently high to increase human mortality or to destroy the ecological environment. If a hazardous material is spilled and cannot be effectively picked up and used as a product, it is considered to be hazardous waste. If a hazardous material site is unused, and it is obvious there is no realistic intent to use the material, it is also considered to be a hazardous waste. Examples of hazardous materials include flammable and combustible materials, corrosives, explosives, oxidizers, poisons, materials that react violently with water, radioactive materials, and chemicals. The existing City of La Verne General Plan identifies the following Goals and Policies related to hazardous materials and waste.

Element	Topic Area	Goal	Policy
Public Safety Element	Hazardous Materials	Goal 3: Protect Our Community from the Dangers of Hazardous Materials.	Policy 3.1: Protect the Public from the Dangers of Hazardous Waste Use and Transport. Policy 3.2: Prevent Illegal Dumping. Policy 3.3: Promote Public Awareness of Hazardous Waste Dangers.

4.1.1 Environmental Setting

Envirostor Data Management System

The California Department of Toxic Substances Control (DTSC) maintains the *Envirostor Data Management System*, which provides information on hazardous waste facilities (both permitted and corrective action) as well as any available site cleanup information. This site cleanup information includes: Federal Superfund Sites (NPL), State Response Sites, Voluntary Cleanup Sites, School Cleanup Sites, Corrective Action Sites, Tiered Permit Sites, and Evaluation/Investigation Sites. The hazardous waste facilities include: Permitted–Operating, Post-Closure Permitted, and Historical Non-Operating.

There is one location with a La Verne address that is listed in the Envirostor database. This location is located at 1855 Carrion Road. The site was the historical location of Occidental Research Corporation. The contaminants were not specified; the cleanup status states to "refer to RWQCB" (as of 1995).

Cortese List

The Hazardous Waste and Substances Sites (Cortese) List is a planning document used by the State, local agencies, and developers to comply with the California Environmental Quality Act requirements in providing information about the location of hazardous materials release sites. Government Code Section 65962.5 requires the California Environmental Protection Agency to develop at least annually an updated Cortese List. The DTSC is responsible for a portion of the information contained in the Cortese List. Other State and local government agencies are required to provide additional hazardous material release information for the Cortese List. There are no hazardous materials release sites located in the City of La Verne listed on the Cortese List.

GeoTracker

GeoTracker is the California Water Resource Control Board's data management system for managing sites that impact groundwater, especially those that require groundwater cleanup (Underground Storage Tanks, Department of Defense, Site Cleanup Program).

Leaking Underground Storage Tanks (LUST)

There are 30 locations with a La Verne address that are listed in the GeoTracker database for Leaking Underground Storage Tanks (LUST). Several locations have open cases. Table 4-1 lists the name for LUSTs in La Verne, and the address of those sites with an open case.

Table 4-1: Geotracker Database LUST Sites

Site Name	Status
American Armenian International College	Completed - Case Closed
Wymouth Plant	Completed - Case Closed
Shell Service Station	Completed - Case Closed
Yates Shell Station (2707 White Avenue)	Completed - Case Closed
Hughes Development Company	Completed - Case Closed
Owen or Opal Lewis	Completed - Case Closed
Chevron #9-3054	Completed - Case Closed
Victor Graphics, Inc. (1330 Arrow Highway)	Open – Assessment & Interim Remedial Action
Texaco Service Station	Completed - Case Closed
DPI Labs Inc.	Completed - Case Closed
Shell Service Station (2510 Foothill Boulevard)	Completed - Case Closed
Brackett Field	Completed - Case Closed

United Production Service (Oxy Petroleum) (1855 Carrion Road)	Open - Remediation
City of La Verne Fire Station #2	Completed - Case Closed
La Verne Public Safety Facility	Completed - Case Closed
Blackett Field-Pomona Police Heliport (1905 McKinley Avenue)	Open - Site Assessment
Private Residence	Completed - Case Closed
76 Products Station #5039	Completed - Case Closed
City Hall	Completed- Case Closed
Private Residence	Completed - Case Closed
Shell Service Station (1090 Foothill Boulevard)	Completed - Case Closed
Cannie Carousel	Completed - Case Closed
Shell Service Station (1808 N White Avenue)	Completed - Case Closed
Shell Oil Gas Station (1947 N D Street)	Open - Assessment & Interim Remedial Action
Teledyne Electric Company (1045 Ashford Drive)	Open - Inactive
Synthane Taylor (1440 Arrow Highway)	Open - Inactive
Sierra La Verne Country Club	Completed - Case Closed
LA Company Fire Station #17	Completed - Case Closed
Attman Brothers Construction	Informational Item
La Verne Car Wash	Completed - Case Closed
MWD F.E. Weymouth Filter Plant	Completed - Case Closed
Hughes Development Company	Completed - Case Closed
DPI Labs Inc. (1350 Arrow Highway)	Completed - Case Closed

Source: California Open Data Portal, 2016.

Solid Waste Information System (SWIS)

The Solid Waste Information System (SWIS) is a database of solid waste facilities that is maintained by the California Integrated Waste Management Board (CIWMB). The SWIS data identifies active, planned and closed sites. There are no facilities listed in the SWIS database located within the City of La Verne. The closest facility listed in the SWIS data is Elmer Teague, a closed solid waste disposal site located at 700 South Walnut Avenue, approximately 2000 feet to the west of La Verne.

4.1.2 References

Data and Information found in this section primarily came from the following sources:

California Department of Resources Recycling and Recovery. 2016. http://www.calrecycle.ca.gov/SWFacilities/Directory/Search.aspx

California Department of Toxic Substances Control. 2017. Envirostor Database. http://www.envirostor.dtsc.ca.gov/public/

California Open Data Portal. 2016. Geotracker. https://data.ca.gov/dataset/geotracker

California Water Resources Control Board. 2017. https://geotracker.waterboards.ca.gov/

City of La Verne. 1998. City of La Verne General Plan. Adopted December 7, 1998.

4.2 AIR TRAFFIC

The State Division of Aeronautics has compiled extensive data regarding aircraft accidents around airports in California. This data is much more detailed and specific than data currently available from the FAA and the National Transportation Safety Board (NTSB). According to the California Airport Land Use Planning Handbook (2002), prepared by the State Division of Aeronautics, 18.2% of general aviation accidents occur during takeoff and initial climb and 44.2% of general aviation accidents occur during approach and landing. The State Division of Aeronautics has plotted accidents during these phases at airports across the country and has determined certain theoretical areas of high accident probability. The existing City of La Verne General Plan identifies the following policies related to airport facilities.

Element	Topic Area	Goal	Policy
Noise Element		GOAL 5: Protect Our Community from Increased Airport Noise.	POLICY 5.1 – Maintain noise from Brackett field at its current level.
Community Facilities Element		GOAL 7: Physical and Functional Integration of Brackett Field into the Community.	POLICY 7.1 – Promote Brackett Field as a point of interest and convenience.

4.2.1 Approach and Landing Accidents

As nearly half of all general aviation accidents occur in the approach and landing phases of flight, considerable work has been done to determine the approximate probability of such accidents. Nearly 77% of accidents during this phase of flight occur during touchdown onto the runway or during the roll-out. These accidents typically consist of hard or long landings, ground loops (where the aircraft spins out on the ground), departures from the runway surface, etc. These types of accidents are rarely fatal and often do not involve other aircraft or structures. Commonly these accidents occur due to loss of control on the part of the pilot and, to some extent, weather conditions (California Division of Aeronautics, 2001).

The remaining 23% of accidents during the approach and landing phase of flight occur as the aircraft is maneuvered towards the runway for landing, in a portion of the airspace around the airport commonly called the traffic pattern. Common causes of approach accidents include the pilot's misjudging of the rate of descent, poor visibility, unexpected downdrafts, or tall objects beneath the final approach course. Improper use of rudder on an aircraft during the last turn toward the runway can sometimes result in a stall (a cross-control stall) and resultant spin, causing the aircraft to strike the ground directly below the aircraft. The types of events that lead to approach accidents tend to place the accident site fairly close to the extended runway centerline. The probability of accidents increases as the flight path nears the approach end of the runway (California Division of Aeronautics, 2001).

According to aircraft accident plotting provided by the State Division of Aeronautics, most accidents that occur during the approach and landing phase of flight occur on the airport surface itself. The remainder of accidents that occur during this phase of flight are generally clustered along the extended centerline of the runway, where the aircraft is flying closest to the ground and with the lowest airspeed (California Division of Aeronautics, 2001).

4.2.2 Takeoff and Departure Accidents

According to data collected by the State Division of Aeronautics, nearly 65% of all accidents during the takeoff and departure phase of flight occur during the initial climb phase, immediately after takeoff. This data is correlated by two physical constraints of general aviation aircraft:

- The takeoff and initial climb phase are times when the aircraft engine(s) is under maximum stress and is thus more susceptible to mechanical problems than at other phases of flight; and
- Average general aviation runways are not typically long enough to allow an aircraft that experiences a loss of power shortly after takeoff to land again and stop before the end of the runway.

While the majority of approach and landing accidents occur on or near to the centerline of the runway, accidents that occur during initial climb are more dispersed in their location as pilots are not attempting to get to any one specific point (such as a runway). Additionally, aircraft vary widely in payload, engine power, glide ratio, and several other factors that affect glide distance, handling characteristics after engine loss, and general response to engine failure. This further disperses the accident pattern. However, while the pattern is more dispersed than that seen for approach and landing accidents, the departure pattern is still generally localized in the direction of departure and within proximity of the centerline. This is partially due to the fact that pilots are trained to fly straight ahead and avoid turns when experiencing a loss of power or engine failure. Turning flight causes the aircraft to sink faster and flying straight allows for more time to attempt to fix the problem (California Division of Aeronautics, 2001).

4.2.3 Environmental Setting

Local Airport Facilities (Brackett Field)

Brackett Field Airport is a Los Angeles County-owned operated airport located at 1615 McKinley Avenue, within the City of La Verne. On December 9, 2015, the Airport Land Use Commission (ALUC) adopted the Brackett Field Airport Land Use Compatibility Plan (ALUCP). The ALUCP sets forth land use compatibility policies that are intended to ensure that future land uses in the surrounding area will be compatible with potential long-range aircraft activities at the airport, and that the public’s exposure to airport safety hazards and noise impacts are minimized. The ALUCP provides the basis by which the ALUC and local agencies located within the Airport Influence Areas carry out land use development review responsibilities in accordance with State Law. The ALUC retains land use development review of applicable projects until the affected local agencies’ general and specific plans have been deemed consistent with the ALUCP. A portion of the City of La Verne is located within the Brackett Field Airport Influence Area (“AIA”) and development within this area would therefore be subject to the ALUCP.

The ALUCP divides the AIA into seven different zones and gives guidelines on issues such as land use and building height. It gives three general categories—normally compatible, conditional, or incompatible—to indicate its recommendations for the stated issue and its proximity to the airport. For example, the zone closest to the runway should not have buildings over 3 stories tall, trees higher than 35 feet, or serve as an attraction for birds or other wildlife. Most of the City of La Verne falls into Zone E or Zone D which have the fewest restrictions and is categorized as having “normally compatible” or “conditional” land use acceptability across most categories. Zones A, B1, B2, and C1 are more restrictive in nature due to their close proximity to the airport. Figure 4.1 shows the Airport Land Use Compatibility Zones.

Major Regional Airport Facilities

Los Angeles International Airport (LAX): LAX is owned by the city of Los Angeles and is approximately 45 miles away from the City of La Verne. The airport is located in the west of Los Angeles and is, by far, the busiest airport serving the Los Angeles region. It is the sixth busiest commercial airport in the world and the third busiest in the United States; in 2006, LAX handled over 61 million passengers and 2 million tons of cargo.

Ontario International Airport (ONT): ONT is owned by the City of Ontario and the County of San Bernardino, under a Joint Powers Agreement, as of November 1, 2016. This airport primarily serves the Inland Empire, and is approximately 12 miles away from the City of La Verne. This airport is located to the east, in the bedroom community of Ontario, California and is the next most prominent airport after LAX.

John Wayne Airport (SNA): SNA is located to the south-east of the city, in the city of Santa Ana, in the northern part of Orange County. It offers limited international service. The National Plan of Integrated Airport Systems categorizes this airport as a primary commercial service airport, since it has over 10,000 passenger boardings per year. The John Wayne Airport is approximately 35 miles from the City of La Verne.

San Bernardino International Airport (SBD): SBD is in San Bernardino. It is the former Norton Air Force Base. The airport serves the inland empire and is in close proximity to both the Interstate 210 and Interstate 10, and is also in the proximity of historic Route 66. It is approximately 35 miles from La Verne to the San Bernardino International Airport.

Bob Hope Airport/Burbank Airport (BUR): BUR is located in Burbank, California, north of the downtown and is approximately 40 miles from the City of La Verne. It is limited to a small number of passenger airlines and serves the San Fernando and San Gabriel Valleys. The Burbank Airport is the only airport in the Los Angeles area to have a direct rail connection to Downtown Los Angeles. This airport serves the greater Los Angeles area. The FAA shows that this airport had 2,239,804 passenger boardings in 2010.

Long Beach Airport (LGB): LGB is located to the south of the city, in the city of Long Beach. This airport is categorized as a primary commercial service airport by the National Plan of Integrated Airport Systems. FAA records show that the airport had 1,451,404 passengers in 2010. The Long Beach Airport is approximately 43 miles from the City of La Verne.

Other Nearby Airport Facilities

Agua Dulce Airport: A public-use airport located 2 miles east of the central business district of Agua Dulce, Los Angeles County. This airport covers an area of 108 acres and contains one paved runway.

Catalina Airport: A privately owned airport located six miles northwest of the central business district of Avalon, California in the middle of Catalina Island. The airport is open to the public and allows general aviation aircraft to land there.

Compton/Woodley Airport: A Los Angeles County-owned public-use airport located two miles southwest of downtown Compton, in the southern portion of the County. The FAA's National Plan of Integrated Airport Systems has categorized this airport as a reliever airport.

San Gabriel Valley Airport/El Monte Airport: A public airport one mile north of El Monte, in Los Angeles County. This airport has one runway. In November 2014, the airport's name was officially changed from El Monte Airport to San Gabriel Valley Airport.

General William J. Fox Airfield: a Los Angeles County-owned, public airport in Los Angeles County, five miles northwest of Lancaster. Locally known as Fox Field, this airport primarily serves the Antelope Valley. It is categorized by the National Plan of Integrated Airport Systems as a general aviation facility.

Hawthorne Airport: A one-runway airport located one mile east of Hawthorne, Los Angeles County.

Palmdale Airport: An airport owned by the City of Palmdale, located in Palmdale. Palmdale Regional Airport has a small airline terminal and a hangar. The airport terminal is at the southwest corner of the airport and began civilian operations in 1971. The FAA's Los Angeles Air Route Traffic Control Center is next to the facility.

Santa Monica Airport: A general aviation airport in Santa Monica. The airport is about 2 miles from the Pacific Ocean and 6 miles north of LAX. It is categorized by the FAA's National Plan of Integrated Airport Systems as a reliver airport, and is expected to remain open until 2029.

Van Nuys Airport: A public airport in Van Nuys in the San Fernando Valley section of the city limits of Los Angeles. No major airlines fly into this airport. This airport is owned and operated by Los Angeles World Airports.

Whiteman Airport: A general aviation airport in the northeastern San Fernando Valley community of Pacoima, in Los Angeles. The airport is open to general aviation aircraft 24 hours per day, seven days per week. It is home to over 600 aircraft, a restaurant, and numerous aviation-related businesses.

Zamperini Airfield: A City of Los Angeles-owned public airport located three miles southwest of downtown Torrance, in Los Angeles County. The FAA classifies this airport as a Regional Reliever. This airport was once known as Torrance Municipal Airport.

National Transportation Safety Board Aviation Accident Database

The National Transportation Safety Board Aviation Accident Database identifies a total of 27 aircraft accidents in La Verne. The earliest record for an aircraft accident in La Verne is from March 4, 1983 (nonfatal). The most recent incident is from April 6, 2017 (nonfatal). The incident prior to this one occurred on November 19, 2015 (nonfatal). Out of the 27 recorded aircraft accidents in La Verne, three were fatal accidents causing a total of four deaths (NTSB, 2017). These incidents were small-scale (primarily prop planes and other small planes) occurring during takeoff and landing from Brackett Field Airport, located in La Verne.

4.2.4 References

California Department of Transportation, Division of Aeronautics. 2001. California Airport Land Use Planning Handbook.

City of La Verne. 1998. City of La Verne General Plan. Adopted December 7, 1998.

Los Angeles County Airport Land Use Commission. Brackett Field Airport Land Use Compatibility Plan (ALUCP). Adopted December 9, 2015.

Los Angeles County Department of Regional Planning. 2018. LA County GIS. http://planning.lacounty.gov/assets/obj/anet/Main.html

Los Angeles World Airports. 2018. http://www.lawa.org/welcomeLAX.aspx

National Transportation Safety Board. 2017. Available at: https://www.ntsb.gov/_layouts/ntsb.aviation/Results.aspx?queryId=63ed4779-8da1-4e22-9648-8211bd4d1221

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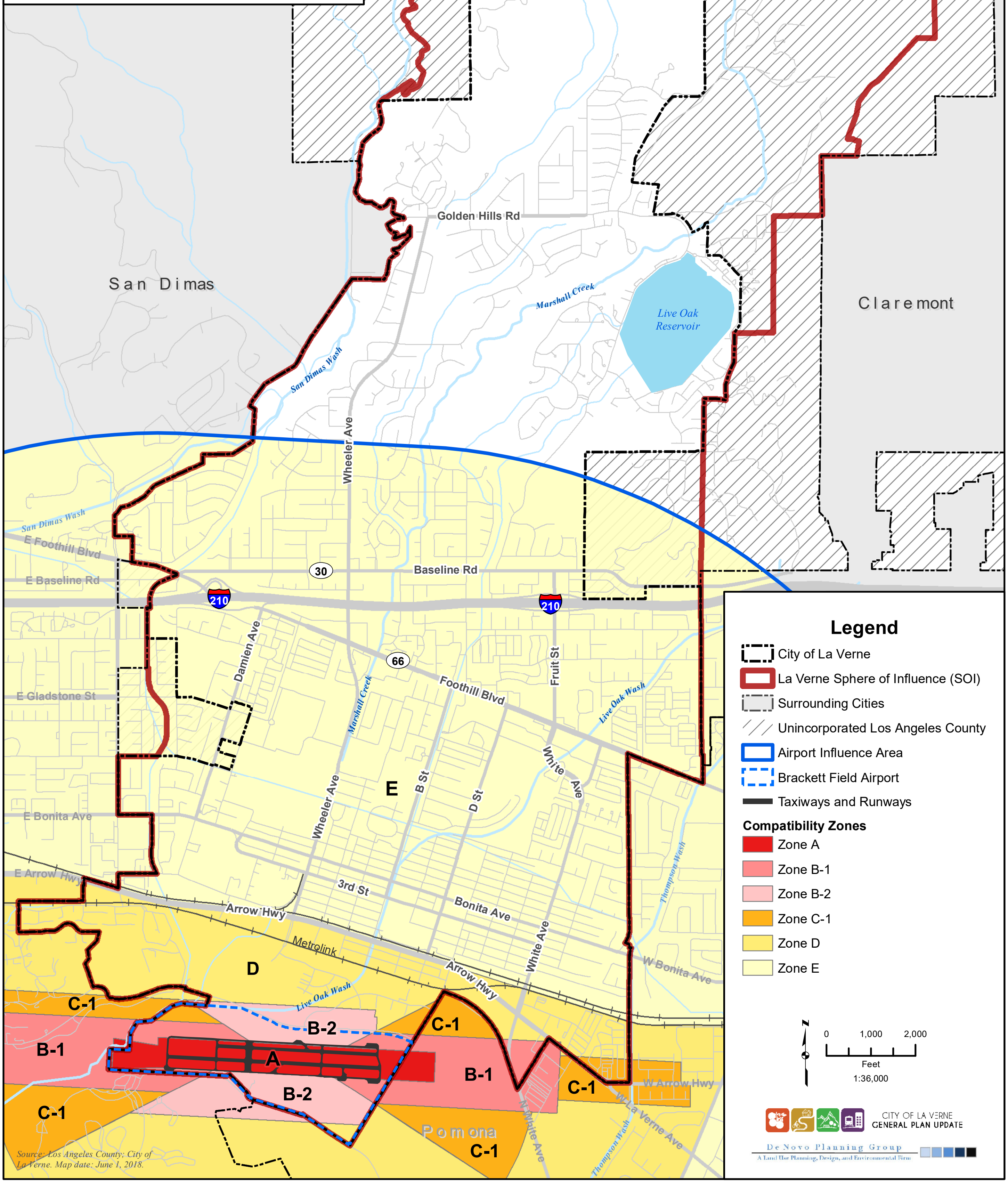
Figure 4-1
Airport Land Use Compatibility Zones



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4.3 FIRE HAZARDS

This section addresses the hazards associated with wildfires in the City of La Verne. The discussion of fire suppression resources is located in Section 3.0 (Utilities and Community Services) of this report. Section 3.0 Utilities and Community Services shows the location of La Verne Fire Department (LVFD) fire stations. The existing City of La Verne General Plan identifies the following policies related to fire: for a complete list on implementing strategies see the City of La Verne's Public Safety Element.

Element	Topic Area	Goal	Policy
Public Safety Element	Wildfire Prevention	Goal 1: Protect our community from wildfires.	Policy 1.1: Provide adequate fire protection. Policy 1.2: Minimize risk of wildfire spread.
	Public Services: Police, Fire, and Medical	Goal 5: Protect our community from crime, fire, and inadequate medical emergency care.	Policy 5.4: Provide adequate fire protection. Policy 5.5: Minimize fire threat through safe development Policy 5.6: Provide adequate emergency medical care.

4.3.1 Identifying Fire Hazards

Fuel Rank

Fuel rank is a ranking system developed by CalFire that incorporates four wildfire factors: fuel model, slope, ladder index, and crown index.

The U.S. Forest Service has developed a series of fuel models, which categorize fuels based on burn characteristics. These fuel models help predict fire behavior. In addition to fuel characteristics, slope is an important contributor to fire hazard levels. A surface ranking system has been developed by CalFire, which incorporates the applicable fuel models and slope data. The model categorizes slope into six ranges: 0-10%, 11-25%, 26-40%, 41-55%, 56-75% and >75%. The combined fuel model and slope data are organized into three categories, referred to as surface rank. Thus, surface rank is a reflection of the quantity and burn characteristics of the fuels and the topography in a given area.

The ladder index is a reflection of the distance from the ground to the lowest leafy vegetation for tree and plant species. The crown index is a reflection of the quantity of leafy vegetation present within individual specimens of a given species.

The surface rank, ladder index, and crown index for a given area are combined in order to establish a fuel rank of medium, high, or very high. Fuel rank is used by CalFire to identify areas in the California Fire Plan where large, catastrophic fires are most likely.

The fuel rank data are used by CalFire to delineate fire threat based on a system of ordinal ranking. Thus, the Fire Threat model creates discrete regions, which reflect fire probability and predicted fire behavior. The four classes of fire threat range from moderate to extreme.

4.3.2 Fire Hazard Severity Zones

The state has charged CalFire with the identification of Fire Hazard Severity Zones (FHSZ) within State Responsibility Areas. In addition, CalFire must recommend Very High Fire Hazard Severity Zones (VHFHSZ) identified within any Local Responsibility Areas. The FHSZ maps are used by the State Fire Marshall as a basis for the adoption of applicable building code standards. The Planning Area includes both Local Responsibility Areas and State Responsibility Areas, with portions of both areas being designated as Very High Fire Hazard Severity Zones. Figure 4-1 shows Fire Hazard Severity Zones in La Verne.

Local Responsibility Areas

Local Responsibility Areas (LRA) are concentrated in the incorporated areas of Los Angeles County. La Verne is an LRA that is served by its own fire department. Approximately one-third of La Verne, generally the northeast area, is designated by CalFire as an LRA Very High Fire Hazard Severity Zone.

State Responsibility Areas

State Responsibility Areas (SRA) are found to the east of west of the city in unincorporated communities of Los Angeles County that are within the City's Sphere of Influence. Some of these areas are within the Very High Fire Hazard Severity Zone in an SRA.

Federal Responsibility Areas

There are Federal Responsibility Areas within the vicinity of La Verne, directly to the north of the Planning Area boundary within the San Gabriel Mountains/Angeles National Forest.

4.3.3 Community Wildfire Protection Plan

The Community Wildfire Protection Plan (CWPP) is a document that evaluates and identifies the threat of wildfire in La Verne, and develops strategies for protecting human life and the City's assets. The CWPP is a collaborative City-wide planning effort that involved City staff, the City Fire Department, and key stakeholders including the Los Angeles County Fire Department, United States Forest Service, and the California Fire Safe Council. The La Verne Fire Marshall is responsible for conducting a thorough review of the CWPP at 5-year intervals.

The primary purpose of the CWPP is to protect human life and reduce the loss of assets such as critical infrastructure, property, and natural and cultural resources. The document includes a comprehensive evaluation of City, State, and Federal fire policies. It identifies assets and resources that are at risk such as critical infrastructure, natural habitat, risks to commerce and financial assets, and risks to the community. The CWPP evaluates fire hazards and then outlines a mitigation plan aimed at prevention. It outlines a clear plan for fighting fire, evacuation procedures, and protecting critical assets.

The CWPP's four main goals and objectives are as follows:

Goals	Objectives
Goal 1: Minimize the wildland fire threat to life safety.	• Identify specific areas within the City with the greatest potential wildfire threat • Develop guidelines to mitigate these hazards and risks
Goal 2: Reduce the threat to assets at risk from a wildfire; including homes, critical infrastructure, natural and historic resources and recreational opportunities.	• Utilize a City-wide assessment to develop specific guidelines for the protection of assets at risk • Prioritize high hazard areas for potential hazard mitigation treatments • Develop recommendations for homeowners to enhance the potential survivability of their personal assets which may be at risk • Develop fuel treatment strategies for all lands
Goal 3: Balance wildfire protection strategies with natural resource sustainability.	• Assure mitigation strategies are implemented with the highest regard to protecting visual quality • Assure that mitigation strategies are sensitive the best management practices regarding historical, cultural and natural resources • Prioritize the removal of non-native species when designing wildfire hazard mitigation strategies
Goal 4: Develop a Plan that will enhance the City's opportunities to compete for grant funding to address the existing wildfire hazard.	• Identify grant funding sources within the CWPP • Develop a CWPP that meets or exceeds the requirements of the 2003 HFRA

4.3.4 References

Data and information in this section primarily came from the following sources:

California Department of Forestry and Fire Protection and State Board of Forestry and Fire Protection. 2010. 2010 Strategic Fire Plan for California.

California Department of Forestry and Fire Protection. 2017. http://www.fire.ca.gov

City of La Verne. 1998. City of La Verne General Plan.

City of La Verne. 2014. Community Wildfire Protection Plan.

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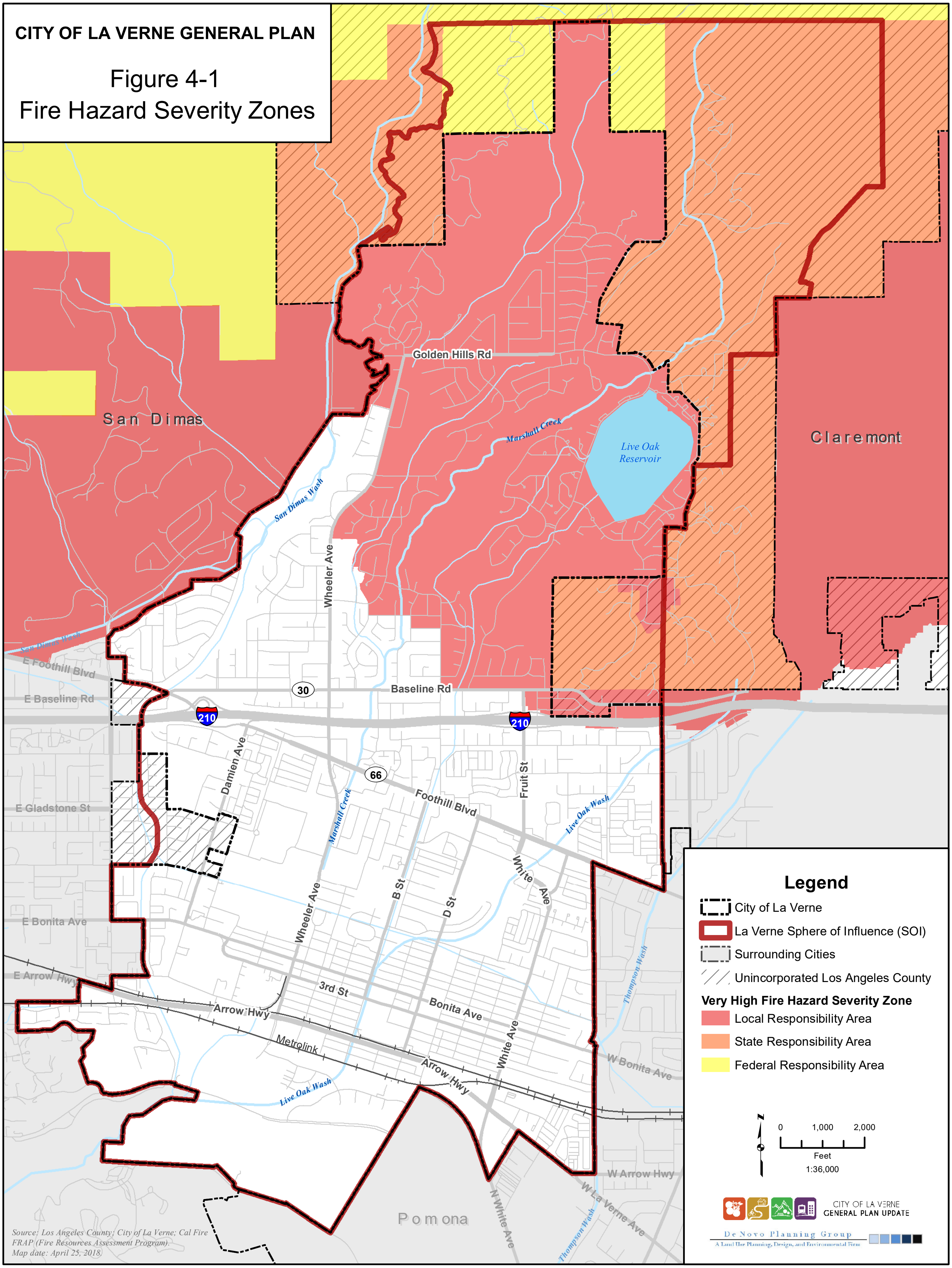
Figure 4-1
Fire Hazard Severity Zones



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4.4 FLOODING

This section addresses the hazards associated with flooding in the Planning Area. The discussion of storm drainage infrastructure is located in Section 3.0 (Utilities and Community Services) of this report. The discussion of hydrological conditions and water quality is located in Section 5.0 (Conservation and Natural Resources).

4.4.1 ENVIRONMENTAL SETTING

Flooding is a temporary increase in water flow that overtops the banks of a river, stream, or drainage channel to inundate adjacent areas not normally covered by water.

La Verne is primarily a suburban community. However, there are some undeveloped areas in the northern portions of the city where storm water can percolate into the ground. Nevertheless, the developed areas are largely paved which reduces infiltration and increases surface runoff, which can increase the risk of localized flooding. Localized flooding may occur in low spots or where infrastructure is unable to accommodate peak flows during a storm event. In most cases, localized flooding dissipates quickly after heavy rain ceases. For additional information on stormwater and drainage infrastructure see Section 3.0 (Utilities and Community Services).

FEMA Flood Zones

FEMA mapping provides important guidance for the City in planning for flooding events and regulating development within identified flood hazard areas. FEMA's National Flood Insurance Program (NFIP) is intended to encourage State and local governments to adopt responsible floodplain management programs and flood measures. As part of the program, the NFIP defines floodplain and floodway boundaries that are shown on Flood Insurance Rate Maps (FIRMs). The FEMA FIRM for the Planning Area is shown on Figure 4-2.

As shown in Figure 4-2, only a small area within La Verne is located within a mapped portion of either the 100-year and 500-year FEMA flood zones. The area documented to be subject to 100-year and 500-year flooding within La Verne is located along the San Dimas Wash (a dam spillway). The water flowing in the San Dimas Wash is water imported from Northern California, which is used to infiltrate into the groundwater aquifer at Los Angeles Department of Public Works facilities located in Pico Rivera. Risk of flooding along the San Dimas Wash is limited, since flooding within this location would be likely to only affect a largely undeveloped portion of La Verne. It should be noted that a large section of the San Dimas Wash that runs through La Verne does not have data on flood hazard risk (it is located within FEMA Zone D – Area of Undetermined Flood Hazard). FEMA also classifies large portions of the northern and western portions of La Verne as being located within FEMA Zone D (Area of Undetermined Flood Hazard). There is also a small portion of the southeastern part of the City has is located within FEMA Zone D. Nevertheless, areas within FEMA Zone D within La Verne are largely undeveloped, and therefore damage is expected to be relatively limited within these areas during a large-scale flooding event.

Dam Inundation

Earthquakes centered close to a dam are typically the most likely cause of dam failure. Dam Inundation maps have been required in California since 1972, following the 1971 San Fernando Earthquake and near failure of the Lower Van Norman Dam. There are five dams that have the potential to inundate portions of the City of La Verne in the event of dam failure including: the Live Oak Reservoir, Puddingston Diversion Dam, San Antonio Dam, San Dimas Dam, and Weymouth (as part of a Water Treatment Plant). Dam inundation areas are shown on Figure 4-3. Much of the southern portion of La Verne has the potential to be inundated during failure of one or more dams.

- The Live Oak Reservoir and Dam is located in La Verne, on a tributary of Marshall Creek. It is made of rock fill, and has a height of 105 feet with a length of 3000 feet. It drains into an area of 0.17 square miles. The reservoir is used for drinking water, and improved navigation, among other things. Construction was completed in 1975. At normal levels, it has a surface area of 77 acres. It is owned by Metropolitan Water District.
- Puddingstone Diversion Dam is located on San Dimas Creek, and is primarily used for irrigation, fish and wildlife protection, and flood control. Construction was completed in 1928. It has a normal surface area of 16 acres. It is owned by Los Angeles County Department of Public Works. The Diversion is made of rock fill,

and has a height of 34 feet and a length of 825 feet. Normal storage is 195 acre-feet. It drains into an area of 18.5 square miles.

- San Antonio Dam, also known as San Antonio Reservoir, is a flood risk management and water conservation project. The San Antonio Dam is of earthen construction has a height is 160 feet with a length of 3850 feet. Maximum discharge is 5,3700 cubic feet per second. Its capacity is 11,880 acre-feet. Normal storage is 1 acre-foot. It drains an area of 27 square miles. San Antonio Reservoir is created by San Antonio Dam on San Antonio Creek in Los Angeles County, and is used for flood control purposes. Construction was completed in 1956 and is owned by the U.S. Army Corps of Engineers.
- San Dimas Dam San Dimas Dam is on San Dimas Creek in Los Angeles County, California and is used for irrigation purposes. Construction was completed in 1922. At normal levels it has a surface area of 36 acres. It is owned by Los Angeles County Department of Public Works. San Dimas is a gravity dam. Its height is 131 feet with a length of 340 feet. Normal storage is 1,534 acre-feet and drains an area of 15.9 square miles.
- Weymouth Water Treatment Plant is located in the southern portion of La Verne. Although unlikely, if the facility were to fail or overflow, it could affect neighboring areas, including portions of the southern portion of La Verne.

Most of these dams do not have a history of dam failure; however, the U.S. Army Corp of Engineers gave the San Antonio Dam a Dam Safety Action Class II, or DSAC II, rating in December 2008 based on a Screen Portfolio Risk Analysis, or SPRA, conducted in May 2007. A DSAC II rating is given to dams where failure could begin during normal operations or be initiated as the consequence of an event. The likelihood of failure from one of these occurrences, prior to remediation, is too high to assure public safety; or the combination of life or economic consequences with probability of failure is very high.

As a result of San Antonio Dam's DSAC II rating, the Corps developed a plan to implement the following Interim Risk Reduction Measures, or IRRMs:

- Remote monitoring;
- Inspection and monitoring;
- Update Emergency Action Plan;
- Preposition materials;
- Coordinate with local interests/conduct table-top exercise;
- Improve flood mapping downstream of the dam.

Monitoring and mitigation of dam failure is constantly occurring at both the federal and state levels.

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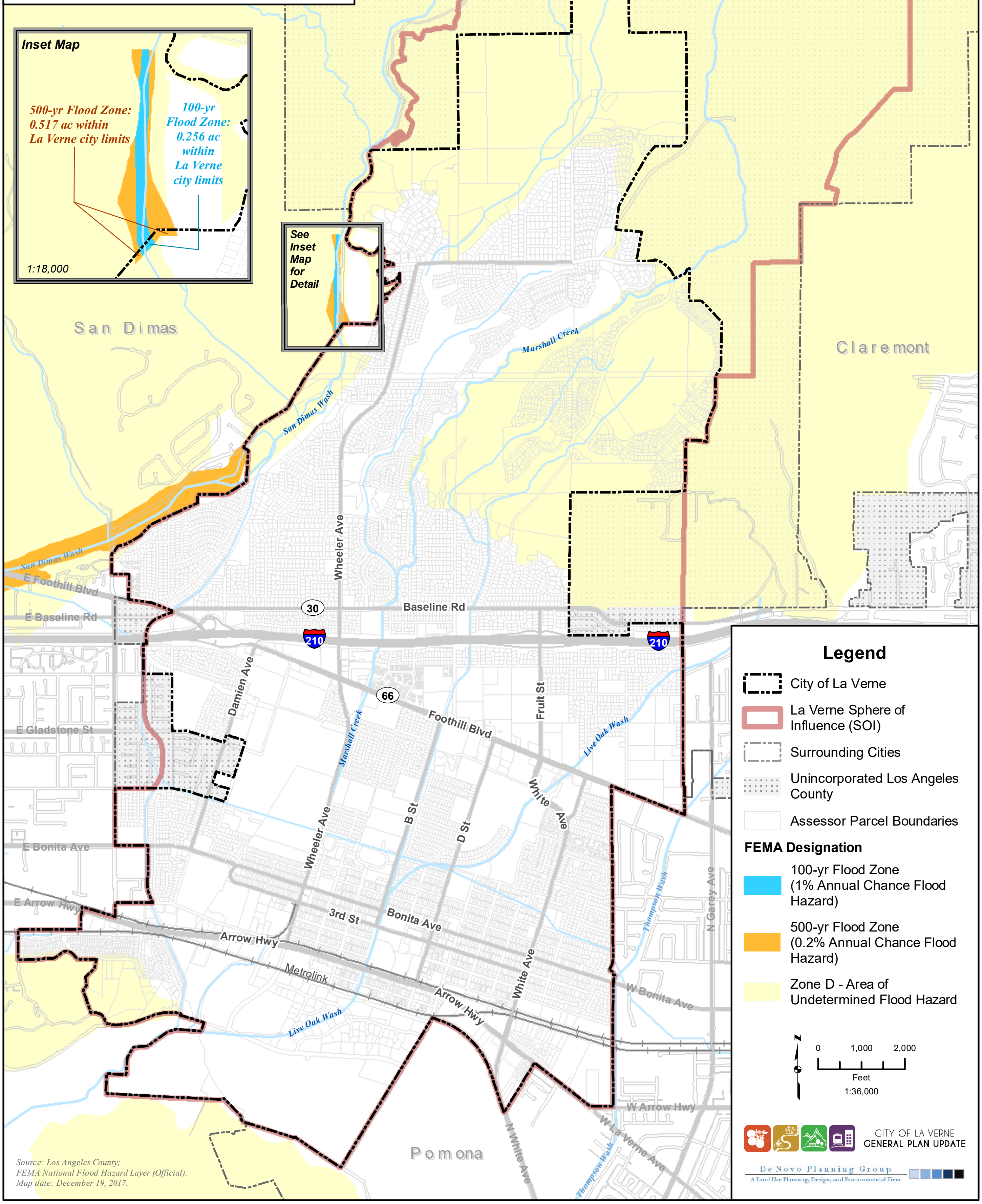
CITY OF LA VERNE GENERAL PLAN

Figure 4-3 FEMA Flood Map



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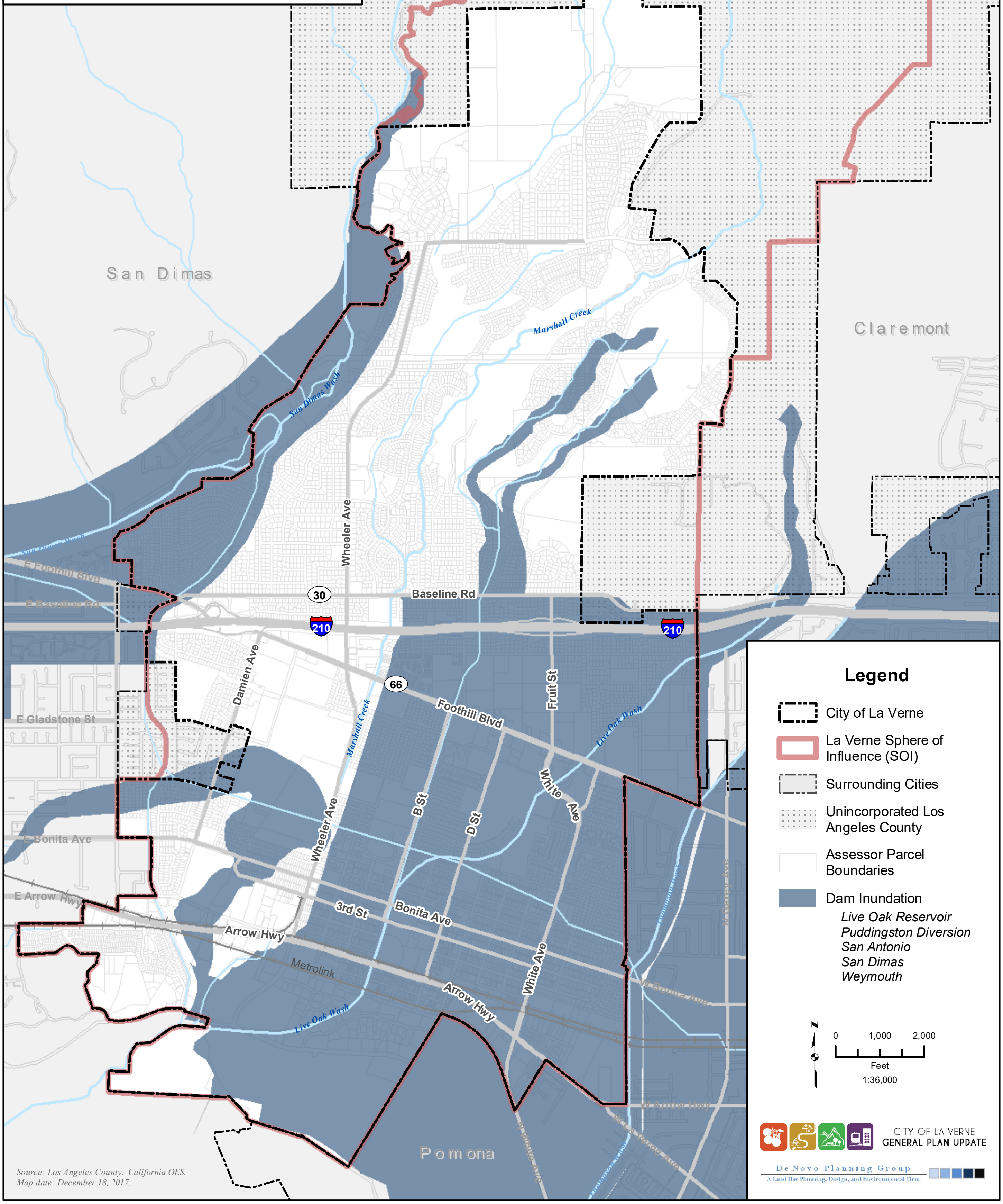
CITY OF LA VERNE GENERAL PLAN

Figure 4-4
Dam Inundation Map



Source: Los Angeles County. California OES.
Map date: December 18, 2017.

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4.5 CLIMATE CHANGE AND RESILIENCY PLANNING

This section addresses hazards associated with climate change as well as resiliency planning and adaptation strategies. For additional information of climate change and greenhouse gasses see Section 5.0 (Conservation). Information in this section is primarily from the Los Angeles County Department of Public Health *Framework for Addressing Climate Change in Los Angeles County*, the California State Legislature's *Senate Environmental Quality Committee Report on Southern California Regional Adaptation Efforts to Climate Change Impacts*, and the University of California Los Angeles (UCLA) Institute of the Environment and Sustainability *Climate Change in the Los Angeles Region Project*.

4.5.1 Background

Climate change is having global and local impacts that are occurring in response to greenhouse gas (GHG) emissions from human activities, as noted in the 5th assessment of the Intergovernmental Panel on Climate Change (IPCC). These global changes are manifesting in varied environmental health and infrastructure consequences for different countries, regions, and states, necessitating a change in public policy decision making in order to adapt to a new environment.

Over the next century, increasing atmospheric greenhouse gas (GHG) concentrations are expected to cause a variety of changes to global climate conditions, including sea level rise (SLR) and storm surge in coastal areas, increased riverine flooding, and higher temperatures more frequently (leading to extreme heat events and wildfires), particularly in inland areas. Local impacts stemming from climate related conditions range from impacts to water quality and supply, public health, air quality, wildfires and infrastructure.

Because local governments largely determine the shape of development through land-use plans, regulations, and implementing decisions, local governments play an important role in developing climate change strategies including resiliency planning and adaptation. Inasmuch as local governments play an important role in adaptation strategies through local land use plans and policies, many climate adaptation strategies will need to be coordinated as part of a larger regional, or statewide strategy requiring cooperation by many local governments, and decision making and regulatory bodies.

4.5.2 Environmental Setting

Until recently, the most robust climate change research has focused on large regions and global conditions, and information about climate change and how if effects regional areas has been less well known. While global climate models are incredibly useful for understanding climate change on global and continental scales, they are too low in spatial resolution to help understand climate impacts on smaller scales, particularly in areas like the Los Angeles region, whose complex topography creates microclimates that a global climate model cannot account for.

The most comprehensive study of climate change in the Los Angeles area to date, the *Climate Change in the Los Angeles Region Project* was conducted by Center for Climate Science Faculty Director Alex Hall and his research group at UCLA between 2010 and 2015. Researchers at UCLA used a technique to downscale approximate three dozen latest-generation global climate models at 1.2-mile resolution over the greater Los Angeles region. Focusing on two future periods, 2041–2060 and 2081–2100. Researchers analyzed changes in various aspects of climate—temperature, extreme heat, precipitation, snowfall, and runoff from precipitation in the region's mountains—under two different scenarios of greenhouse gas emissions. The "business as usual" scenario represents a continued rise in emissions of heat-trapping greenhouse gases, and the "mitigation" scenario represents aggressive action to curb emissions over the coming decades. Key Findings from this research include:

- At mid-century under the Business As Usual scenario, average temperatures over the region's land areas rise by 4.3°F, compared with a reference period of 1981–2000.
- Warming is not uniform across the LA region. Valleys and inland areas warm more than areas near the coast.
- The number of days hotter than 95°F increases across the region, but to a greater extent in the interior compared with coastal areas.

- At mid-century, temperature changes in the Mitigation scenario are 70% of those in Business As Usual scenario. That warming doesn't differ greatly between the two scenarios means significant effects of climate change are inevitable.
- At the end of the century, there's a much larger difference between the two scenarios. In the Mitigation scenario, temperatures level off, and by end-century, average temperatures are about 3°F warmer than in 1981–2000. Under Business As Usual, end-century average temperatures will be 8.2°F warmer than they were in 1981–2000. This stark difference indicates that global action to reduce greenhouse gas emissions would have significant benefits.
- Average annual precipitation totals do not change significantly in either time period or scenario. (Note: Further studies are required for a holistic analysis of precipitation changes. In California, precipitation varies greatly from year to year, so changes to the average are just one part of the story. Other projects by the Center for Climate Science are assessing changes to the distribution of precipitation events and the effects of climate change on drought.)
- Because temperature increases cause a greater share of winter precipitation to fall as rain instead of snow, snowfall in the region's mountains will be reduced. At mid-century under Business As Usual, elevations below about 6,500 feet lose half their snowfall compared with 1981–2000, while higher elevations lose up to 30%. At the end of the century under Business As Usual, lower elevations stand to lose 80% of the snowfall they received in 1981–2000.

Other studies have indicated a variety of changes to local climate conditions as a result of climate change are expected to occur leading to several local conditions that may affect the greater Los Angeles area including the City of La Verne including: increased urban flooding, higher temperatures, more frequent heat waves (leading to extreme heat events), increased risk of wildfire, water quality and water supply impacts, impacts to regional air quality, and other public health Impacts.

Flooding

Precipitation change is a climate variable that is directly affected by changes in global atmospheric and oceanic temperatures. Projected changes in precipitation include annual trend changes as well as extreme precipitation events.

Riverine and local flooding is influenced by precipitation and local conditions, such as ground cover and soil conditions. Riverine flooding occurs when heavy rainfall causes rivers or creeks to overtop their banks and inundate surrounding areas during extreme weather events. Urban flooding commonly occurs when local stormwater infrastructure is overwhelmed during extreme precipitation events. As described previously, rainfall averages are expected to vary only slightly from current conditions in the Los Angeles Region, however, local model predictions include more extreme precipitation events, which in turn cause flood risks to worsen, increasing the likelihood of damaging infrastructure, increasing erosion, and overwhelming sewage treatment systems, which may reduce water quality and impact public health.

Water Supply and Quality

According to the Los Angeles Regional Water Quality Control Board's *Los Angeles Region Framework for Climate Change Adaptation and Mitigation*, overall mean precipitation amounts are expected to change very little, however it is expected that climate change will likely impact water demand, supply, and quality of both surface and ground water.

The Los Angeles Region Framework notes that mountains around Los Angeles are expected to lose at least 31% of snowfall, which will melt faster with increasing temperatures and begin melting 16 days earlier on average. With decreased stream flows and higher temperatures, impacts could include a reduction of fish habitat, increased surface water temperatures, pollutant levels, and sedimentation, intensified algal growth, and subsequently, more harmful algal blooms. For groundwater, the potential for salt water intrusion into aquifers with sea level rise could be worsened by overpumping. The decreased water quality could further deteriorate as pollutant concentrations increase due to reduced water levels and recharge from drought and diminished snowpack.

Wildfires

Wildfire occurs as a result of conditions affected by complex interactions between primary variables (including precipitation, and temperature) and other factors (including changes in cover type). Wildfires are unplanned, natural occurring fires and may be caused by lightning, accidental human ignitions, arson, or escaped prescribed fires. Weather is one of the most significant factors in determining the severity of wildfires; natural fire patterns are driven by conditions such as drought, temperature, precipitation, and wind, and also by changes to vegetation structure and fuel (i.e., biomass) availability. Wildfires pose a great threat to life and property, particularly when they move from forest or rangeland into developed areas.

Climate change is projected to increase the frequency of wildfire events, the extent of burned areas across California, and the duration of wildfire seasons. Wildfire seasons are projected to begin earlier in the spring due to drier and warmer spring conditions on average, potentially requiring longer periods for firefighting services. Greater inter-annual variability in temperature and precipitation may also affect wildfire intensity. For example, multiple wet years can result in larger fuel buildup in landscapes. This may result in increasingly intense and frequent wildfires, if followed by drought years. Wildfire risk will also vary depending on population growth and land use characteristics, including rates of residential expansion and infrastructure into fire prone areas over the next century.

In recent decades, Southern California has experienced an increase in the area burned by wildfires. According to the *Southern California Fires Interdisciplinary Project*, the southern California fires in 2003, were widely considered a 100-year event, and the 2007 fires, were responsible for billions of dollars in costs from firefighting, property damage, environmental erosion, ecosystem services, and human health impacts. By 2050, the region’s fire season is projected to last three weeks longer with an increase of 20-30% in the annual amount of acreage burned (Yue et al. 2013).

Wildfires also contribute to reduced air quality, through the elevated levels of particulate matter and ozone pollution, with implications for public health. Wildfire smoke can result in both short-term and long-term health impacts, from minor lung and eye irritation to premature death. Research on health impacts from the 2003 Southern California wildfires showed an increase in hospital admissions for respiratory problems during the fires, including asthma attacks, acute bronchitis, and chronic obstructive pulmonary disorder (COPD), with small increases in cardiovascular admissions. The research further suggested that improved prevention measures are needed to reduce illness in vulnerable populations (Finlay, Elise et al 2012).

Extreme Heat

Temperature is a climate variable and is directly affected by changes in global atmospheric and oceanic temperatures. While trends in average annual temperature are an important indicator of climate change, extreme temperature events have greater impacts on society due to their episodic nature. Therefore, vulnerability and risk assessment tends to specifically focus on extreme heat events and not on average temperature changes. The IPCC defines extreme heat events as a period of abnormally hot weather. While extreme heat events can have various durations, CalAdapt defines an extreme heat event as a period of five or more consecutive extreme heat days. CalAdapt defines an extreme heat day in a given region as a day in April through October where the maximum temperature exceeds the 98th historical percentile of maximum temperatures for that region based on daily temperature data from 1961 to 1990. The 98th historical percentile of maximum temperatures varies by locality and inland areas tend to be at a greater risk of extreme heat events when compared to areas near the coast.

Increasing numbers of extreme heat days are projected in the coming decades. The *Public Health-Related Impacts of Climate Change in California* report points out that increasing high heat days from climate change have a number of impacts on communities, including direct heat-related mortalities and worsening of chronic health conditions (Drechsler et al. 2006). Southern California already experiences energy shortages, and higher demand from more frequent and intense high heat days could further impact health.

As noted by the Union of Concerned Scientists (UCS) in the 2012 report *Preparing for Climate Change Impacts in Los Angeles*: *Strategies and Solutions for Protecting Local Communities*, extreme heat days can lead to dehydration, heat exhaustion, and fatal heat stroke, in addition to worsening existing medical conditions, including respiratory disease, diabetes, kidney and heart disease. They report that recent research has shown that Los Angeles County has the largest number of residents in California who will be exposed to extreme heat days and at greatest risk for related health problems. Reasons for this high amount of risk include a combination of lack of air conditioning or shaded areas, outdoor work exposure to air pollutants, and preexisting health conditions.

Additionally, a 2011 report by the UCS discusses the climate penalty on ozone, demonstrating how increasing temperatures could increase ozone pollution. In 2020 alone, impacts from ozone formation associated with this penalty could result in nearly 443,000 additional cases of serious respiratory illness and cost over $729 million.

Increased Risk and Spread of Diseases

In addition to the health impacts related to air and water quality, warmer temperatures and drought conditions can contribute to the spread of diseases by aiding development and spread of the vectors that transmit them (Drechsler et al. 2006). A vector-borne disease (VBD) is one caused by a virus, bacteria, or protozoan that spends part of its life cycle in a host species (e.g. mosquitoes, ticks, fleas, rodents), which subsequently spreads the disease to other animals and people.

Regional research assessments have previously concluded that climate change and variability are highly likely to influence current VBD spread, including both short-term outbreaks and shifts in long-term disease trends. For example, as temperatures rise, mosquito reproductive cycles are shortened, allowing more breeding cycles each season, and viral transmission rates rise sharply (Githeko et al. 2000). Mosquitoes are an increasing vector of concern, particularly those species that have been introduced from other countries because changes in temperature and precipitation conditions can allow exotic species to become established in places where they could not previously survive year-round.

In Los Angeles County, there are three invasive mosquito species including the Asian tiger mosquito, which has been identified in the San Gabriel Valley. These invasive mosquitoes bite aggressively during the day and can spread a variety of disease, including chikungunya, yellow fever, and dengue, as seen with recent outbreaks in Florida and Texas. As noted in a recent Special Report on invasive mosquitoes in Los Angeles County by the San Gabriel Valley and Los Angeles Mosquito and Vector Control Districts, once established, the mosquitoes can reproduce in extremely small amounts of water and are very difficult to control.

The California Department of Public Health further notes three vector-borne diseases that climate change may impact in the state: Hantavirus, Lyme disease, and West Nile Virus (WNV). As the ecology of vectors changes with climate, exposure to disease in people may increase significantly.

4.5.3 Climate Change and Resiliency Planning Efforts

State

Key documents that summarize climate impacts in sectors and regions and provide adaptation guidance include the 2014 Safeguarding California report, focused at the state level, and the 2012 Adaptation Planning Guide to support local governments and regional collaboratives. Additionally, Cal-Adapt was designed to be a web-based climate adaptation planning tool for local planning efforts with downscaled climate change scenarios and research for regions within California.

Local and Regional Efforts in Climate Adaptation

In Southern California, there are a number of regional collaboratives, agencies, academic institutions, and local governments engaged in climate change mitigation, adaptation, and research. A subset of the work from these many stakeholder groups is highlighted here.

The Alliance of Regional Collaboratives for Climate Adaptation (ARCCA), a network of regional collaboratives across the state, includes two in Southern California: the Los Angeles Regional Collaborative for Climate Action and Sustainability (LARC) and the San Diego Regional Climate Collaborative.

LARC, with support from the UCLA Institute of the Environment and Sustainability (IoES), fosters a network of local and regional decision-makers in the Los Angeles County region for both climate mitigation and adaptation work across sectors and locally focused research on impacts. Members include groups from academia, cities, Los Angeles County, regional agencies, nonprofits, and businesses. Part of LARC's goals includes serving as a convening body to ensure consistency in performance, collaboration, and coordination of climate actions to maximize limited resources. They also facilitate the exchange of the latest scientific research, best practices for policy development, information systems, and education efforts. One example of this is LARC's ongoing development of the Framework, a resource to support local development of climate actions by providing regional information synthesis across sectors on vulnerabilities, adaptation strategies, and applicable federal, state, and local mandates.

Additionally, the state and regional water boards have been working to coordinate climate action planning. The Los Angeles Regional Water Quality Control Board's document, *Los Angeles Region Framework for Climate Change Adaptation and Mitigation*, notes that the regional board has been engaging in a dialogue with state and federal colleagues to develop a framework for adaptation within their programs. The framework is a living document meant to be updated and expanded, in addition to serving as the first step in developing a regional climate action plan for the Board.

The Los Angeles County Department of Public Health (DPH) has a focus on inter-departmental collaboration, which has led to the development of a "Five-Point Plan to Reduce the Health Impacts of Climate Change." The Plan includes the following goals to:

- Inform and engage the public.
- Promote local policies that support the design of healthy and sustainable communities.
- Provide guidance on local climate preparedness.
- Build the capacity of departmental staff and programs.
- Adopt best management practices within departments.

An example of the DPH's work includes their Los Angeles Climate & Health Workshop Series to build healthier and more resilient communities. This series was developed in collaboration with LARC and materials are provided as a template for other public health departments to train their staff. For the public, the DPH has developed reports to inform residents about specific, local-level health impacts of climate change and how they can reduce their contributions to climate change. As noted in these reports, addressing climate change requires "the foresight, commitment, and creativity of a host of agencies" working together.

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4.6 NOISE

This section provides a discussion of the regulatory setting and a general description of existing noise sources in the City of La Verne. The analysis in this section was prepared with assistance from J.C. Brennan & Associates, Inc. The City of La Verne General Plan Noise Element (1998) establishes goals and policies, as well as criteria for evaluating the compatibility of individual land uses with respect to noise exposure. The intent is to provide guidance for determining noise impacts due to, and upon proposed projects. All projects within the city that require review under the California Environmental Quality Act (CEQA), are reviewed for compliance with the City's established noise thresholds. The existing Goals, Policies, and Strategies of the City's General Plan Noise Element are provided below.

Element	Topic Area	Goal	Policy
Noise Element	Noise Standards	Goal 1: Protect our community from excessive noise.	Policy 1.1: Maintain or reduce noise levels citywide.
	210 Freeway	Goal 2: Protect our community from freeway noise.	Policy 2.1: Prevent freeway noise from spilling into our neighborhoods. Policy 2.2: Insulate our neighborhoods against freeway noise.
	Streets	Goal 3: Protect our neighborhoods from increased traffic noise.	Policy 3.1: Prevent increases in traffic-related noise.
	Railway	Goal 4: Protect our neighborhoods from train noise.	Policy 4.1: Minimize railway noise.
	Brackett Field	Goal 5: Protect our community from increased airport noise.	Policy 5.1: Maintain noise from Brackett Field at its current level.
	Fairplex	Goal 6: Protect our community from excessive Fairplex noise.	Policy 6.1: Minimize the frequency and amount of Fairplex noise spillover.

4.6.1 Environmental Setting

Fundamentals of Acoustics

Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second or Hertz (Hz).

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels, but are expressed as dB, unless otherwise noted.

The decibel scale is logarithmic, not linear. In other words, two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70 dBA sound is half as loud as an 80 dBA sound, and twice as loud as a 60 dBA sound.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (Leq), which corresponds to a steady-state A weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The Leq is the foundation of the composite noise descriptor, Ldn, and shows very good correlation with community response to noise.

The day/night average level (Ldn) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because Ldn represents a 24-hour average, it tends to disguise short-term variations in the noise environment. CNEL is similar to Ldn, but includes a +3 dB penalty for evening noise. Table 4-2 lists several examples of the noise levels associated with common situations.

Table 4-2: Typical Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft)	--100--	
Gas Lawn Mower at 1 m (3 ft)	--90--	
Diesel Truck at 15 m (50 ft), at 80 km/hr (50 mph)	--80--	Food Blender at 1 m (3 ft) Garbage Disposal at 1 m (3 ft)
Noisy Urban Area, Daytime **Gas Lawn Mower, 30 m (100 ft)**	--70--	Vacuum Cleaner at 3 m (10 ft)
Commercial Area **Heavy Traffic at 90 m (300 ft)**	--60--	Normal Speech at 1 m (3 ft)
Quiet Urban Daytime	--50--	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	--40--	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing

Source: Caltrans, Technical Noise Supplement, Traffic Noise Analysis Protocol. November 2009.

Effects of Noise on People

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction;
- Interference with activities such as speech, sleep, and learning; and

- Physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it.

With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- Outside of the laboratory, a 3 dBA change is considered a just-perceivable difference;
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- A 10 dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6 dB per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres, or a street with moving vehicles, would typically attenuate at a lower rate.

4.6.2 Existing Noise Levels

The FHWA Highway Traffic Noise Prediction Model (FHWA-RD 77-108) was used to develop Ldn (24-hour average) noise contours for all highways and major roadways in the General Plan study area. The model is based upon the CALVENO noise emission factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver and the acoustical characteristics of the site. The FHWA Model predicts hourly Leq values for free-flowing traffic conditions, and is generally considered to be accurate within 1.5 dB. To predict Ldn values, it is necessary to determine the hourly distribution of traffic for a typical 24-hour period.

Existing traffic volumes were obtained from the traffic modeling performed for the General Plan study area. Day/night traffic distributions were based upon continuous hourly noise measurement data obtained by J.C. Brennan & Associates, Inc. Caltrans vehicle truck counts were obtained for State Route 210 (SR-210). Using these data sources and the FHWA traffic noise prediction methodology, traffic noise levels were calculated for existing conditions. Table 4-3 shows the results of this analysis.

Traffic noise levels are predicted at 100-feet from the centerline along project-area roadway segments. In some locations, sensitive receptors may be located at distances which vary from the assumed calculation distance and may experience shielding from intervening barriers or sound walls. However, the traffic noise analysis is believed to be representative of the majority of sensitive receptors located closest to the project-area roadway segments analyzed in this report.

The actual distances to noise level contours may vary from the distances predicted by the FHWA model due to roadway curvature, grade, shielding from local topography or structures, elevated roadways, or elevated receivers. The distances reported in Table 4-3 are generally considered to be conservative estimates of noise exposure along roadways in the City of La Verne. Figure 4-4 shows existing citywide traffic noise contours. Appendix A provides the complete inputs and results of the FHWA model.

Table 4-3: Predicted Existing Traffic Noise Levels

Roadway	Segment	Noise Level at Closest Receptors (dB, Ldn)1	Distances to Traffic Noise Contours, Ldn (feet)		
			70 dB	65 dB	60 dB
Arrow Highway	San Dimas Canyon Rd. – Wheeler Ave.	67.3	66	143	308
Arrow Highway	White Ave. – Miramonte Dr. 2	67.9	72	156	335
B Street	Foothill Blvd. – Bonita Ave.	56.4	12	156	335
Baseline Road	Foothill Blvd. – Wheeler Ave.	64.7	44	95	205
Baseline Road	Emerald Ave. – Fruit St. 2	64.3	42	90	193
Bonita Avenue	Damien Ave. – Wheeler Ave. 2	62.9	34	73	156
Bonita Avenue	D St. – White St.	61.4	27	57	123
D Street	Foothill Blvd. – Bonita Ave.	59.8	21	45	96
Damien Avenue	Bonita Ave. – Juanita Ave. 2	58.9	18	39	84
Foothill Boulevard	Damien Ave. – Wheeler Ave.	68.4	78	169	363
Foothill Boulevard	Emerald Ave. – Fruit St.2	67.6	70	150	323
Foothill Boulevard	Fruit St. – Towne Center Dr.	67.5	68	147	316
Emerald Avenue	Essex Ave. – Genesee Dr.	58.4	17	36	79
Esperanza Road	Baseline Rd. – Stephens Ranch Rd.	59.7	21	44	96
Fruit Street	Bowdoin St. – Foothill Blvd.	66.4	58	124	267
Golden Hills Road	Cll Aragon – Via Dicha 2	57.5	15	31	68
Wheeler Avenue	Baseline Rd. – Oakridge Dr. 2	64.5	43	92	199
Wheeler Avenue	Baseline Rd. – Foothill Blvd.	62.8	33	71	154
Wheeler Avenue	Foothill Blvd. – Bonita Ave.	63.1	35	74	160
Wheeler Avenue	Puddingstone Dr. – Arrow Hwy.	60.1	22	47	101
Wheeler Avenue	Bonita Ave. – Arrow Hwy.	56.8	13	28	61
White Avenue	Foothill Blvd. – Bonita Ave.	63.3	36	77	165
White Avenue	Bonita Ave. – Arrow Hwy.	63.3	36	77	166
Fairplex Drive	Puddingstone Dr. – Arrow Hwy.	64.7	44	96	206
CA – 210	La Verne – Claremont	80.0	464	1000	2153

Notes: Distances to traffic noise contours are measured in feet from the centerlines of the roadways.

[1] Traffic noise levels are predicted at the closest sensitive receptors

[2] Traffic count values for this segment were extended along the roadway. See Appendix A.

Source: Kittelson & Associates, Inc., Caltrans, J.C. Brennan & Associates, Inc., 2017.

Railroad Noise Levels

Two rail lines cross through the City of La Verne, parallel to Arrow Highway. In order to quantify noise exposure from existing train operations, noise level measurements were conducted adjacent to the existing Pasadena Sub, north of Arrow Highway, and the existing San Gabriel Sub, south of Arrow Highway. The purpose of the noise level measurements was to determine typical sound exposure levels (SEL) for railroad line operations, while accounting for the effects of travel speed, warning horns, and other factors which may affect noise generation. Figure 4-5 shows the noise measurement locations.

The Pasadena Sub, operated by the Burlington Northern/Santa Fe (BNSF) Railway Company, currently experiences one freight train per day on weekdays. Continuous, 24-hour noise level measurements were conducted adjacent to the Pasadena Sub tracks, shown as Site D in Figure 4-5. Noise monitoring equipment was programmed to identify individual train events to determine noise impact of train operations on this line. It should be noted that the Pasadena Sub is part of the Metro Gold Line Construction Authority Foothill Extension Phase 2B corridor project to build a light rail line from Glendora to Claremont. Upon completion in 2026, the Pasadena Sub will consist of two light rail tracks and one freight track. Construction is anticipated to begin in 2020.

The San Gabriel Sub, operated by Metrolink, currently experiences 38 light rail operations per week day as the San Bernardino line. Short-term noise level measurements were conducted at Lordsburg Park, shown as Site 7 in Figure 4-5. The number of light rail operations was obtained from the San Bernardino line schedule for the Pomona-North Metrolink station.

Noise measurement equipment consisted of Larson Davis Laboratories (LDL) Model 820 and LDL Model 824 precision integrating sound level meters equipped with LDL ½" microphones. The measurement systems were calibrated using a LDL Model CAL200 acoustical calibrator before and after testing. The measurement equipment meets all of the pertinent requirements of the American National Standards Institute (ANSI) for Type 1 (precision) sound level meters.

Table 4-4 shows a summary of the noise measurement results for railroad activity within the City.

Table 4-4: Railroad Noise Measurement Results

Measurement Location	Railroad Track	Grade Crossing /Warning Horn	Train Events Per 24-hr period	Average SEL at 100’
Site 7	San Gabriel Sub	Yes	38 (14 Night)	87 dBA
Site D	Pasadena Sub	Yes	1 (0 Night)	113 dBA

SOURCE: J.C. BRENNAN & ASSOCIATES, INC - 2017

To determine the distances to the day/night average (Ldn) railroad contours, it is necessary to calculate the L_{dn} for typical train operations. This was done using the SEL values and above-described number and distribution of daily freight train operations. The Ldn may be calculated as follows:

Ldn = SEL + 10 log N_{eq} - 49.4 dB, where:

SEL is the mean Sound Exposure Level of the event, N_{eq} is the sum of the number of daytime events (7 a.m. to 10 p.m.) per day, plus 10 times the number of nighttime events (10 p.m. to 7 a.m.) per day, and 49.4 is ten times the logarithm of the number of seconds per day. Based upon the above-described noise level data, number of operations and methods of calculation, the L_{dn} value for railroad line operations have been calculated, and the distances to the L_{dn} noise level contours are shown in Table 4-5.

Table 4-5: Approximate Distances to the Railroad Noise Contours

Exterior noise Level at 100 feet, Ldn	Distance to Exterior Noise Level Contours, feet		
	60 dB Ldn	65 dB Ldn	70 dB Ldn
San Gabriel Sub: San Bernardino Line			
60 dB	60 dB	60 dB	60 dB
Pasadena Sub			
63 dB	63 dB	63 dB	63 dB

SOURCE: J.C. BRENNAN & ASSOCIATES, INC. 2014.

Airport Noise Levels

Brackett Field Airport is located at 1615 McKinley Avenue, two miles south of the center of the City of La Verne along the southern boundary of the city. The airport is open 24-hours a day, seven days a week, and features an air traffic control tower, dual runways, fuel services, a restaurant, and several aviation-related businesses. Runway 8R-26L is 4,841-feet long and 75-feet wide with medium-intensity runway lighting (MIRLs) and runway end identifier lights (REILs) on both ends. Runway 8R-26L also offers full instrument landing system (ILS) capabilities from the east. Runway 8L-26R is 3, 661-feet long and-75 feet wide and does not feature any lighting. The air traffic control tower is closed from 9:00 p.m. to 7:00 a.m.

Over 300 general aviation aircraft are based at Brackett Field, which has parking space for approximately 545 aircraft. Primary use of the airport is single-engine fixed-wing aircraft for general aviation purposes. However, the airport also accommodates mid-size business jet and helicopters in addition to multi-engine, turbo-jet, and turbo-prop aircraft. Current (2013) annual activity at Bracket Field Airport is approximately 99,300 operations per year, or 272 operations per day. Predicted activity for 2035 estimates 180,000 total annual operations, or 493 operations per day. Operations are defined as the total number of take-offs and landings. The majority of airport operations occur between 7:00 a.m. and 7:00 p.m. Runway 26L is used for approximately 75% of all daytime operations and 99% of all nighttime operations.

Brackett Field Airport is the only public airport within the City of La Verne. Noise impacts and contours associated with Brackett Field Airport are addressed in the Brackett Field Airport Land Use Compatibility Plan (ALUCP), adopted by the Airport Land Use Commission on December 9, 2015. The airport is owned and operated by Los Angeles County. The Los Angeles County Department of Public Works Aviation Division is responsible for the airport and currently contracts day-to-day management and operation to the American Airports Corporation, which is a private enterprise.

Further information and analysis for this airport can be found in the Brackett Field Airport ALUCP. Figure 4-6 shows the Bracket Field Airport noise impact area for year 2035 from Exhibit 5 of the ALUCP.

Fixed Noise Sources

The production of noise is a result of many industrial processes, even when the best available noise control technology is applied. Noise exposures within industrial facilities are controlled by federal and state employee health and safety regulations (OSHA and Cal-OSHA), but exterior noise levels may exceed locally acceptable standards. Commercial, recreational and public service facility activities can also produce noise which affects adjacent sensitive land uses. These noise sources can be continuous and may contain tonal components which have a potential to annoy individuals who live nearby. In addition, noise generation from fixed noise sources may vary based upon climatic conditions, time of day and existing ambient noise levels.

In the City of La Verne, fixed noise sources typically include parking lots, loading docks, parks, schools, and other commercial/retail use noise sources (HVAC, exhaust fans, etc.)

From a land use planning perspective, fixed-source noise control issues focus upon two goals:

1. To prevent the introduction of new noise-producing uses in noise-sensitive areas, and
2. To prevent encroachment of noise sensitive uses upon existing noise-producing facilities.

The first goal can be achieved by applying noise level performance standards to proposed new noise-producing uses. The second goal can be met by requiring that new noise-sensitive uses in near proximity to noise-producing facilities include mitigation measures that would ensure compliance with noise performance standards.

Fixed noise sources which are typically of concern include but are not limited to the following:

- HVAC Systems
- Pump Stations
- Steam Valves
- Generators
- Air Compressors
- Conveyor Systems
- Cooling Towers/Evaporative Condensers
- Lift Stations
- Steam Turbines
- Fans
- Heavy Equipment
- Transformers

- Pile Drivers
- Drill Rigs
- Welders
- Outdoor Speakers
- Chippers
- Loading Docks
- Grinders
- Gas or Diesel Motors
- Cutting Equipment
- Blowers
- Cutting Equipment
- Amplified music and voice

The types of uses which may typically produce the noise sources described above, include, but are not limited to: wood processing facilities, pump stations, industrial/agricultural facilities, trucking operations, tire shops, auto maintenance shops, metal fabricating shops, shopping centers, drive-up windows, car washes, loading docks, public works projects, batch plants, bottling and canning plants, recycling centers, electric generating stations, race tracks, landfills, sand and gravel operations, special events such as concerts, and athletic fields. Typical noise levels associated with various types of stationary noise sources are shown in Table 4-6.

Table 4-6: Typical Stationary Source Noise Levels

Use	Noise Level at 100 feet, Leq 1	Distance to Noise Contours, feet			
		50 dB Leq (No Shielding)	45 dB Leq (No Shielding)	50 dB Leq (With 5 dB Shielding)	45 dB Leq (With 5 dB Shielding)
Auto Body Shop	56 dB	200	355	112	200
Auto Repair (Light)	53 dB	141	251	79	141
Busy Parking Lot	54 dB	158	281	89	158
Cabinet Shop	62 dB	398	708	224	398
Car Wash	63 dB	446	792	251	446
Cooling Tower	69 dB	889	1,581	500	889
Loading Dock	66 dB	596	1,059	335	596
Lumber Yard	68 dB	794	1,413	447	794
Maintenance Yard	68 dB	794	1,413	447	794
Outdoor Music Venue	90 dB	10,000	17,783	5,623	10,000
Paint Booth Exhaust	61 dB	355	631	200	355
Skate Park	60 dB	316	562	178	316
School Playground / Neighborhood Park	54 dB	158	281	89	158
Truck Circulation	48 dB	84	149	47	84
Vendor Deliveries	58 dB	251	446	141	251

Note: 1 Analysis assumes a source-receiver distance of approximately 100 feet, no shielding, and flat topography. Actual noise levels will vary depending on site conditions and intensity of the use. This information is intended as a general rule only, and is not suitable for final site-specific noise studies.

Source: J.C. Brennan & Associates, Inc. 2017.

4.6.3 Community Noise Survey

A community noise survey was conducted to document ambient noise levels at various locations throughout the City. Short-term noise measurements were conducted at six locations throughout the City on September 26th and 27th, 2017 during daytime and nighttime periods. In addition, four continuous 24-hour noise monitoring measurements were also conducted to record day-night statistical noise level trends. The data collected included the Leq, L50, and the Lmax during the measurement period. Noise monitoring sites and the measured noise levels at each site are summarized in Table 4-7 and Table 4-8. Appendix A graphically shows the results of the noise level measurements. Figure 4-5 shows the locations of the noise monitoring sites.

Community noise monitoring equipment included LDL Model 820 and LDL Model 824 precision integrating sound level meters equipped with LDL ½" microphones. The measurement systems were calibrated using a LDL Model CAL200 acoustical calibrator before and after testing. The measurement equipment meets all of the pertinent requirements of the ANSI for Type 1 (precision) sound level meters.

Table 4-7: Existing Continuous 24-Hour Ambient Noise Monitoring Results

Site	Location	Ldn (dBA)	Measured Hourly Noise Levels, dBA Low-High (Average)					
			Daytime (7:00 am - 10:00 pm)			Nighttime (10:00 pm – 7:00 am)		
			Leq	L50	Lmax	Leq	L50	Lmax
A	5119 Old Ranch Rd., 70 ft. to centerline.	54	44-60 (52)	38-52 (44)	57-82 (67)	40-50 (45)	39-46 (42)	52-69 (59)
B	1040 Baseline Rd., 177 ft. to centerline.	67	61-67 (64)	60-66 (63)	69-82 (74)	54-64 (60)	53-63 (58)	65-82 (71)
C	2421 Foothill Blvd., 99 ft. to centerline.	64	58-62 (60)	55-59 (58)	72-87 (77)	49-61 (56)	45-57 (50)	65-81 (73)
D	2321 Arrow Hwy., 108 ft. to centerline.	70	59-81 (70)	55-61 (58)	75-113 (82)	51-64 (58)	47-60 (52)	66-83 (73)

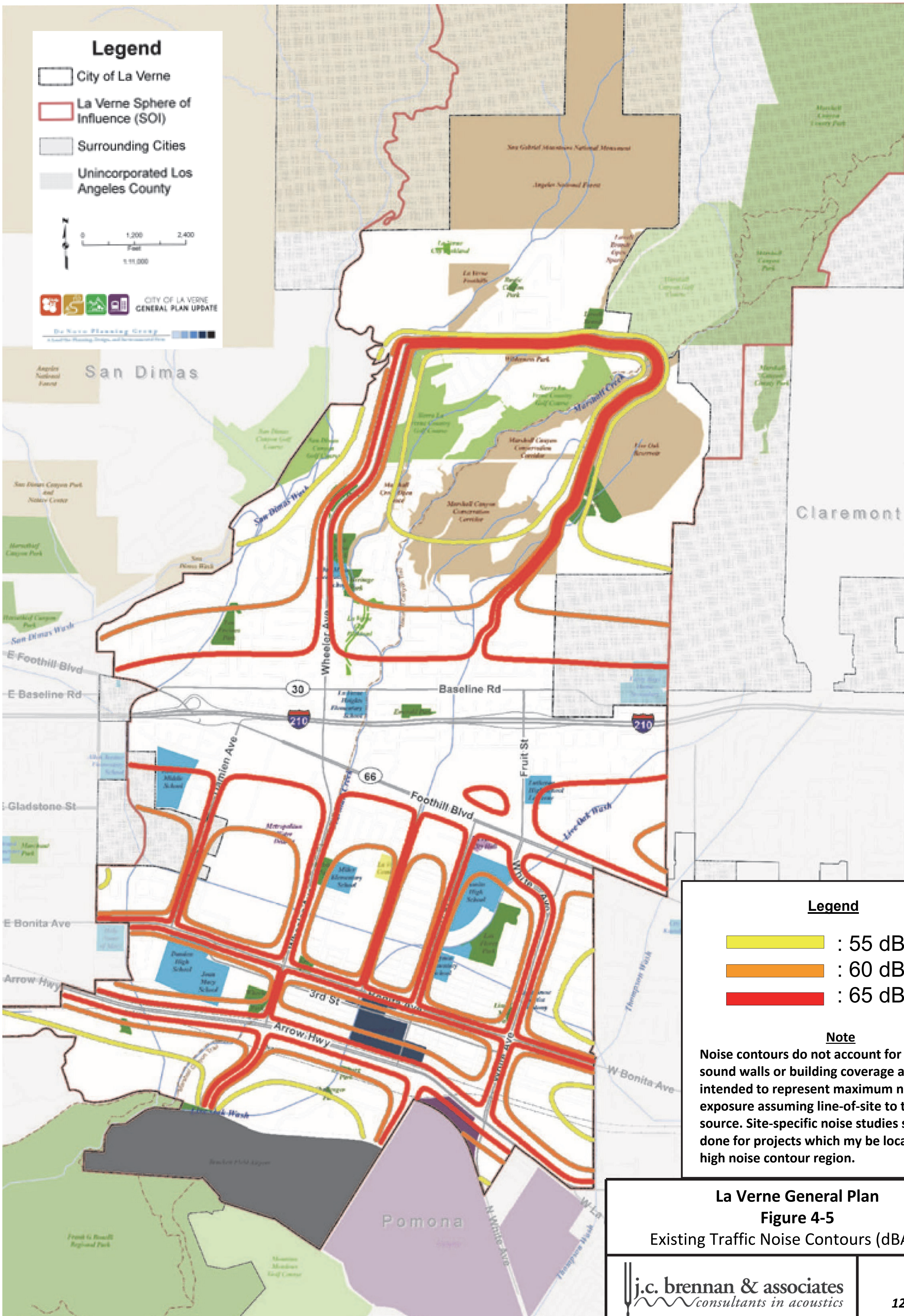
Source – J.C. Brennan & Associates, Inc. – 2017.

Table 4-8: Existing Short-Term Community Noise Monitoring Results

Site	Location	Time[1]	Measured Sound Level, dB			
			Leq	L50	Lmax	Notes
1	7360 Alta Vista	7:53 a.m.	45	42	59	Primary noise source is leaf blower/landscaping at 7331 Brydon Rd. Ambient is 40 dB.
		9:19 p.m.	42	42	47	Primary noise source is water fountain 150 ft. away at 7351 Alta Vista. Ambient is 42 dB.
2	1992 Orangewood St. 4905 Emerald Ave.	8:27 a.m.	54	45	69	Primary noise source is leafblower/landscaping on Orangewood St. Ambient is 45 dB.
		8:53 p.m.	53	51	69	Audible traffic on CA-210. Traffic on Emerald Ave. & Lemonwood St. Ambient is 45 dB.
3	1395 Foothill Blvd	9: 29 a.m.	66	64	74	Primary noise source is traffic on CA-210. Parking lot: 67 dB.
		8:25 p.m.	64	61	78	Primary noise source is traffic on CA-210.
4	2504 Kendall St.	9:55 a.m.	66	65	77	Primary noise source is traffic on White Ave. 51 dB ambient.
		7:57 p.m.	64	63	72	Primary noise source is traffic on White Ave.
5	1504 2nd St.	10:18 a.m.	64	62	72	Primary noise source is Traffic on Wheeler Ave. Dogs barking: 70 dB.
		7:35 p.m.	64	58	74	Primary noise source is traffic on Wheeler Ave. Audible commercial aircraft overhead. People playing baseball at La Verne University sports field.
6	1736 Wright Ave.	10:41 a.m.	55	49	66	Primary noise source is traffic on Puddingstone Dr. 55-60 dB from traffic overhead.
		7:10 p.m.	55	47	68	Primary noise source is traffic on Puddingstone Dr. 44 dB ambient. Train horn: 58 dB.

Note: [1] All community noise measurement sites have a test duration of 10:00 minutes.
Source - J.C. Brennan & Associates, Inc. 2017.

The results of the community noise survey shown in Table 4-7 and 4-8 indicate that existing transportation (traffic) noise sources were the major contributor of noise observed during daytime hours, especially during vehicle passbys.



Legend

Yellow	: 55 dB L_{dn}
Orange	: 60 dB L_{dn}
Red	: 65 dB L_{dn}

Note

Noise contours do not account for existing sound walls or building coverage and are intended to represent maximum noise exposure assuming line-of-site to the noise source. Site-specific noise studies should be done for projects which my be located within a high noise contour region.

La Verne General Plan

Figure 4-5

Existing Traffic Noise Contours (dBA, L_{dn})

j.c. brennan & associates
consultants in acoustics

Date:
12/8/2017

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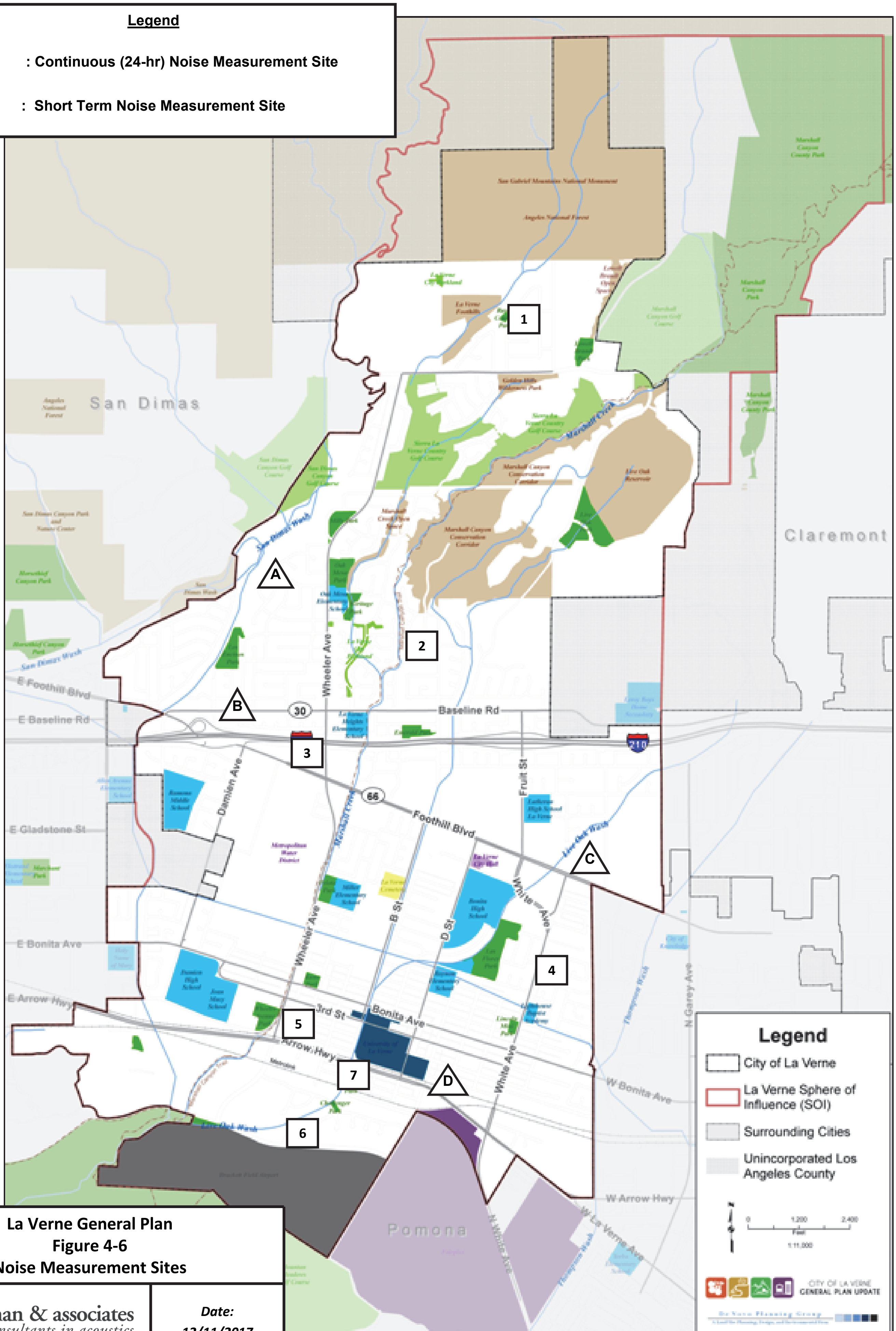
Legend

△ : Continuous (24-hr) Noise Measurement Site

□ : Short Term Noise Measurement Site



La Verne General Plan
Figure 4-6
Noise Measurement Sites

j.c. brennan & associates
consultants in acoustics

Date:
12/11/2017

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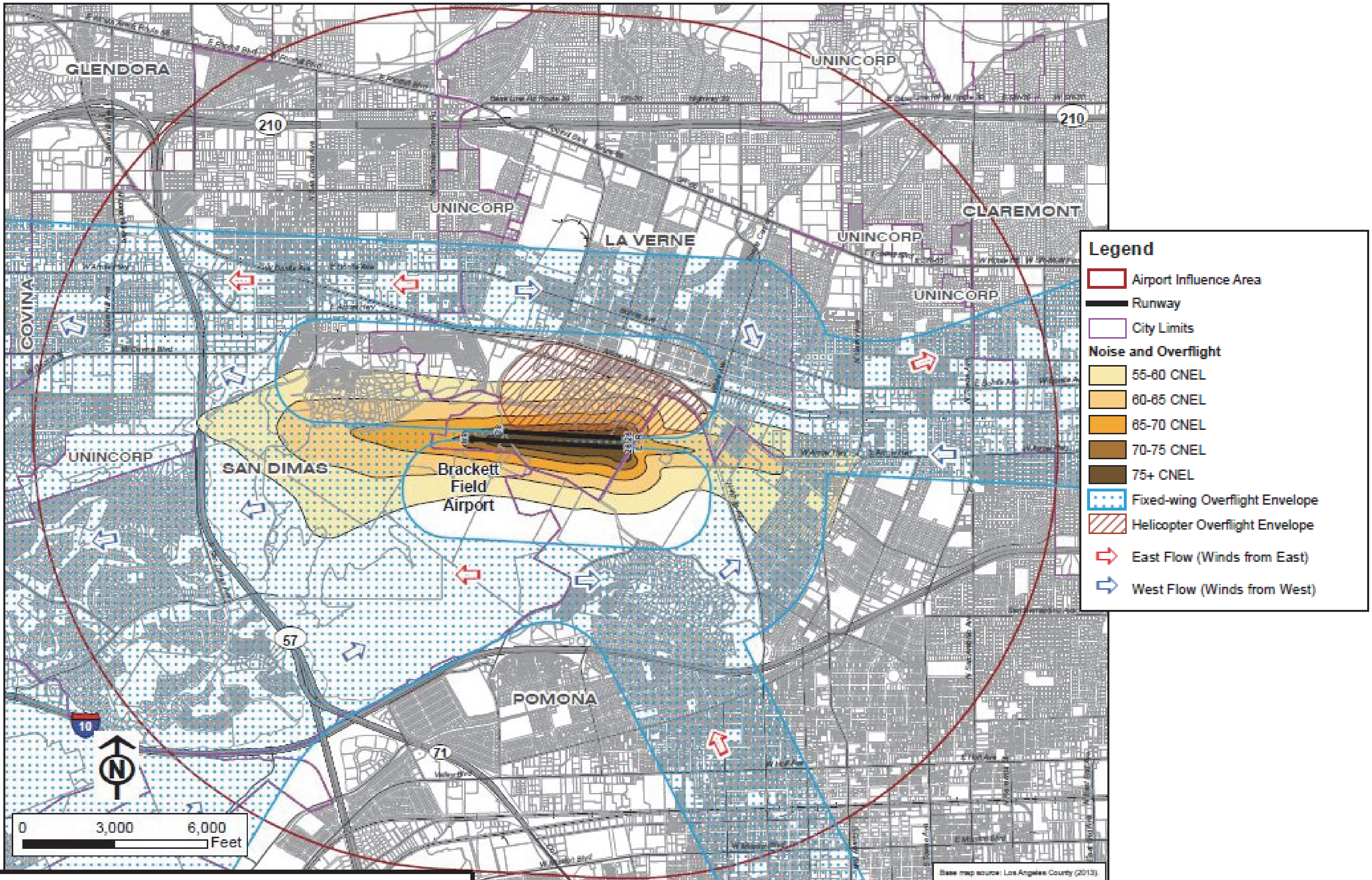

La Verne General Plan

Figure 4-7

Bracket Field Airport Noise Contours

j.c. brennan & associates
consultants in acoustics

Date:
12/11/17

Notes

1. Overflight envelope derived from random observations of Brackett Field radar data obtained from Ontario International Airport WebTrak Internet Flight Tracking System; envelope intended to encompass approximately 80% of observed tracks plus likely tracks associated with increased activity.

2. Noise contours show impacts of projected 180,000 annual operations.

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4.7 WILDLIFE HAZARDS

This section contains a brief account of the species of wildlife found in the Southern California that are considered at times to be nuisances or pose a danger to humans and domestic animals.

Information in this section is primarily from the California Wildlife Habitat Relationships System, California Department of Fish and Wildlife, and the California Interagency Wildlife Task Group. For additional information of on local species see Section 5.0 (Conservation). Southern California is home to a variety of species, many of which are encountered in urban and suburban areas. Some of these species are attracted to human landscapes, as these are artificial sources of food, water, and shelter; additionally, wildlife may find areas of human habitation to be void of predators and competitors. Other environmental conditions may also be driving wildlife into developed urban and suburban areas including drought, lack of food sources, wildfire, and climate change. The following discussion focuses of several species common in Southern California including Coyotes, Black Bears, and Mountain Lions.

4.7.1 Environmental Setting

In Southern California, black bears, coyotes, mountain lions, and to a lesser extent bobcat, represent common species that are considered nuisance species when moving from the wildlands to the urban interface. In many areas of southern California wildlife interactions between human and domestic animals are becoming more prevalent due to environmental conditions such as drought causing reductions in food and water sources, and wildfires limiting foraging areas and driving animals from wildlands, as well as the draw of easy food sources that urban areas provide. Additionally, behavioral changes in many animals who venture into urban areas are also observed and contribute to the increase in animal encounters form the wild animal normalizing these conditions (i.e. becoming uses to and unafraid of humans).

Coyotes are medium-sized members of the dog family, larger than foxes but smaller than wolves. Native to western North America, they are extremely adaptable. Coyotes have increased in numbers and have increased their geographical range during the past fifty years, due in part to human modification of the landscape. Coyotes now are found almost everywhere in North America.

Coyotes can live in almost any habitat in California, from arid deserts in the south to wet meadows and foggy coastal regions in the north. They are not as common in densely forested regions or in agricultural environments planted mainly to annual crops, because they find few food resources in these situations. In recent decades, they have become more numerous in many suburban environments where an ample food supply is available. Some of the highest population densities on record occur in suburban Southern California.

Coyotes normally are elusive animals that avoid contact with humans. Most active after dusk and before daylight, they are typically seen only at a distance. This trait may be a response to hunting, trapping, and other efforts to control coyote predation. Coyotes have been harassed and killed ever since settlers' first arrived in western North America with their livestock. In most areas of California, coyotes continue to behave in ways that minimize their contact with humans. Within urban and suburban areas in California, however, some coyotes have adapted to residential neighborhoods, parks, and open spaces, and seemingly have lost their fear of humans. This may be a result of behavioral changes that have occurred over several generations of coyotes, in localities where predator control is no longer practiced. Coyotes thrive in such areas because food, water, and shelter are abundant, and coyotes living in these environments may come to associate humans with food and protection. Once attracted to suburban areas, they prey on the abundant rodents, rabbits, birds, house cats, and small dogs that live in residential habitats. They also will feed on household garbage, pet food, and seeds and fruits of many garden and landscape plants. In some localities, this has resulted in the development of local coyote populations that seemingly ignore people, while a few coyotes have become increasingly aggressive toward humans. Coyotes have been implicated in only one human death in U.S. history - that of a three-year-old girl in Glendale, California in 1981 (Fox, C.H. and C.M. Papouchis. 2005).

Black Bears are the largest terrestrial species in the Order Carnivora in California. Adults have few predators other than humans. Distribution of Black Bears in California are widespread, occurring from sea level to high mountain regions. Found in the North Coast Ranges, Cascades, Sierra Nevada, parts of the South Coast Ranges, and in the San Gabriel and San Bernardino Mts. Figure 4.7-1 shown mapped Black Bear Range within La Verne and the surrounding area.

The drought in California has killed more than 12 million trees in the forests of Southern California, and while many small animals that can't move have died off as their habitat shrinks, bears and other big game have simply moved rather than compete for food in a cramped forest area. For many of California's 35,000 black bears, that means venturing into residential neighborhoods, searching for food in garbage and trash. Drought conditions have increasingly brought bears into contact with humans in recent years. Wildlife officials in Central California's Kern County, for instance, received 1,400 bear calls between June and December of last year, according to DFW wildlife biologist Vicky Monroe, is more than the county received in the 20 previous years combined.

Two confirmed encounters with people occurred in Los Angeles County in 2016. One on the Mount Wilson Trail in Bailey Canyon in the Angeles National Forest when a Sierra Madre man apparently interrupted a mating session between two bears. The 52-year-old man required stitches to his head and leg after he was attacked by the female. He fully recovered. A second encounter in June involved a camper at Millard Campground above Altadena who received a gash across his forehead from a bear, according to news reports.

Officials say they expect these numbers to grow as the drought continues to kill off forest land. The ever-smaller snowpack—which was at its lowest —may also be affecting hibernation patterns, causing bears to forage for longer than they would otherwise, according to Patricia Kruger, regional threatened and endangered species coordinator at the U.S. Forest Service

According to the Los Angeles County Parks Department, the three developed places in California most visited by bears Include Lake Tahoe, Mammoth Lakes and Monrovia (approximately 13 miles west of La Verne), the county parks department has worked for the city of Monrovia on efforts to haze visiting bears and make them fear people. However, most anti-bear programs have failed to change bear behavior significantly.

Bears commonly consume ants and other insects in summer, but prefer nut crops, especially acorns, and manzanita berries in the fall. As omnivores, black bears will eat whatever seems edible. Mostly they are plant eaters, but they have been reported catching and consuming young deer fawns. Bears frequently adapt to human presence, often because bears are attracted to human garbage, pet food and other food items. In suburban areas and mountain communities, bears may damage private property while foraging. These events are most likely to occur in spring if natural foods are scarce, or in late summer and fall, especially during years of poor berry and acorn yields.

According to the DFW, the best defense against bear break-ins and bears in your yard is to eliminate attractants to your property by following these tips:

- Do not toss food scraps out into the yard.
- Invest in a bear-proof garbage can and store garbage indoors until trash day.
- Clean garbage cans regularly.
- Highly odorous food scraps, such as fish can be kept in the freezer until trash day.
- Keep barbecue grills clean and free from dried grease. Store grill away if possible.
- Do not put fish or meat in compost piles.
- Consider electric fencing around gardens and compost piles.
- Consider composting bins as opposed to open composting.
- Keep doors and windows closed and locked.
- Consider installing motion-detector alarms and/or electric fencing.
- Harvest fruit off trees as soon as it is ripe, and promptly collect fruit that falls.
- Bring pets in at night. Provide safe and secure quarters for livestock at night.
- Securely block access to potential hibernation sites such as crawl spaces under decks and buildings.
- Do not spray bear spray around property – when it dries, it can serve as an attractant.
- Do not feed deer or other wildlife – not only can it be unlawful, it will attract bears to your property.

Wild Cats are large felid carnivores that reside in the plan area and include the mountain lion (Puma concolor) and the bobcat (Lynx rufus). Problems associated with mountain lions include their predation upon pets and attacks on humans; bobcats have recently been implicated in southern California for a small number of pet predation instances.

The distribution of prevalence of large cats in California are Widespread, but uncommon, ranging from sea level to alpine meadows, large cats are found in nearly all habitats, except xeric regions of the Mojave and Colorado deserts that do not support mule deer populations, and are considered most abundant in riparian areas, and brushy stages of most habitats. Recent studies by the California Department of Fish and Wildlife, and others, suggest that 2500-5000, or more, mountain lions currently live in California, and the numbers appear to be increasing. Populations of mountain lions are generally associated closely with deer populations (Nowak 1976). Fragmentation of habitats by spread of human developments and associated roads, power transmission corridors, and other support facilities, restricts movements and increases association with humans. Figure 4.8 shows mapped mountain lion range within the planning area.

The chance of conflict with wild cats may be reduced by addressing the availability of live food sources (pets and natural prey) and habitat (brush to hide in). Reducing the availability of live natural food sources entails landscaping private properties and public spaces in such ways that these animals' prey are not attracted to the area (Department of Fish and Game 2004).

4.7.2 References

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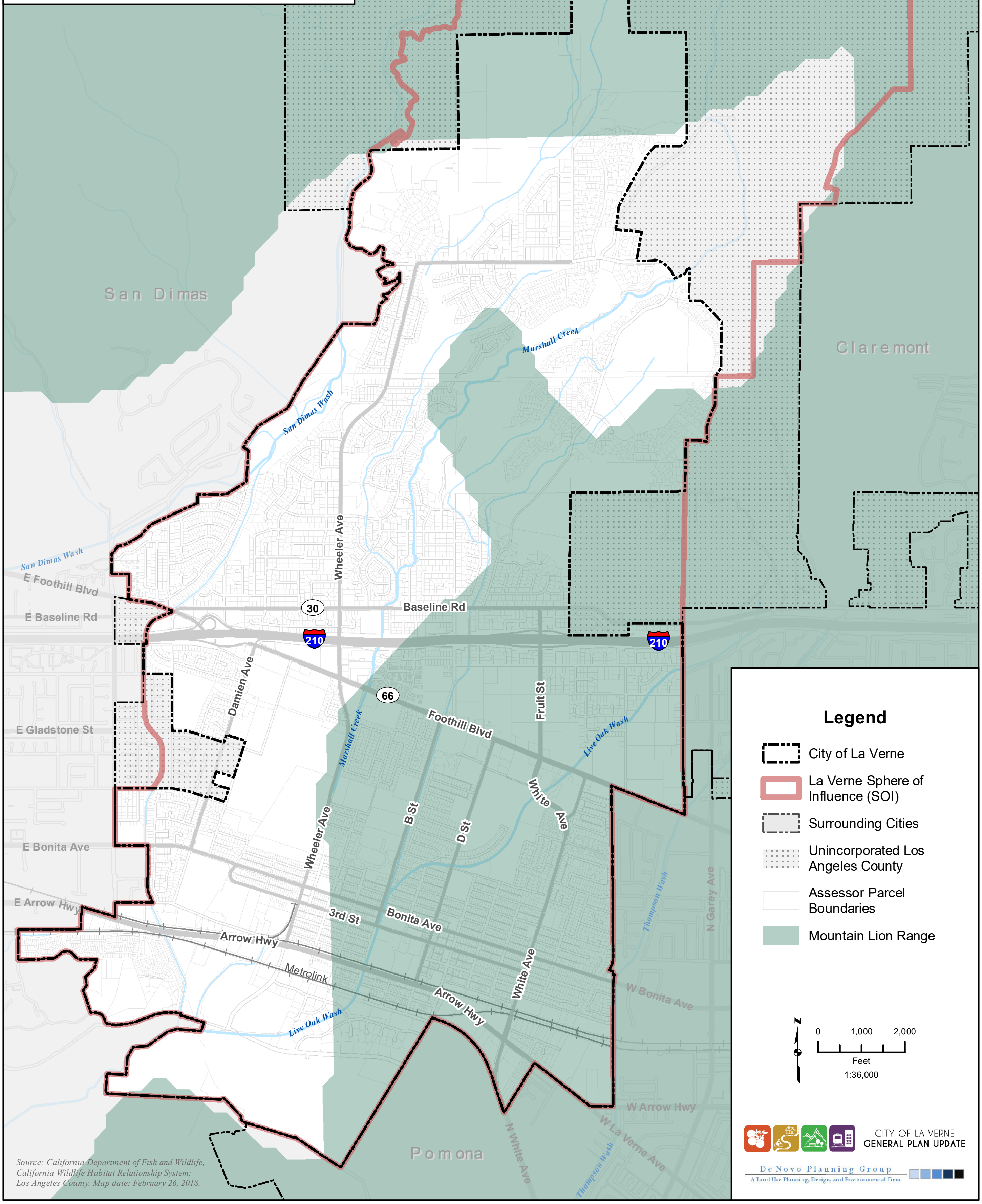
CITY OF LA VERNE GENERAL PLAN

Figure 4.8
Mountain Lion Range Map



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