2026 LHMP

Local Hazard Mitigation Plan

CITY OF SANTA CLARITA
FOUNDED 15 DECEMBER 1987™

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INTRODUCTION

This document serves as the City of Santa Clarita's Local Hazard Mitigation Plan (LHMP) update for 2026. Hazard mitigation plans are designed to guide communities in reducing the adverse impacts of natural and human-caused hazards by identifying vulnerabilities and implementing strategies to enhance resilience. The preparation and adoption of an LHMP also provides eligibility for Federal Emergency Management Agency (FEMA) grant programs, allowing the City to secure funding for mitigation projects outlined in the plan.

FEMA requires that LHMPs be updated every five (5) years to maintain eligibility for hazard mitigation funding and ensure that the plan reflects current risks, vulnerabilities, and best practices. Santa Clarita's previous LHMP update was completed in 2021. This 2026 update includes significant revisions, aligning with FEMA's latest guidance.

Structure of the 2026 LHMP Update

The 2026 Santa Clarita LHMP Update consists of the following sections:

- An overview of hazard mitigation planning, its purpose, and benefits to the community.
- A profile of Santa Clarita, detailing its history, climate, demographics, infrastructure, and vulnerable communities.
- An in-depth examination of identified hazards, which were selected in collaboration with City officials and stakeholders. These include:
    - Wildfire
    - Power outage
    - Extreme heat
    - Earthquake
    - High Wind/Storms
    - Air Quality
    - Flooding
    - Drought
    - Hazardous Materials Release / Transportation Accidents
    - Landslides
    - Dam failure
    - Epidemic/Pandemic

- An assessment of Santa Clarita's capabilities to mitigate these hazards, including an evaluation of local policies, emergency response resources, land use regulations, and interagency coordination efforts.
- A prioritized list of potential mitigation actions, along with strategies to enhance implementation, funding opportunities, and community engagement.
- A description of the LHMP planning process, including stakeholder involvement, public outreach efforts, and integration with existing City and regional plans.
- A plan for maintaining and updating the LHMP, ensuring that it remains a living document that continues to support Santa Clarita's resilience goals.

Plan Submission and Approval

The 2026 Santa Clarita LHMP Update was submitted to the California Governor's Office of Emergency Services (Cal OES) and the Federal Emergency Management Agency (FEMA) for approval on [INSERT DATE]. The Santa Clarita City Council reviewed and adopted the LHMP on [INSERT DATE], ensuring that the plan remains in effect and that the City retains eligibility for federal hazard mitigation funding programs.

This update represents Santa Clarita's commitment to proactive hazard mitigation planning, ensuring the safety, sustainability, and long-term resilience of the community.

SECTION 1 – HAZARD MITIGATION

1.1 Hazard Mitigation Planning

The goal of hazard mitigation is to reduce the frequency and severity of disasters, minimize their impact on communities, and promote resilience and sustainability in the face of future emergencies. This can include measures such as building codes and standards, zoning regulations, evacuation plans, early warning systems, and disaster-resistant infrastructure. By taking a proactive approach to disaster risk reduction, we can help to save lives, reduce the economic impact of disasters, and ensure that communities are better prepared to respond to and recover from emergencies.

Hazard mitigation planning improves a community's ability to effectively respond to natural disasters by establishing plans for maintaining continuity of operations for both government and community entities. The process involves identifying attainable goals to reduce the risk of injury, loss of life, and property damage from hazardous events, and developing strategies and activities to mitigate their effects.

Hazard mitigation planning is intended to be a participatory process that involves government agencies, stakeholders, and the public. The planning process includes scheduled events that encourage participation and ensure that a comprehensive approach is taken to address current and future hazards. By incorporating a systematic and inclusive approach, the local hazard mitigation plan (LHMP) helps to reduce the community's vulnerability to disasters and promote resilience.

1.2 Purpose and Authority

The City of Santa Clarita's 2026 Local Hazard Mitigation Plan (LHMP) outlines the potential natural and human-caused hazards that pose a threat to the citizens, resources, and property in the City. The plan also outlines the City's objectives and commitment to reducing the risks associated with these hazards.

The focus of this LHMP is on the hazards that pose the greatest risk to the City, as determined through a comprehensive hazard risk assessment and input from local officials. The updated risk assessment will help the City prioritize and update mitigation actions based on the hazards that pose the greatest risk to lives and property.

1.3 FEMA and California Requirements and Compliance

The City of Santa Clarita's risk assessment and hazard mitigation planning efforts adhere to both federal and state regulatory requirements, ensuring compliance with the Disaster Mitigation Act of 2000 (DMA 2000) (Public Law 106-390) and California Government Code §65302(g), which mandates the integration of climate adaptation and hazard mitigation into local planning efforts.

1.3.1 Federal Compliance: FEMA Requirements

The City of Santa Clarita's risk assessment and hazard mitigation planning efforts are guided by federal regulations established under the Disaster Mitigation Act of 2000 (DMA 2000) (Public Law 106-390), which amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5121 et seq.). These regulations, codified in Title 44 of the Code of Federal Regulations (CFR) Part 201, require local jurisdictions to develop and maintain a FEMA-approved Local Hazard Mitigation Plan (LHMP) to remain eligible for federal hazard mitigation funding, including grants under the Hazard Mitigation Grant Program (HMGP) and Flood Mitigation Assistance (FMA) Program, among others.

To achieve compliance with 44 CFR §201.6, this plan includes:

- Risk Assessment (§201.6(c)(2)) – A comprehensive analysis of hazard exposure, vulnerability, and potential impacts on people, property, and critical infrastructure.
- Mitigation Strategy (§201.6(c)(3)) – A framework of goals, objectives, and prioritized actions designed to reduce long-term risks from identified hazards.
- Plan Maintenance Process (§201.6(c)(4)) – A strategy for periodic review, evaluation, and updates to ensure the plan remains current and effective.
- Public Involvement (§201.6(b)(1)) – Documentation of community engagement efforts, including outreach to stakeholders, residents, and neighboring jurisdictions.
- Integration with Other Plans (§201.6(c)(4)(ii)) – A demonstration of how hazard mitigation efforts align with the General Plan Safety Element, Emergency Operations Plan (EOP), Capital Improvement Plan (CIP), and other local and regional planning mechanisms.

FEMA requires that LHMPs be updated and resubmitted every five years to reflect changes in development patterns, emerging hazard risks, and progress on mitigation actions. This ensures that the City remains eligible for FEMA disaster funding and continues to align with national hazard mitigation priorities, including those outlined in FEMA's National Mitigation Investment Strategy (NMIS) and the National Risk Index (NRI).

1.3.2 State of California Compliance: SB 379, SB 1035, and General Plan Integration

In addition to federal requirements, California has established additional hazard mitigation and resilience mandates through legislation that integrates climate adaptation into local planning:

- Senate Bill 379 (SB 379) – Climate Adaptation and Resilience (2015): Requires local jurisdictions to include climate adaptation and vulnerability assessments in the Safety Element of their General Plan, ensuring alignment with the Local Hazard Mitigation Plan (LHMP).
- Senate Bill 1035 (SB 1035) – Safety Element Updates (2018): Mandates that the Safety Element be reviewed and updated alongside the LHMP every eight years to account for flooding, wildfires, sea-level rise, and other climate change-related hazards.
- California Government Code §65302(g): Requires that cities and counties integrate climate resilience and hazard mitigation into their General Plans, ensuring that disaster risk reduction strategies align with broader land use, housing, infrastructure, and sustainability goals.

1.4 Hazard Mitigation Grant Funding

The U.S. Congress passed the Disaster Mitigation Act of 2000 (DMA 2000), which amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act and emphasized the need for state and local governments to closely coordinate their mitigation planning activities. The development of a hazard mitigation plan is a specific eligibility requirement for any local government applying for federal mitigation grant funds. These funds include the Hazard Mitigation Grant Program (HMGP) and Flood Mitigation Assistance (FMA), administered by FEMA.

- Hazard Mitigation Grant Program (HMGP): To qualify for post-disaster mitigation funds, local jurisdictions must have an approved mitigation plan from FEMA. HMGP provides funds following a presidential disaster declaration.
- Flood Mitigation Assistance (FMA): A community must have an approved mitigation plan from FEMA to be eligible for FMA grants to implement flood mitigation, acquisition, or elevation of flood-prone homes. The community must also participate in the National Flood Insurance Program (NFIP).

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SECTION 2 – COMMUNITY PROFILE

This section provides a foundation for understanding Santa Clarita's hazard context by summarizing the physical, historical, social, and economic characteristics that shape local risk. Together, the profiles in this section help explain why certain hazards pose greater risks in particular areas and to particular populations, and they provide essential context for the risk assessment, vulnerability analysis, and mitigation strategy that follow.

2.1 Setting and Location

Santa Clarita encompasses about 70.75 square miles of land (70.82 square miles total area) in northern Los Angeles County. The City lies roughly 30–33 miles north of Downtown Los Angeles, within the Santa Clarita Valley of the Transverse Ranges. It is bounded by the San Gabriel Mountains to the east, the Santa Susana Mountains to the south and west, and the Sierra Pelona Mountains to the north; the Santa Clara River flows east-to-west through the City. Topography varies substantially: the official City elevation is ~1,207 feet, with elevations ranging from about 1,024 feet near the I-5/SR-126 junction to ~3,048 feet in the hills south of Placerita and Sand Canyon Roads; most populated areas sit between ~1,100 and 2,000 feet above sea level.

Santa Clarita is a major transportation hub for the North County. Interstate 5 (Golden State Freeway) and State Route 14 (Antelope Valley Freeway) form the regional backbone and meet just south of the City at the Newhall Pass Interchange; State Route 126 traverses the western side of the City and connects toward Ventura. The City completed the Cross Valley Connector (Newhall Ranch Road/Golden Valley Road) to link SR-126 to SR-14 and improve east-west mobility. Passenger rail service is provided by Metrolink's Antelope Valley Line, with stations at Newhall, Santa Clarita (Soledad Canyon Rd.), and Via Princessa within City limits.

2.2 History

The area now known as Santa Clarita has been inhabited for thousands of years by the Fernandeño Tataviam Band of Mission Indians, whose ancestral territory spans much of the upper Santa Clara River Valley, including present-day Santa Clarita, Newhall, Saugus, and Castaic. The Tataviam people developed complex trade, land management, and cultural systems, adapting to the valley's Mediterranean climate and diverse ecosystems of oak woodland, chaparral, and riparian zones. Archaeological evidence indicates human habitation in the area for at least 8,000 years, with Tataviam villages such as Tochonanga and Piinga located near reliable water sources and along ancient trade routes connecting the coastal Chumash and inland Serrano and Kitanemuk peoples.

The first sustained European presence began in the late 18th century, when Spanish explorers and missionaries expanded north from the San Fernando Mission, established in 1797. Many Tataviam people were forcibly relocated to the mission system, where they were baptized and subjected to labor under colonial administration. The Spanish named the region for the Santa Clara River, after Saint Clare of Assisi.

After Mexico gained independence from Spain in 1821, the region was divided into large land grant ranchos, including Rancho San Francisco, which encompassed much of the current Santa Clarita Valley. In 1842, the rancho became the site of California's first recorded gold discovery, when Francisco López found flakes of gold in the roots of wild onions (*Las Flores del Oro*) in Placerita Canyon – six years before the Sierra Nevada Gold Rush.

Following the Treaty of Guadalupe Hidalgo (1848) and California's admission to the United States (1850), American settlers arrived, developing the valley as an agricultural and ranching area. The Southern Pacific Railroad reached the area in 1876, marking a turning point in regional connectivity and economic development. That same year, the Newhall Tunnel opened, and the nearby community of Newhall – one of Southern California's earliest towns – was established.

The region's early modern history was also shaped by catastrophic events, most notably the St. Francis Dam failure on March 12, 1928. The collapse unleashed a devastating flood that killed at least 431 people, destroying settlements along the Santa Clara River from San Francisquito Canyon to the Pacific Ocean. The tragedy remains one of the deadliest civil engineering failures in U.S. history, shaping subsequent dam safety regulations nationwide.

Post–World War II growth reshaped the Santa Clarita Valley into a suburban extension of Greater Los Angeles. The construction of Interstate 5 (1954–1970) and State Route 14 (1963–1971) spurred residential and commercial development, transforming former ranchlands into planned communities. Valencia, designed in the late 1960s as a master-planned development by the Newhall Land and Farming Company, became a model for modern suburban growth – featuring separated trail systems, integrated parks, and distinct village neighborhoods.

The City of Santa Clarita officially incorporated on December 15, 1987, consolidating the communities of Valencia, Newhall, Saugus, and Canyon Country into a single municipality. At incorporation, the population was approximately 110,000; as of the 2023 American Community Survey, the population has grown to approximately 231,011, making Santa Clarita the third-largest City in Los Angeles County and among the top 20 largest cities in California.

Santa Clarita's economy is diverse, with key sectors including film and television production, aerospace and defense, advanced manufacturing, logistics, tourism, and higher education. The City benefits from its location within the broader Santa Clarita Valley, where digital media and entertainment, manufacturing, and aerospace-related businesses are well established. Local higher education institutions, including the California Institute of the Arts and College of the

Canyons, contribute to workforce development and economic activity, while the City's Tourism Marketing District supports visitation and hotel-related revenue.

Tourism and entertainment remain core contributors to the local economy, led by Six Flags Magic Mountain, one of California's most visited amusement destinations and a major regional employer that draws more than 3 million visitors annually. Supporting sectors include hospitality, dining, and retail in the adjacent Valencia Town Center and Old Town Newhall districts. Santa Clarita has also earned recognition as a film-friendly jurisdiction, permitting over 500 productions each year.

The City's commitment to open space and sustainability is central to its identity. Santa Clarita manages an extensive network of approximately 100 miles of trails and paseos, 40 parks, and more than 12,000 acres of publicly owned open space, supported through the City's Open Space Preservation District and guided by the Conservation and Open Space Element of the General Plan.[1] These investments reflect a long-standing civic commitment to environmental stewardship, outdoor access, and community resilience.

The Fernandeño Tataviam Band of Mission Indians continues to play a vital role in the region's cultural and environmental preservation. The Tribe's offices are headquartered in the Santa Clarita Valley, where they work with local and regional partners to advance land stewardship, cultural revitalization, and historical recognition of Indigenous heritage throughout northern Los Angeles County.

2.3 Climate

Santa Clarita lies in the northern portion of Los Angeles County's interior valleys and experiences a Mediterranean climate (Köppen Csa/Csb transition) characterized by hot, dry summers and cool, wetter winters. The City's location – approximately 30 miles northwest of downtown Los Angeles and 30 miles inland from the Pacific Ocean – combined with surrounding mountain ranges (the San Gabriel, Santa Susana, and Sierra Pelona Mountains) creates significant local temperature gradients and rainfall variability. Santa Clarita is notably warmer and drier than the Los Angeles Basin, with distinct seasonal differences and a long summer dry period.

Temperatures: Average temperatures in Santa Clarita reflect typical interior Southern California patterns, with warm to hot summers and mild winters. Based on NOAA 1991–2020 climate

[1] City of Santa Clarita. (n.d.). *Open Space Preservation District*. Retrieved June 5, 2026, from https://santaclarita.gov/specialdistricts/open-space-preservation-district/

normals and verified with National Weather Service (NWS) Saugus station data, typical summer highs range from the low to mid-90s°F, while winter highs average in the low to mid-60s°F[2].

- The hottest month is August, with an average high near 94°F and average low around 65°F.
- The coldest month is December, averaging 63°F (high) and 45°F (low).

Inland heatwaves can push daytime temperatures above 105°F, particularly during late summer and early fall. Nighttime cooling varies by elevation and canyon orientation, with foothill areas retaining higher overnight lows due to reduced radiative cooling.

Precipitation: Rainfall in Santa Clarita is highly seasonal and variable. Long-term averages from the Saugus station show ~10.9 inches of annual precipitation, with roughly 80% of rain falling between November and March.

- January and February are typically the wettest months, averaging 2.6 and 2.2 inches, respectively.
- June through September are almost entirely dry, often recording less than 0.10 inch per month.

Annual totals fluctuate widely due to El Niño–Southern Oscillation (ENSO) patterns and atmospheric river events, which can bring intense multi-day storms. In 2023, associated with a strong El Niño, the Santa Clarita Valley recorded over 20 inches of rainfall, nearly double the long-term average. Conversely, during the 2012–2016 drought, annual totals dropped below 5 inches in several years.

Winds and Fire Weather: The Santa Clarita Valley experiences frequent Santa Ana winds, dry offshore flows that funnel through the mountain passes – especially the Newhall and Soledad Canyons – during fall and winter. These winds can exceed 60 mph, dramatically lowering humidity and elevating wildfire danger across the wildland–urban interface (WUI). Localized canyon and thermal winds also influence diurnal temperature swings and pollutant dispersion patterns.

Climate Hazards: Santa Clarita's climate-related hazards include extreme heat, drought, wildfire, and intense winter storms. The valley's inland geography heightens exposure to high summer

[2] National Centers for Environmental Information. (2021). *U.S. climate normals: 1991–2020*. National Oceanic and Atmospheric Administration. https://www.ncei.noaa.gov/access/us-climate-normals/

temperatures and prolonged multi-year droughts, while the steep surrounding watersheds (such as Placerita, San Francisquito, and Soledad Canyons) are prone to flash flooding and post-fire debris flows following heavy rainfall.

Representative Monthly Climate (Santa Clarita / Newhall Area)

(Temperatures: typical averages; precipitation: Saugus station normals, 1991–2020)

Month	Avg High (°F)	Avg Low (°F)	Avg Precipitation (inches)
January	63	45	2.61
February	66	46	2.24
March	69	49	2.08
April	74	52	0.59
May	78	56	0.30
June	86	61	0.02
July	92	65	0.05
August	94	65	0.02
September	90	63	0.10
October	82	56	0.35
November	71	49	0.60
December	63	46	1.96

National Oceanic and Atmospheric Administration (NOAA) National Centers for Environmental Information (NCEI) 1991–2020 Climate Normals, Saugus Station (Santa Clarita Valley); National Weather Service Los Angeles/Oxnard Office; California Department of Water Resources Climate Tracker; Cal-Adapt (2023).

2.4 Climate Change

Santa Clarita is projected to experience continued warming, more frequent and severe heat extremes, increased drought intensity, and greater precipitation volatility throughout the 21st century – consistent with findings from the Fifth National Climate Assessment (2023)[3] and California's Fourth Climate Change Assessment (2018)[4]. Regional climate models for Los Angeles County and the Santa Clarita Valley project that average annual temperatures will

[3] Crimmins, A. R., Avery, C. W., Easterling, D. R., Kunkel, K. E., Stewart, B. C., & Maycock, T. K. (Eds.). (2023). *Fifth national climate assessment*. U.S. Global Change Research Program. https://doi.org/10.7930/NCA5.2023

[4] California Governor's Office of Planning and Research, California Natural Resources Agency, & California Energy Commission. (2018). *California's fourth climate change assessment*. State of California. https://climateassessment.ca.gov/

increase by approximately 4–5°F by mid-century and 5–8°F by late-century relative to historical baselines (1981–2010), depending on future greenhouse gas emissions. The hottest days may be up to 10°F warmer than current extremes under high-emission scenarios. At the same time, the intensity of the wettest day of the year is expected to increase by 25–35% by late century, signaling a shift toward more volatile precipitation patterns. These changes will heighten risks related to extreme heat, wildfire, drought, and storm-driven flooding across the Santa Clarita Valley and surrounding foothill communities.

Extreme Heat and Urban Heat: Santa Clarita's inland position and limited marine influence make it particularly sensitive to rising temperatures. The City already experiences hot summers, with August average highs near 94°F and frequent heat events above 100°F. Under mid- to high-emission scenarios, the number of days above 95°F is projected to more than double by 2050 – increasing from a historical average of ~35 days to 70–80 days annually and potentially exceeding 100 days by 2100 (Cal-Adapt, 2023)[5].

Warmer overnight lows will reduce recovery from daytime heat, a key factor in heat-related illness and mortality. Populations most at risk include seniors, children, outdoor workers, low-income households, and individuals with preexisting medical conditions. These compounding effects increase demand for air conditioning and stress the Southern California Edison (SCE) power grid during peak heat periods. Sustained high temperatures may also degrade local infrastructure – such as roadways, transmission equipment, and energy-intensive industries – while reducing outdoor air quality.

Precipitation, Atmospheric Rivers, and Flooding: Although total annual rainfall in Santa Clarita may remain near current levels (~11 inches/year on average), rainfall patterns are expected to shift toward fewer, more intense storm events, especially those linked to atmospheric rivers. The California Department of Water Resources (2023) projects that the frequency of storms delivering over 2 inches of rain in 24 hours could increase by 25–40% by late century in the southern Sierra and Transverse Ranges, which drain into the Santa Clara River watershed.

Such intense precipitation events will increase runoff and debris flow hazards, particularly on recent wildfire burn scars in surrounding canyons, including Placerita Canyon, San Francisquito Canyon, and Bouquet Canyon. Rapid rainfall accumulation on steep slopes and limited infiltration in developed areas can overwhelm local drainage systems, producing localized flooding along

[5] California Energy Commission. (n.d.). *Cal-Adapt: Local climate change snapshot and extreme heat tools.* Retrieved June 5, 2026, from https://cal-adapt.org/

tributaries of the Santa Clara River and at low-lying intersections near Soledad Canyon Road and Railroad Avenue.

Drought and Water Reliability: Santa Clarita, served primarily by the Santa Clarita Valley Water Agency (SCV Water), depends on a combination of local groundwater from the Alluvial and Saugus Formation aquifers and imported water from the State Water Project via the California Aqueduct. Climate projections indicate that multi-year droughts will become more frequent and severe, punctuated by occasional extremely wet years.

Statewide studies link this “climate whiplash” effect to warmer temperatures, greater evaporative demand, and reduced Sierra Nevada snowpack. These conditions limit groundwater recharge and constrain imported supplies. According to SCV Water’s 2023 Urban Water Management Plan, groundwater production is expected to decline modestly by mid-century, requiring expanded recycled water use, stormwater capture, and conservation investments.

Wildfire Weather and Smoke: Santa Clarita’s surrounding hills and canyons are highly fire-prone, with extensive wildland–urban interface (WUI) zones. Projected warming, reduced humidity, and more variable precipitation are expected to lengthen the fire season and increase the likelihood of large, fast-moving wildfires, particularly during autumn Santa Ana wind events.

Historic events such as the 2019 Tick Fire and 2022 Route Fire illustrate the City’s vulnerability to both direct and secondary wildfire impacts. Even when fires occur elsewhere in Southern California, smoke and fine particulate matter (PM2.5) regularly drift into the Santa Clarita Valley, leading to hazardous air quality episodes. These pollutants can travel hundreds of miles, and under warming conditions, smoke exposure days are expected to rise across the Los Angeles region.

Air Quality and Health: Santa Clarita’s air quality challenges stem from a combination of regional smog transport, vehicular emissions along the I-5 and SR-14 corridors, and wildfire smoke. The Santa Clarita Valley is located within the South Coast Air Basin, one of the most ozone-affected regions in the nation. Rising temperatures accelerate ozone formation, while wildfire smoke increases PM2.5 concentrations, compounding respiratory and cardiovascular health risks.

Residents already experience elevated rates of asthma and chronic bronchitis, particularly among children and older adults. Heat exacerbates these conditions by increasing ground-level ozone and secondary particulate pollutants. The Los Angeles County Department of Public Health (2023) identifies outdoor workers, low-income families, and seniors as priority populations for adaptive measures such as cooling centers, air filtration systems, and emergency communication networks.

2.5 Demographics

Santa Clarita experienced sustained population growth through the late 20th century and into the 2000s as Valencia, Saugus, Canyon Country, and Newhall expanded, though more recent growth has been comparatively modest.

The California Department of Finance estimates Santa Clarita's 2026 population at 232,833 residents[6], while the U.S. Census Bureau's American Community Survey 5-Year Estimate estimated the City's 2024 population at 229,159[7]. For the 2020–2024 period, Santa Clarita had 75,808 households and an average household size of 3.02 persons. ACS data remain useful for describing household characteristics, income, race and ethnicity, age, and other demographic indicators, while the DOF estimate provides the most current annual population figure for the City.

Population and Racial/Ethnic Composition: Current indicators from the 2020–2024 ACS 5-year release show the following profile.

Population Overview (latest available)

- **Total population:** 229,159 (2024 estimate)
- **Households:** approximately 75,808 households
- **Sex:** 50.6% female / 49.4% male
- **Age distribution:** 24.6% under 18 and 13.5% age 65+ (ACS 2019–2023 5-year).

Race and Hispanic Origin

- **White (Non-Hispanic):** 41.2%
- **Hispanic or Latino (of any race):** 36.3%
- **Asian (Non-Hispanic):** 12.3%

[6] California Department of Finance. (2026). *E-5 population and housing estimates for cities, counties, and the state, 2020–2026*. State of California, Department of Finance. https://dof.ca.gov/forecasting/demographics/estimates/e-5-population-and-housing-estimates-for-cities-counties-and-the-state-2020-2026/

[7] U.S. Census Bureau. (n.d.). *QuickFacts: Santa Clarita city, California*. Retrieved June 5, 2026, from https://www.census.gov/quickfacts/fact/table/santaclaritacitycalifornia/PST045225

- **Black or African American (Non-Hispanic):** 4.6%
- **Two or more races:** 23.5%
- **American Indian and Alaska Native alone**: 0.9%
- **Native Hawaiian and Other Pacific Islander alone:** 0.4%

Educational Attainment (Age 25+)

- **High school graduate or higher:** 91.2%
- **Bachelor's degree or higher:** 39.8%

Income and Economy (ACS 2019–2023 and 2023 1-year)

- **Median household income**: $123,062 (2024 dollars).
- **Per-capita income:** $51,072.
- **Persons below poverty level:** 7.4%

2.6 Housing and Development

Santa Clarita's early housing stock reflects phased master planning beginning in the late 1960s, particularly in Valencia, and subsequent growth in Newhall, Saugus, and Canyon Country. By the late 20th century, development was dominated by single-family detached neighborhoods with common-area amenities and trail networks, alongside increasing multifamily housing near job centers and transit. Residential expansion accelerated again in the 1980s through the 2000s, supported by the I-5 and SR-14 corridors and large specific plans in the Santa Clarita Valley. For the current planning cycle, the City's 6th-cycle Regional Housing Needs Allocation assigns 10,031 units for the 2021–2029 period.

The California Department of Finance estimates that Santa Clarita had 83,064 housing units in 2026. The City remains more ownership-oriented than Los Angeles County overall, with an owner-occupied housing unit rate of 71.8%. The US Census reports a median value of owner-occupied housing units of $784,700 and a median gross rent of $2,544.

Current Housing Market Trends (2024–2025); Consistent with broader Southern California dynamics, Santa Clarita's for-sale market has remained relatively high-cost. Zillow reports a typical home value of $794,193 as of February 28, 2026, down 2.6% over the previous year.

Rental Market and Tenure: Santa Clarita's housing tenure pattern remains predominantly ownership-oriented. The Census reports an owner-occupied housing unit rate of 71.8% for 2020–

2024, implying that renter-occupied units account for roughly the remaining share of occupied housing. The median gross rent for the same period was $2,544.

Housing Characteristics and Affordability: Santa Clarita's residential areas are a mix of master-planned subdivisions, townhome and condominium neighborhoods, and multifamily development, with continued pressure to accommodate additional housing under the RHNA allocation. The average household size is 3.02 persons. Affordability remains a key issue: while the City's median household income was $123,062 in 2020–2024, both the Census median owner-occupied value of $784,700 and median gross rent of $2,544 indicate substantial housing costs for many households.

Housing and Occupancy Data – Most Recent Estimates

Metric	Value
Total housing units (ACS 1-year 2023)	79,065
Total households (ACS 2020–2024 5-year)	75,808 households
Owner-occupied housing rate (ACS 2020–2024)	71.8%
Median value of owner-occupied units (ACS 2020–2024)	784,700
Typical home value (Zillow ZHVI, early 2025)	$794,193
Median gross rent (ACS 2020–2024)	$2,544
Persons per household (ACS 2020–2024)	3.02 persons

2.7 Economy

Santa Clarita has a diverse economy with major activity in healthcare and social assistance, retail trade, education, advanced manufacturing, aerospace and defense, digital media and entertainment, and related professional and business services. City and regional economic development sources identify aerospace and defense, bio-tech and medical devices, digital media and entertainment, advanced manufacturing, information technology, and corporate/professional services as important industry clusters in Santa Clarita and the broader Santa Clarita Valley. In 2024, Data USA reported that approximately 114,000 people were employed in Santa Clarita, up 1.24 percent from 2023. Among employed residents, the largest industry sectors were Health Care & Social Assistance (16,612), Retail Trade (12,019), and Educational Services (11,192).

SCV Economic Development Corporation's 2025 largest-employers list identifies major private employers including Six Flags Magic Mountain (3,000 employees), Henry Mayo Newhall Memorial

Hospital (1,695), California Institute of the Arts (1,629), Logix (849), Woodward HRT (759), Walmart Supercenter (720), Princess Cruises (668), The Master's University and Seminary (664), Boston Scientific (649), Advanced Bionics (550), AMS Fulfillment (465), DrinkPAK (450), Sunkist Growers (425), and ITT Aerospace Controls (360). Major public and institutional employers include William S. Hart Union School District (2,049), College of the Canyons (1,829), the U.S. Postal Service SCV Processing and Distribution Center (1,158), and the City of Santa Clarita (1,154).[8]

In addition to established advanced-manufacturing firms, Santa Clarita is seeing energy-storage investment. A stand-alone, transmission-connected 80-megawatt Battery Energy Storage System (BESS) was approved in Canyon Country in 2021 – part of a growing clean-energy supply-chain presence in the valley.

Tourism and Hospitality: Tourism and hospitality continue to play an important role in Santa Clarita's economy, supported by regional attractions, outdoor recreation, events, filming activity, and a growing hotel market. Located just north of Los Angeles, Santa Clarita attracts visitors through destinations such as Six Flags Magic Mountain, Six Flags Hurricane Harbor, Old Town Newhall, and more than 100 miles of trails and open space. The community also hosts year-round events including the Cowboy Festival, Concerts in the Park, SENSES Block Party, sporting events, and film-related tourism experiences. The City's tourism efforts are supported through the Tourism Marketing District (TMD), which helps promote overnight visitation, hotel occupancy, and Transient Occupancy Tax (TOT) revenue while positioning Santa Clarita as a premier Southern California destination for leisure, outdoor adventure, entertainment, and family travel.

Santa Clarita continues to be recognized as one of California's premier filming destinations, offering a diverse range of cinematic landscapes, more than 50 sound stages, multiple movie ranches, and thousands of film-friendly locations all within the industry's Thirty-Mile Zone (TMZ). The City has built a reputation as a film-friendly community through streamlined permitting, competitive incentives, and a collaborative approach that supports productions while balancing neighborhood and business needs. In 2026, MovieMaker Magazine recognized Santa Clarita as the #5 Best Place to Live and Work as a Moviemaker among smaller cities and towns, making it the only California city featured in the category. The local film industry continues to generate significant economic activity, with the Santa Clarita Film Office processing 388 permits and facilitating 718 film days in 2025, resulting in an estimated $14.6 million in economic impact. Film

[8] Santa Clarita Valley Economic Development Corporation. (2025). Santa Clarita Valley's largest employers: 2025 edition. https://www.scvedc.org/blog/santa-clarita-valleys-largest-employers-2025-edition

production supports local jobs, drives spending at hotels, restaurants, and small businesses, and continues to showcase Santa Clarita to audiences worldwide through television, streaming, and feature film productions..

Retail and Commercial Services: Retail and commercial services remain central to Santa Clarita's economy and municipal revenue base. The City's FY 2025–26 budget states that sales tax is typically the City's leading General Fund revenue source, and the adopted budget projected $47.4 million in sales tax revenue for that year. SCV EDC's Q3 2025 snapshot also shows that taxable retail sales in the City remain a significant part of the local economy, even though general merchandise sales have softened from their late-2022 peak.

Healthcare and Social Services: Healthcare and social assistance are among the largest employment sectors for Santa Clarita residents. Data USA reports that in 2024 Health Care & Social Assistance was the city's largest resident employment sector, with 16,612 workers. Henry Mayo Newhall Hospital, located in Valencia, is a 357-bed, not-for-profit community hospital and trauma center serving the Santa Clarita Valley. SCV EDC's 2025 largest-employers list identifies Henry Mayo Newhall Hospital as one of the valley's largest employers, with about 1,695 employees.

Construction and Real Estate: Construction and real estate continue to play an important role in Santa Clarita's economy through residential development, commercial and industrial projects, tenant improvements, and public infrastructure investment. The City's FY 2025–26 budget reports that Building & Safety issued permits for more than $409 million in new construction in 2024. The City's Building & Safety page further states that in 2025 it issued 5,260 permits and performed 31,182 inspections for construction work totaling $488 million.

Logistics, Warehousing, and Manufacturing: Santa Clarita and the broader Santa Clarita Valley have a substantial industrial and manufacturing base. SCV EDC identifies advanced manufacturing, bio-tech and medical devices, aerospace and defense, digital media and entertainment, information technology, and corporate headquarters/professional services as major industry clusters. SCV EDC also notes that the valley has nearly 30 million square feet of industrial and commercial facilities and significant additional approved development, while its business-park materials emphasize access to Interstate 5, Route 14, Route 126, rail, ports, and airports.

Employment by Industry – Santa Clarita (ACS 2020–2024 DP03): Santa Clarita's civilian employed resident population age 16 years and over was 114,311 in the 2020–2024 ACS 5-year estimates. Based on the official DP03 grouped industry categories, the largest employment sectors were Educational services, and health care and social assistance (24.3%), Professional, scientific, and management, and administrative and waste management services (12.5%), and Retail trade (10.5%).

Industry	Number of Workers	Percent of Workforce
Agriculture, forestry, fishing and hunting, and mining	477	0.40%
Construction	6,050	5.30%
Manufacturing	10,527	9.20%
Wholesale trade	2,369	2.10%
Retail trade	12,019	10.50%
Transportation and warehousing, and utilities	5,702	5.00%
Information	5,944	5.20%
Finance and insurance, and real estate and rental and leasing	6,482	5.70%
Professional, scientific, and management, and administrative and waste management services	14,282	12.50%
Educational services, and health care and social assistance	27,804	24.30%
Arts, entertainment, and recreation, and accommodation and food services	10,877	9.50%
Other services, except public administration	5,066	4.40%
Public administration	6,712	5.90%
Total	**114,311**	**100.00%**

Source: U.S. Census Bureau, American Community Survey 2020–2024 5-Year Estimates, Table C24030 – Industry by Sex for the Civilian Employed Population 16 Years and Over.

2.8 Infrastructure

Electricity and Natural Gas: Electricity service in Santa Clarita is provided by Southern California Edison (SCE), which operates multiple substations and transmission corridors serving the Santa Clarita Valley and neighboring areas of northern Los Angeles County. Key facilities include the Santa Clarita Substation and Saugus Substation, which form part of SCE's 66-kV and 220-kV transmission network paralleling Interstate 5, State Route 14, and Newhall Ranch Road.

SCE performs ongoing five- and ten-year load forecasts to maintain reliability, support wildfire mitigation, and address population growth and electrification trends. The 2024–2030 SCE Grid Modernization Plan identifies portions of the Santa Clarita Valley within High Fire Threat District (Tier 2/Tier 3) zones, emphasizing:

- Vegetation management around critical lines,
- Expansion of covered conductor installations,
- Conversion of high-risk overhead lines to underground systems, and
- Deployment of sectionalizing switches and microgrid readiness features for critical facilities.

Natural gas service is provided by the Southern California Gas Company (SoCalGas), which operates major north–south transmission lines along I-5 and The Old Road corridor, and east–west mains serving communities along SR-14, Soledad Canyon, and Newhall Ranch Road. Distribution pipelines extend throughout residential, commercial, and industrial areas. SoCalGas maintains a Gas Transmission Integrity Management Program (GTIMP) and coordinates with SCV Water, Los Angeles County Fire Department, and City Emergency Management on seismic safety, leak detection, and emergency response measures, particularly due to the valley's proximity to the Santa Susana, San Gabriel, and Oat Mountain fault systems.

Water Infrastructure: Water service in Santa Clarita is provided by the Santa Clarita Valley Water Agency (SCV Water), a regional utility formed in 2018 through the merger of Castaic Lake Water Agency, Newhall County Water District, Santa Clarita Water Division, and Valencia Water Company. The agency provides water to approximately 81,000 service connections and serves a population of ≈289,000, encompassing both the City and unincorporated areas of the Santa Clarita Valley.

SCV Water's supply portfolio includes:

- Groundwater from the Santa Clara River Valley East Subbasin (managed under SGMA);
- Imported water from the State Water Project (SWP), conveyed through the California Aqueduct and treated at the Castaic Lake Filtration Plant; and
- Recycled water from the Valencia Water Reclamation Plant (WRP), used for non-potable irrigation at parks, schools, and landscaped medians.

According to SCV Water's 2020 Urban Water Management Plan (UWMP), recycled water deliveries are projected to reach 7,200 acre-feet per year by 2045, while groundwater extraction will be balanced to prevent overdraft and maintain basin sustainability.

Major distribution infrastructure follows Bouquet Canyon Road, Soledad Canyon Road, McBean Parkway, and Copper Hill Drive, with multiple booster stations, storage tanks, and transmission mains linking service zones. The 2023 Emergency Water Management Plan identifies vulnerabilities to earthquakes, power interruptions, and wildfire-related sedimentation in watershed areas.

SCV Water and the City jointly promote conservation through turf replacement, smart irrigation rebates, leak detection, and public education. Since 2015, the region has achieved more than a 25% reduction in per-capita potable water use, aligning with Senate Bill 606 and Assembly Bill 1668 efficiency standards.

Wastewater Infrastructure: Wastewater collection and treatment are managed by the Los Angeles County Sanitation Districts (LACSD), primarily Districts 26 and 32, which jointly operate the Valencia Water Reclamation Plant (WRP). The facility, located off The Old Road in Valencia, has a design capacity of 21.6 million gallons per day (MGD) and treats flows from both incorporated Santa Clarita and surrounding unincorporated communities.

Treated effluent is discharged under NPDES permits to the Santa Clara River or reused for irrigation through SCV Water's Recycled Water Master Plan. The collection system includes gravity mains (6–42 inches), reinforced concrete trunk sewers, and lift stations serving hilly areas such as Canyon Country, Plum Canyon, and Stevenson Ranch.

The Valencia WRP Advanced Water Purification Facility, currently in the design phase (2025 construction target), will expand non-potable reuse capacity and enable future indirect potable reuse (IPR) consistent with statewide Recycled Water Policy objectives.

Road and Highway Network: Santa Clarita's roadway system is anchored by Interstate 5 (Golden State Freeway) and State Route 14 (Antelope Valley Freeway), which meet near the Newhall Pass area and provide critical regional connections for commuter traffic, goods movement, and emergency access. Major east-west routes include Newhall Ranch Road / Golden Valley Road, which forms the Cross Valley Connector, as well as Soledad Canyon Road, Bouquet Canyon Road, and Copper Hill Drive, all of which support travel between the city's communities and connect to the broader regional circulation network. The fully completed Cross Valley Connector opened in March 2010 and is approximately 8.5 miles long, linking SR-14 and SR-126.

The City maintains approximately 537 centerline miles of roads and 115 signalized intersections within its jurisdiction. Santa Clarita also supports an extensive active transportation network, including approximately 80 miles of trails and 20 miles of paseos for commuting and recreational use.

The City continues to invest in roadway rehabilitation, bridge maintenance, circulation improvements, and stormwater-system upgrades to support the long-term functionality and resilience of the transportation network. These efforts include pavement preservation, bridge preventative maintenance, and drainage improvements such as catch-basin retrofit work. Collectively, these measures help reduce infrastructure degradation, support reliable access and mobility, and lessen the potential for localized flooding and debris-related impacts to roads and related facilities.

Public Transit: Public transit is operated by Santa Clarita Transit, providing:

- 11 fixed local routes,
- Commuter express service to Downtown Los Angeles and the San Fernando Valley, and
- Dial-A-Ride paratransit for seniors and individuals with disabilities.

Regional rail is served by Metrolink's Antelope Valley Line, with stations at Newhall, Santa Clarita (Soledad Canyon Road), and Via Princessa.

Fleet modernization is a key focus: 10 battery-electric buses entered service in 2023, with 12 more scheduled for 2025, supported by California's Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP) funding. The Transit Maintenance Facility (Constellation Road) is undergoing upgrades for solar generation and on-site charging infrastructure.

Active transportation planning continues under the Santa Clarita Non-Motorized Transportation Plan (2022 Update), adding 24 miles of new Class I and II facilities connecting neighborhoods, schools, parks, and transit nodes.

Stormwater and Flood Control: Stormwater management in Santa Clarita is a joint responsibility of the Los Angeles County Flood Control District (LACFCD) and the City's Department of Public Works. The Santa Clara River serves as the primary regional drainage corridor, augmented by tributary creeks – including San Francisquito, Bouquet Canyon, and Placerita Creeks – as well as detention basins and storm drain systems across the valley.

The Santa Clara River Watershed Management Group guides compliance with Los Angeles Regional Water Quality Control Board stormwater standards. Notable infrastructure and projects include:

- South Fork Santa Clara River Channel Improvements, providing 100-year flood protection for central Valencia;
- San Francisquito Creek Restoration and Flood Control Project, in partnership with the U.S. Army Corps of Engineers;

- Bouquet Canyon Debris Basin upgrades, improving post-fire sediment capture and downstream safety.

After Tropical Storm Hilary (August 2023), the City performed detailed storm damage assessments along Soledad Canyon and Sand Canyon corridors; FEMA Public Assistance funding was secured for culvert rehabilitation and slope stabilization.

The City's 2019 Storm Drain Master Plan highlights recurrent ponding and localized flooding on Lyons Avenue, Sierra Highway, and Wiley Canyon, which are prioritized for retrofit with green infrastructure and Low-Impact Development (LID) strategies. Community feedback during the LHMP engagement process emphasized the potential for bioswales, infiltration basins, and wetland restoration along tributaries to improve both flood resilience and water quality.

2.9 Historically Vulnerable Populations

Low-Income Residents (Major Hazards: Extreme Heat, Drought, Earthquake, High Wind/Storms): Approximately 7.4% of Santa Clarita residents live below the federal poverty level based on the 2020–2024 ACS 5-year estimates, representing roughly 16,000–17,000 residents. Although this rate is lower than the broader Los Angeles County and California averages, it still represents a substantial population with limited financial capacity to prepare for and recover from disasters.

Lower-income households are more likely to experience housing cost burdens, limited insurance coverage, and reduced access to preparedness resources such as generators, air filtration systems, or evacuation transportation. Some older housing areas may lack modern insulation, cooling systems, or seismic upgrades, increasing vulnerability during extreme heat events or earthquakes. In addition, longer commute distances can increase exposure to transportation disruptions during wildfires, severe weather, or infrastructure failures.

Elderly Individuals (Major Hazards: Earthquake, Power Outages, Infectious Disease): Residents aged 65 and older account for approximately 13% of Santa Clarita's population according to the 2020–2024 ACS estimates. Older adults are particularly susceptible to heat-related illness, smoke exposure, and medical complications during extended power outages, especially when electricity-dependent medical devices are required.

Mobility limitations and social isolation can also make evacuation during earthquakes or wildfires more difficult, particularly for individuals living alone. Local emergency planning efforts emphasize cooling centers, wellness checks, and continuity-of-power planning through coordination between

City Emergency Management, the Los Angeles County Functional Needs Support Services (FNSS) framework, and community partners such as Henry Mayo Newhall Hospital and the SCV Senior Center.

People with Disabilities (Major Hazards: Earthquake, Power Outages): Approximately 6% of residents under age 65 report at least one disability according to ACS 2020–2024 estimates. Disabilities include mobility, sensory, cognitive, and self-care limitations, which can hinder evacuation, access to shelters, or receipt of emergency communications.

Disasters may also disrupt assistive technologies, medical equipment, and mobility aids, increasing life-safety risks during prolonged emergencies. Santa Clarita's Emergency Operations Plan incorporates ADA-compliant sheltering standards, accessible communications, and transportation coordination with organizations such as Access Services Los Angeles, Santa Clarita Transit Dial-A-Ride, and the Independent Living Center of Southern California to maintain service continuity during emergency events.

Minority Communities (Major Hazards: Earthquake, Fire, Power Outage): Minority and immigrant households may experience language barriers, healthcare access inequities, and economic disparities, which can increase vulnerability during disasters. Employment patterns in construction, hospitality, retail, and logistics sectors also increase exposure to extreme heat and air-quality hazards.

To address these challenges, the City and County coordinate multilingual emergency notifications through Alert LA County, ReadyLA, and Santa Clarita emergency communication systems, providing alerts in Spanish, Tagalog, and other commonly spoken languages. Outreach and preparedness education are also conducted through community organizations including Bridge to Home, the Boys & Girls Club of Santa Clarita Valley, and the Santa Clarita Valley Chamber of Commerce Latino Business Alliance.

Unhoused Populations (Major Hazards: Extreme Heat, Drought, Fire, High Wind/Storms, Infectious Disease/Pandemic): The 2023 Greater Los Angeles Homeless Count conducted by LAHSA identified approximately 287 individuals experiencing homelessness in the Santa Clarita Valley area. People experiencing homelessness face elevated exposure to extreme heat, wildfire smoke, storms, and infectious disease, often lacking consistent access to shelter, healthcare, and emergency communications.

The City collaborates with Bridge to Home, the Los Angeles County Homeless Initiative, and the Santa Clarita Valley Sheriff's Station Mental Health Evaluation Team (MET) to provide outreach, emergency shelter, and health services during extreme weather and disaster events. During extreme heat and poor air-quality days, the City establishes temporary cooling and clean-air centers at community centers and libraries, with additional support from the Los Angeles County Department of Public Health (DPH) for medical outreach.

Social Vulnerability Index: The Social Vulnerability Index (SVI) is a tool developed by the Centers for Disease Control and Prevention (CDC) and the Agency for Toxic Substances and Disease Registry (ATSDR) to identify communities that may require additional support before, during, and after disasters. The index ranks census tracts on a scale from 0 to 1, with higher values indicating greater social vulnerability.

SVI is calculated using 15 socioeconomic and demographic variables grouped into four major themes:

- Socioeconomic Status (poverty, unemployment, income, education)
- Household Composition and Disability (age 65+, age 17 and under, disability, single-parent households)
- Minority Status and Language
- Housing Type and Transportation

These indicators help identify populations that may face challenges related to evacuation, access to emergency information, transportation limitations, housing instability, and post-disaster recovery capacity.

Across Santa Clarita, SVI values range from approximately 0.08 (very low vulnerability) in portions of Valencia to about 0.67 (moderate-high vulnerability) in parts of Newhall, Canyon Country, and central Saugus, reflecting localized concentrations of lower-income households, renters, and linguistically isolated populations.

Population Group	Representative SVI Score (0–1)	Description of Vulnerability
Low-Income Residents	0.54	Although lower than county and statewide averages, localized concentrations occur in parts of Newhall and Canyon Country, where older housing stock and higher rent burdens may limit resources for preparedness, insurance coverage, and post-disaster recovery.
Elderly Individuals (Age 65+)	0.63	Older adults may face mobility limitations, social isolation, and increased health risks during extreme heat, wildfire smoke events, earthquakes, or extended power outages, particularly when electricity-dependent medical devices are required.

Population Group	Representative SVI Score (0–1)	Description of Vulnerability
People with Disabilities	0.58	Disabilities affecting mobility, sensory perception, cognition, or self-care may hinder evacuation, access to emergency communications, and continuity of medical equipment during disasters or power outages.
Minority Communities	0.49	Language barriers, economic disparities, and employment in outdoor or service-sector occupations can increase exposure to hazards such as extreme heat and wildfire smoke.
Unhoused Populations	0.72	The 2023 Greater Los Angeles Homeless Count identified approximately 287 individuals experiencing homelessness in the Santa Clarita Valley area. People experiencing homelessness face heightened exposure to extreme heat, storms, wildfire smoke, and infectious disease, and may have limited access to shelter, healthcare, and emergency communications.

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SECTION 3 – HAZARD IDENTIFICATION AND RISK ASSESSMENT

Element B: Risk Assessment Requirements
B1. Does the plan include a description of the type, location and extent of all natural hazards that can affect the jurisdiction? Does the plan also include information on previous occurrences of hazard events and on the probability of future hazard events? (Requirement 44 CFR § 201.6(c)(2)(i))

This section identifies and evaluates the natural and human-caused hazards that pose the greatest risk to the City of Santa Clarita. Building on the community profile in Section 2, it examines the type, location, extent, and historical occurrence of each hazard, while also considering the probability of future events and the ways changing conditions may affect risk over time.

3.1 Introduction

3.1.1 Purpose of the Risk Assessment

The risk assessment process aligns with federal and state regulatory requirements, including the Disaster Mitigation Act of 2000 (DMA 2000) (44 CFR §201.6), which mandates that local jurisdictions conduct a comprehensive, forward-looking risk assessment to maintain eligibility for FEMA's Hazard Mitigation Assistance (HMA) grant programs. Additionally, the assessment incorporates climate adaptation planning requirements outlined in FEMA's 2023 Local Mitigation Planning Policy Guide and California Government Code §65302(g), ensuring integration with state-mandated safety and resilience planning.

From a technical perspective, the risk assessment evaluates hazard probability, severity, and cascading impacts using a multi-layered analytical framework that integrates historical disaster data and FEMA disaster declarations as well as climate projections and future risk modeling.

3.1.2 FEMA Requirements and Compliance

The City of Santa Clarita's risk assessment and hazard mitigation planning efforts are guided by federal regulations established under the Disaster Mitigation Act of 2000 (DMA 2000) (Public Law

106-390), which amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5121 et seq.). These regulations, codified in Title 44 of the Code of Federal Regulations (CFR) Part 201, require local jurisdictions to develop and maintain a FEMA-approved Local Hazard Mitigation Plan (LHMP) to remain eligible for federal hazard mitigation funding, including grants under the Hazard Mitigation Grant Program (HMGP) and Flood Mitigation Assistance (FMA) Program, among others.

To achieve compliance with 44 CFR §201.6, this plan includes a risk assessment (§201.6(c)(2)), defined as a comprehensive analysis of hazard exposure, vulnerability, and potential impacts on people, property, and critical infrastructure.

3.1.3 Relationship to Other Planning Elements

Hazard identification and risk assessment is a foundational component of the City of Santa Clarita's comprehensive planning framework, ensuring that hazard mitigation strategies are fully integrated into broader land use planning, emergency management, infrastructure investment, environmental sustainability, and climate adaptation efforts. This alignment strengthens the City's ability to reduce disaster risks, enhance community resilience, and optimize access to federal and state funding opportunities.

Federal and state regulations, including FEMA's Local Hazard Mitigation Plan (LHMP) requirements (44 CFR §201.6) and California Government Code §65302(g) (as amended by SB 379 and SB 1035), require jurisdictions to incorporate hazard mitigation and climate adaptation strategies into their General Plan Safety Element and other municipal planning documents. By fostering consistency across planning efforts, the City proactively integrates risk reduction principles into growth and development decisions, ensuring a safer, more resilient future.

3.1.4 Integration with Local and Regional Plans

The City's risk assessment is closely coordinated with the following local and regional planning efforts, ensuring a holistic, cross-sectoral approach to hazard mitigation and climate resilience:

General Plan Safety Element: Mandated by SB 379 and SB 1035, Santa Clarita's Safety Element incorporates hazard risk assessments, climate adaptation strategies, and emergency preparedness measures to reduce vulnerabilities related to earthquakes, wildfire, flooding/debris flows, extreme heat, and hazardous materials.

- Regular updates ensure alignment between the Safety Element and the LHMP, including integration with the City's land use, circulation, and open space policies to minimize exposure in very high fire hazard severity zones, flood-prone drainages, and steep hillside areas.

- Regional coordination occurs with the Los Angeles County Flood Control District (LACFCD) and Los Angeles County Department of Public Works, the Santa Clarita Valley Water Agency (SCV Water), and neighboring jurisdictions in the Santa Clarita Valley, particularly for Santa Clara River and tributary flood/stormwater projects and post-fire debris-flow risk reduction.
- County- and state-level guidance used to align the Safety Element and LHMP includes the 2020 County of Los Angeles All-Hazards Mitigation Plan and the 2023 California State Hazard Mitigation Plan, which provide hazard profiles, authorities, and funding frameworks referenced in this update.

Santa Clarita Valley Water Agency (SCV Water) Local Hazard Mitigation Plan: The SCV Water LHMP (January 2023) serves as the regional water sector hazard mitigation plan for the Santa Clarita Valley service area (approximately 195 square miles). It provides an integrated framework for identifying, assessing, and mitigating risks to potable water, recycled water, and treatment infrastructure.

- Key hazards addressed include:
  - Earthquake (primary hazard, high likelihood and consequence);
  - Wildfire and post-fire debris flows;
  - Drought and water supply shortages;
  - Flooding and storm-related damage;
  - Extreme heat and energy disruption;
  - Dam failure or pipeline rupture events.
- The SCV Water LHMP identifies over 30 priority mitigation actions, including seismic retrofits of major water transmission pipelines, backup power generation for critical wells and pumping stations, fire-resistant vegetation management around key facilities, and expansion of the Recycled Water Master Plan.
- The agency collaborates directly with the City of Santa Clarita, Los Angeles County, and the Santa Clarita Water service area to integrate emergency water supply and continuity of operations planning.
- During LHMP development, the City and SCV Water coordinated risk analyses and ensured data consistency in hazard mapping, including shared use of Cal OES's MyPlan GIS datasets, FEMA Risk MAP products, and Cal-Adapt climate scenarios.
- The two plans will remain synchronized through periodic updates and joint exercises under the Santa Clarita Valley Disaster Management Area (DMA-X) and Los Angeles County Operational Area coordination framework.

Emergency Operations Plan (EOP): The City's Emergency Operations Plan establishes protocols for disaster response and recovery and coordinates actions among City departments, Los Angeles County Fire Department, Los Angeles County Sheriff's Department (Santa Clarita Valley Station), County Office of Emergency Management, Cal OES, Metrolink, Caltrans District 7, and local nonprofit/community-based organizations.

- The LHMP risk assessment informs: (1) evacuation planning for at-risk populations along I-5/SR-14 corridors and canyon communities; (2) resource allocation for emergency services, cooling/clean-air centers, and sheltering; and (3) emergency communications to enhance public safety and continuity of operations – consistent with County AHMP coordination practices.

Capital Improvement Plan (CIP): The City's CIP prioritizes critical infrastructure investments that reduce vulnerability to identified hazards, with risk-informed selection criteria consistent with the General Plan and Safety Element. Investments include:

- Stormwater and channel improvements along the Santa Clara River and key tributaries (e.g., San Francisquito, Bouquet, Placerita Creeks), detention/water-quality basins, and culvert rehabilitation identified in local master planning;
- Bridge and roadway retrofits and reconstruction that address flooding/debris-flow conveyance and seismic safety along major arterials (e.g., Cross Valley Connector corridor);
- Backup power and microgrid readiness for essential facilities and shelters; and
- Green infrastructure/LID retrofits to manage short-duration, high-intensity rainfall highlighted in regional climate assessments.

Zoning and Building Codes: The City's zoning and development regulations incorporate hazard-mitigation and resilience standards, including siting and design policies for very high fire hazard severity zones (VHFHSZs), hillside development, and flood-hazard areas as outlined in the General Plan and Safety Element. The risk assessment directly informs:

- Seismic design and geotechnical requirements for new and substantially improved structures;
- WUI construction features and defensible-space considerations consistent with Cal Fire mapping and local adoption; and
- Integration of low-impact development and water-efficiency measures supporting SCV Water planning.

- Santa Clarita uses the 2022 California Building Code (CBC) and will implement the 2025 CBC upon statewide effectiveness to reflect the latest seismic, energy, and fire safety requirements. (State code adoption cycle applies uniformly to all California jurisdictions.)

Interagency Coordination: The City of Santa Clarita integrates its Local Hazard Mitigation Plan (LHMP) priorities through sustained collaboration with a broad range of regional, county, state, and federal partners. This coordination ensures that hazard mitigation, emergency management, and climate adaptation actions are consistent across jurisdictional and sectoral boundaries. Key partnerships include:

- Los Angeles County Office of Emergency Management (OEM) – supports disaster preparedness, coordination during multi-agency incidents, and mutual aid deployment throughout northern Los Angeles County.
- Santa Clarita Valley Water Agency (SCV Water) – primary partner for drought resilience, water reliability, and emergency response related to groundwater and State Water Project (SWP) supply disruptions.
- Los Angeles County Flood Control District (LACFCD) – collaborates with the City on stormwater management, drainage infrastructure upgrades, and Santa Clara River watershed planning.
- Southern California Edison (SCE) and Southern California Gas Company (SoCalGas) – coordinate on grid reliability, wildfire mitigation (Public Safety Power Shutoffs), and emergency energy restoration.
- Metrolink / Southern California Regional Rail Authority – ensures continuity of regional transit service and infrastructure safety along the Antelope Valley Line.
- Los Angeles County Fire Department (Battalion 6) and Sheriff’s Department (Santa Clarita Valley Station) – provide fire suppression, law enforcement, and coordinated evacuation planning.
- California Governor’s Office of Emergency Services (Cal OES) – provides funding, technical guidance, and regulatory alignment for hazard mitigation, including FEMA grant administration.
- Southern California Association of Governments (SCAG) – integrates transportation, air quality, and climate adaptation policy with Connect SoCal 2024 and regional resilience frameworks.
- Santa Clarita Valley Economic Development Corporation (SCVEDC) – collaborates on business continuity, critical infrastructure protection, and resilience planning for key employers and industrial zones.

- Neighboring jurisdictions – including the unincorporated communities of Castaic, Stevenson Ranch, and Agua Dulce – share mutual aid and joint planning for fire, flood, and transportation hazards.

3.1.5 Methodology and Data Sources

The risk assessment for Santa Clarita applies a comprehensive, multi-source analytical framework that integrates historic disaster data, probabilistic hazard modeling, geospatial exposure analysis, and climate projections. This approach ensures that the City's mitigation planning is data-driven, locally relevant, and consistent with federal and state standards.

The analysis follows FEMA's Local Hazard Mitigation Plan (LHMP) requirements (44 CFR §201.6) and California regulations governing the integration of hazard mitigation and climate adaptation into local planning frameworks, including:

- California Government Code §65302(g) (SB 379, SB 1035): requires inclusion of hazard mitigation and climate adaptation strategies within General Plan Safety Elements.
- California Adaptation Planning Guide (2020): provides standardized methods for evaluating climate-related hazard exposure, sensitivity, and adaptive capacity.
- Los Angeles County Multi-Jurisdictional Hazard Mitigation Plan (2020): establishes regional risk profiles for wildfire, earthquake, flood, and extreme heat affecting Santa Clarita and surrounding unincorporated areas.
- 2023 California State Hazard Mitigation Plan (SHMP): includes statewide hazard scenarios and climate projections relevant to Santa Clarita's seismic, wildfire, drought, and heat risks.
- SCV Water LHMP (FEMA-Approved, 2023): details local vulnerabilities related to drought, water supply reliability, and flood control infrastructure.
- Connect SoCal 2024 (SCAG): provides regional climate, transportation, and land use strategies supporting long-term hazard resilience.
- First Street Foundation Climate Risk Data (2025): offers probabilistic modeling of flood, wildfire, heat, and air quality impacts at the parcel scale for Santa Clarita.

3.1.6 Historic Disaster Declarations

Given the size and geographic diversity of Los Angeles County, this LHMP will not provide a list of all disaster declarations for the county. Historic disaster declarations may be found by specific hazard.

3.1.7 Consideration of Future Conditions and Changing Risks

Recognizing the increasing severity of climate-related hazards, this LHMP incorporates scientific projections from regional, state, and national climate assessments to ensure mitigation actions remain adaptive to evolving risk conditions.

Key Santa Clarita–specific projections include:

- First Street Foundation (2025):
  - Extreme Heat: Average of 7 days/year above 99°F rising to ~19 days/year by 2055 (+170%).
  - Flooding: ~10,500 properties (~21%) with measurable 30-year flood risk; pluvial (non-FEMA) flooding is a growing concern.
  - Wildfire: 100% of City properties exposed to some wildfire risk; 36,000+ rated severe.
- Cal-Adapt / California Fourth Climate Change Assessment (2018, updated 2024): Projects +4–8°F warming by 2100 and increased frequency of atmospheric rivers, raising risks of extreme heat, drought, and post-fire flooding.
- SCV Water 2020 Urban Water Management Plan: Identifies supply vulnerability to State Water Project curtailments, groundwater quality degradation, and climate-driven demand growth.
- Los Angeles County Climate Action and Adaptation Plan (2022): Highlights heat island mitigation, fire resilience, and transportation network adaptation as countywide resilience priorities relevant to Santa Clarita.

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3.2 Identifying Hazards

3.2.1 Definition of Hazards

For the purposes of the City of Santa Clarita's Local Hazard Mitigation Plan (LHMP), hazards are defined as natural, technological, or human-caused events that have the potential to cause loss of life, injury, property damage, economic disruption, and environmental degradation. These hazards can be categorized into two primary types:

- Chronic hazards are long-term, ongoing conditions that gradually impact the community over time. These include extreme heat, drought, air quality degradation, and water resource shortages, which accumulate over years or decades and exacerbate vulnerabilities.
- Acute hazards are sudden-onset, high-impact events that occur rapidly with little warning. These include earthquakes, flash floods, wildfires, hazardous materials spills, high-wind events, and power outages, which can cause immediate destruction and necessitate emergency response efforts.

3.2.2 Methodology for Hazard Selection

Hazards for the 2026 City of Santa Clarita LHMP were determined through a comprehensive review and engagement process that included:

- Reviewing hazards analyzed in the City's previous LHMP Update, Santa Clarita Valley Water Agency (SCV Water) LHMP (2023), the Los Angeles County Multi-Jurisdictional Hazard Mitigation Plan (2020), and the California State Hazard Mitigation Plan (2023);
- Screening all FEMA National Risk Index (NRI) hazards for local relevance; and
- Gathering input from City departments, partner agencies, and stakeholders during a multi-department hazard and vulnerability assessment workshop held in November 2025.

The National Risk Index identifies 18 specific hazards that may affect communities across the United States[9]. Not all of these hazards were determined to be applicable to Santa Clarita. Each hazard is addressed below along with justifications as to why they may not have been included.

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[9] Federal Emergency Management Agency. (2026). *National Risk Index for natural hazards*. U.S. Department of Homeland Security. https://www.fema.gov/flood-maps/products-tools/national-risk-index

Hazard	Included in Plan	Explanation
Avalanche	No	The City lies below the regional snowline and lacks terrain, elevation, or snowpack conditions conducive to avalanches.
Coastal Flooding	No	Santa Clarita is located approximately 35 miles inland from the Pacific Ocean and has no coastline or tidal interface; therefore, coastal flooding is not a relevant hazard.
Cold Wave	No	Prolonged subfreezing events are extremely rare; brief frost or light freeze may occur but do not pose significant life-safety or infrastructure risks.
Drought	Yes	Multi-year droughts periodically reduce groundwater recharge and imported State Water Project supplies. Drought also heightens vegetation stress, wildfire potential, and regional water reliability challenges.
Earthquake	Yes	The City lies near several active fault systems – including the San Gabriel, Santa Susana, and Sierra Madre Faults – with potential secondary influence from the San Andreas system. Strong ground shaking and lifeline disruption represent major hazards.
Hail	No	Hail events are infrequent and typically minor; associated damage is limited to vegetation and vehicles. Wind and precipitation effects are addressed under “High Wind/Storms.”
Heat Wave	Yes	Inland valley conditions produce frequent high-temperature days. First Street Foundation projects an increase from ~7 to ~19 days > 99°F by 2055 (+170%). High heat elevates health, grid, and infrastructure risks, particularly for outdoor workers, seniors, and unhoused residents.
Hurricane	No	Landfalling hurricanes are exceedingly rare in Southern California; however, tropical remnants such as Tropical Storm Hilary (2023) have produced significant rainfall and flooding, which are addressed under “Flooding / High Wind Storms.”
Ice Storm	No	Local climatology does not support freezing rain or ice accumulation; not a consequential hazard for Santa Clarita operations or mobility.
Landslides	Yes	Steep slopes in Placerita Canyon, San Francisquito Canyon, Bouquet Canyon, and Mint Canyon are susceptible to shallow slides and post-fire debris flows during intense rain or atmospheric river (AR) events.
Lightning	No	Thunderstorms occasionally occur but damaging lightning strikes are rare; impacts (fires, outages) are captured under “High Wind/Storms.”

Riverine Flooding	Yes	The Santa Clara River and tributaries (San Francisquito, Bouquet, Placerita Creeks) produce riverine and pluvial flood risks.
Strong Wind	Yes	Santa Ana and frontal wind events frequently exceed 60 mph, causing tree damage, power outages, and wildfire spread. SCE grid modernization and PSPS protocols reduce but do not eliminate risk.
Tornado	No	Tornadoes are extremely rare and weak (typically EF0–EF1) in the region; not a planning-priority hazard.
Tsunami	No	The City's inland location eliminates exposure to tsunami or coastal surge hazards.
Volcanic Activity	No	There are no active or potentially active volcanic centers within the region that could affect Santa Clarita.
Wildfire	Yes	Santa Clarita has extensive Wildland-Urban Interface (WUI) exposure in foothill and canyon zones.
Winter Weather	No	Snow and ice accumulation are rare below 2,000 ft; minimal disruption potential compared to heat, fire, or flood hazards.

To ensure accuracy, regulatory alignment, and scientific consistency, the Planning Team used data and methodologies from the following authoritative sources:

- FEMA Local Mitigation Planning Policy Guide (2025) and National Risk Index (NRI)
- USGS Earthquake Hazards Program – regional fault mapping, ground-shaking models, and liquefaction susceptibility
- NOAA/NCEI Storm Events Database and National Weather Service (NWS) Oxnard/Los Angeles climate data
- California State Hazard Mitigation Plan (2023) and Adaptation Planning Guide (2020)
- CAL FIRE (2022) Fire Hazard Severity Zone maps for wildland–urban interface exposure
- Los Angeles County All-Hazards Mitigation Plan (2020) and Santa Clara River Watershed MS4 programs
- Santa Clarita Valley Water Agency (SCV Water) LHMP (2023) and Urban Water Management Plan (2020)
- City of Santa Clarita General Plan Safety Element (2024), Storm Drain Master Plan (2019), and Capital Improvement Program (CIP 2024–2029)
- SCAG Connect SoCal 2024 – transportation and climate-resilience framework
- First Street Foundation Risk Factor Data (2025) – parcel-level probabilistic models for flood, wildfire, extreme heat, and air-quality risk
- Cal-Adapt / California Climate Assessments – downscaled projections for temperature rise, precipitation variability, and wildfire frequency

3.2.3 Methodology

In November 2025, the City convened a hazard and vulnerability assessment workshop with internal departments and key partners. Participants reviewed historical impacts, current conditions, and future climate stressors, then scored each hazard using a Modified Critical Priority Risk Index (CPRI) that weights both present and future risk:

The Modified CPRI is calculated in the following manner:

*((Severity (Present)*0.3)+(Probability (Present)*0.45)+(Severity (Future)*0.3)+(Probability (Future)*0.45))*

This approach augments the traditional CPRI by explicitly elevating future probability and severity (e.g., extreme heat, atmospheric river precipitation, and post-fire debris flows) consistent with FEMA's climate-informed risk guidance and California's adaptation frameworks.

This LHMP will use the following definitions throughout Section 3 to allow policymakers and planners to use the LHMP to inform City priorities and planning decisions:

Probability	Definition
Very Unlikely	Less than 5% probability of occurrence
Unlikely	Greater than 5% and less than 30% probability of occurrence
Moderate	Greater than 30% and less than 60% probability of occurrence
Likely	Greater than 60% and less than 95% probability of occurrence
Very Likely	Greater than 95% probability of occurrence

3.3 Hazard Profiles

The 2026 Santa Clarita LHMP Update process identified the following hazards as worthy of comprehensive hazard analysis:

Hazard	Severity (Present)	Probability (Present)	Severity (Future)	Probability (Future)	Modified CPRI
Wildfire	5	5	5	5	**7.5**
Power Outage	4	5	5	5	**7.2**
Extreme Heat	4	4	5	5	**6.75**
Earthquake	5	4	5	4	**6.6**
High Wind / Storms	4	4	4	5	**6.45**
Air Quality	4	4	5	4	**6.3**
Flooding	4	3	5	4	**5.85**
Drought	3	4	4	4	**5.7**
Hazardous Materials Release / Transportation Accidents	4	3	4	4	**5.55**
Landslides	3	3	4	4	**5.25**
Dam Failure	4	2	4	3	**4.65**
Epidemic/Pandemic	4	2	4	2	**4.2**

Severity & Probability Scores

1 - Negligible
2 - Minor
3 - Moderate
4 - Major
5 - Extreme

Hazard descriptions are ordered in Modified CPRI ranking order.

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3.3.1 Wildfire

3.3.1.1 Description

Urban and wildland-urban interface (WUI) fires in Santa Clarita occur across a mix of densely developed residential, commercial, and open-space environments. The City faces significant wildfire risk due to its location at the confluence of multiple canyons and foothills within northern Los Angeles County, including Placerita Canyon, San Francisquito Canyon, Bouquet Canyon, Sand Canyon, and Mint Canyon. The combination of extensive natural vegetation, steep topography, and seasonal Santa Ana winds contributes to one of the most prominent hazards affecting the community.

Santa Clarita is characterized by suburban neighborhoods interspersed with chaparral-covered hillsides and extensive undeveloped open space. These conditions create significant wildland–urban interface (WUI) exposure where residential development directly abuts fire-prone wildlands.

According to the 2025 Recommended Fire Hazard Severity Zone (FHSZ) maps released by the California Department of Forestry and Fire Protection (CAL FIRE), large portions of the Santa Clarita Valley remain classified within the State's highest wildfire hazard categories[10]. Based on prior adopted mapping and City planning analyses, approximately 31 percent of Santa Clarita's land area falls within Very High Fire Hazard Severity Zones (VHFHSZ). These zones are concentrated primarily along the northern and eastern portions of the City, including foothill communities in Canyon Country and Saugus and areas adjacent to the Angeles National Forest.

Wildfire hazard in these areas is influenced by steep terrain, dense chaparral fuel types, prolonged drought conditions, and seasonal Santa Ana wind events that can rapidly drive fire spread across canyon landscapes. As a result, development along the WUI faces elevated risk from fast-moving wildfires, ember intrusion, and evacuation constraints typical of canyon-edge communities.

Wildfire Risk and Drivers: According to the First Street Foundation (2025) Wildfire Risk Report, 100% of properties in Santa Clarita face at least some level of wildfire exposure, with approximately 36,200 properties (≈16%) classified as "Severe" risk over the next 30 years. The most vulnerable areas include:

[10] California Department of Forestry and Fire Protection, Office of the State Fire Marshal. (n.d.). *Fire Hazard Severity Zones*. State of California. Retrieved June 5, 2026, from https://osfm.fire.ca.gov/what-we-do/community-wildfire-preparedness-and-mitigation/fire-hazard-severity-zones

- Canyon Country (Sand Canyon, Fair Oaks Ranch, and Mint Canyon),
- Placerita and San Francisquito Canyons,
- Saugus and Valencia WUI edges, and
- Areas adjacent to the Angeles National Forest boundary.

Recurring wind-driven fires – including the 2007 Buckweed Fire, 2016 Sand Fire, 2019 Tick Fire, 2022 Route Fire, and 2023 Agua Dulce brush fires – have burned tens of thousands of acres, destroyed homes, and periodically closed major highways such as Interstate 5 and State Route 14, disrupting regional mobility and emergency response.

Ignition Sources and Contributing Factors: Several key factors contribute to Santa Clarita's fire risk:

- Electrical Infrastructure: Multiple Southern California Edison (SCE) transmission corridors and substations traverse high fire-threat areas. Public Safety Power Shutoffs (PSPS) are periodically used to prevent ignition during high-wind events[11].
- Transportation Corridors: Major highways (I-5, SR-14, SR-126) experience high traffic volumes and have historically been ignition sites due to vehicle fires, brake sparks, or mechanical failures.
- Urban Fuels: Landscaping vegetation, dry grass, and ornamental trees – including non-native eucalyptus and palm species – serve as fire carriers between developed areas and adjacent open space.
- Climate Stressors: Longer, hotter summers and multi-year droughts have dried regional vegetation. Cal-Adapt (2024) projects an increase in the number of high fire danger days per year by 20–30% by mid-century.

Air Quality Impacts: Wildfire smoke significantly affects air quality across the Santa Clarita Valley. During major regional events (e.g., the 2020 Bobcat and Lake Fires, the 2022 Route Fire), Santa Clarita experienced Air Quality Index (AQI) readings exceeding 200 ("Very Unhealthy"), with fine particulate matter ($PM_{2.5}$) concentrations reaching hazardous levels.

According to South Coast Air Quality Management District (SCAQMD) monitoring and First Street Foundation air quality modeling, wildfire smoke contributes to increasing regional health risks, especially for vulnerable populations such as older adults, children, and outdoor workers. Santa

[11] Southern California Edison. (n.d.). Wildfire mitigation plan and related documents. Retrieved June 5, 2026, from https://www.sce.com/outages-safety/wildfire-safety/wildfire-mitigation-plan-documents

Clarita experiences an average of 15–25 days per year of “Unhealthy” AQI, with projections indicating further increases by 2050 under worsening climate conditions.

Urban Fire Risks: While wildland fires are the dominant concern, urban fires also occur within Santa Clarita’s commercial and residential districts. Risks arise from:

- Electrical malfunctions,
- Mechanical failures in industrial operations (e.g., manufacturing, logistics, and food processing facilities in the Valencia Industrial Center),
- Older building stock lacking fire-resistant construction, and
- Transportation-related incidents involving hazardous cargo.

The City is also crossed by multiple high-voltage power lines, which, during periods of high wind and extreme heat, can contribute to ignition if lines are damaged or vegetation contact occurs.

3.3.1.2 Location and Geographic Extent

Santa Clarita faces significant wildfire hazards shaped by its land use patterns, topography, transportation and energy infrastructure, and proximity to large tracts of wildland vegetation within the Angeles National Forest and surrounding foothills. The City is located in a region characterized by extensive Wildland-Urban Interface (WUI) zones, where suburban and rural development intermingle with chaparral, oak woodland, and grassland ecosystems that are highly susceptible to ignition during Santa Ana wind events.

According to CAL FIRE’s 2022 Fire Hazard Severity Zone (FHSZ) maps, approximately 31% of Santa Clarita’s total land area – primarily on the northern, eastern, and southern periphery of the City – is classified as “Very High Fire Hazard Severity Zone” (VHFHSZ) within the Local Responsibility Area (LRA). Additional lands to the north and east fall within State Responsibility Areas (SRAs) under CAL FIRE jurisdiction, including portions of Canyon Country, Sand Canyon, and Placerita Canyon. The First Street Foundation’s 2025 Wildfire Risk Assessment further identifies that 100% of properties within the City have measurable wildfire exposure, with approximately 36,200 properties (≈16%) classified as “Severe” or higher risk over the next 30 years.

Wildfire hazard areas within Santa Clarita can be categorized into four primary risk zones:

1. Wildland-Urban Interface (WUI) and Hillside Residential Areas: The most prominent fire exposure exists in the eastern and northern portions of the City, where residential development borders steep canyons and open space. Key WUI and hillside fire risk areas include:

- Sand Canyon and Fair Oaks Ranch – dense vegetation, steep topography, and limited ingress/egress routes.
- Placerita Canyon and San Francisquito Canyon – historic fire corridors impacted by the Buckweed (2007) and Sand (2016) fires.
- Bouquet Canyon, Plum Canyon, and Skyline Ranch – newer subdivisions located near or adjacent to high fire hazard areas designated by CAL FIRE.
- Mint Canyon and Soledad Canyon corridors – at-risk zones for slope ignition and post-fire debris flows.

These areas have historically faced significant wildfire activity, with the Sand Fire (2016) burning over 41,000 acres, the Tick Fire (2019) threatening thousands of homes and forcing ~40,000 evacuations, and the Route Fire (2022) closing Interstate 5 and triggering widespread PSPS-related outages.

2. Commercial and Industrial Fire Risk Areas: Santa Clarita's extensive commercial, office, and industrial corridors, particularly in Valencia, Centre Pointe, and the Rye Canyon / Commerce Center area, present concentrated structural fire and secondary ignition risk. Key hazard factors include:

- Aging electrical systems and densely packed facilities in legacy industrial parks;
- Hazardous materials and flammable substances used in logistics, beverage manufacturing, and medical device production (e.g., DrinkPAK, Boston Scientific, Advanced Bionics, Woodward HRT);
- Proximity to WUI edges, where urban-industrial zones abut open space and natural vegetation, increasing the likelihood of urban-wildfire interface fires.

While the Los Angeles County Fire Department, Division 3 reports high overall compliance with fire safety codes, localized risks persist in mixed-use areas where commercial structures are interspersed with residential or undeveloped parcels.

3. Transportation Corridor Ignition Hazards: High-use transportation corridors that traverse steep or vegetated terrain act as recurring ignition sources. These include:

- Interstate 5 (I-5) – multiple historical fire starts along steep embankments between Newhall Pass and Castaic (e.g., Route Fire 2022, Castaic Fire 2023).

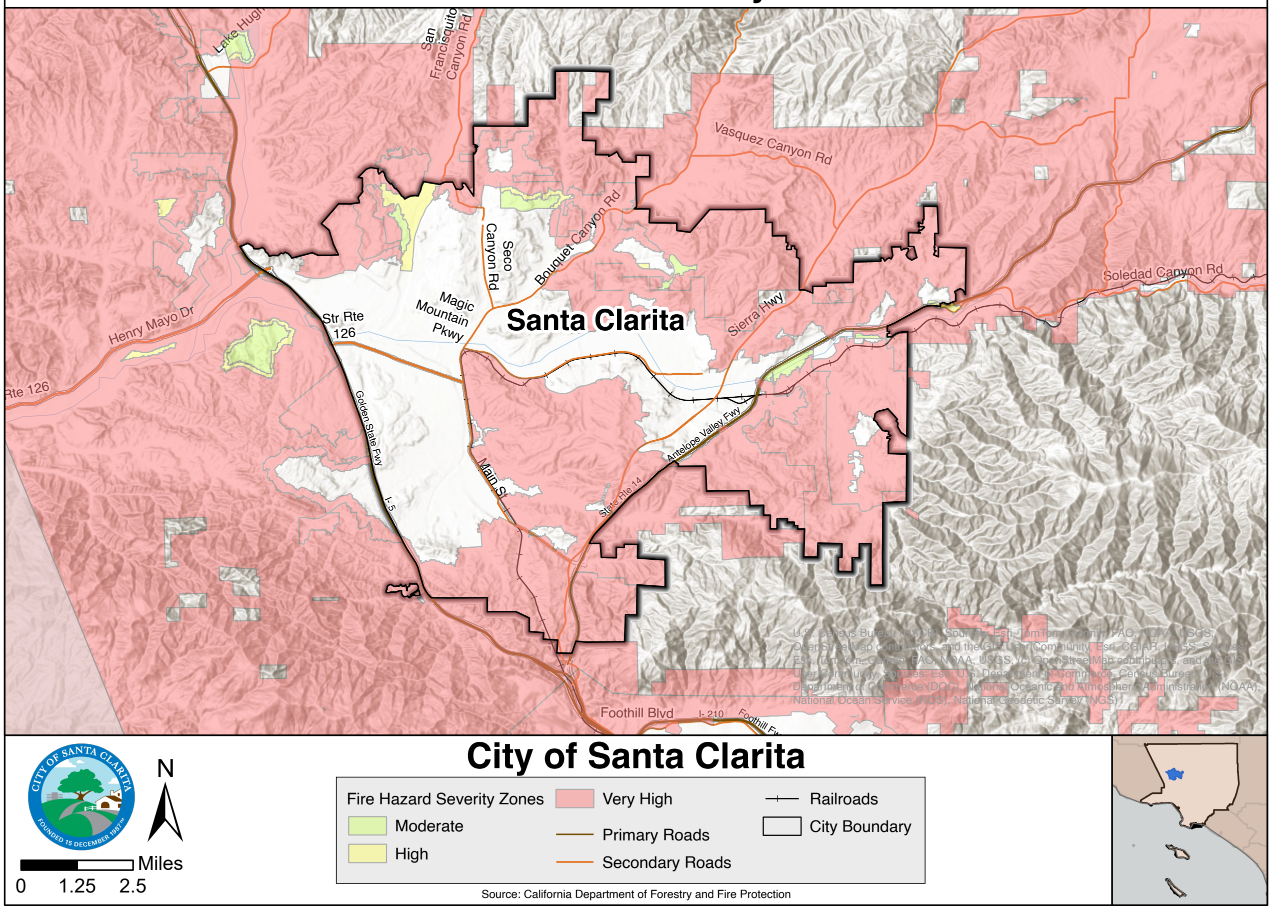
- State Route 14 (Antelope Valley Freeway) – a major north-south commuter corridor passing through rugged, fire-prone terrain; frequent vehicle fires and brake-related ignitions are recorded annually by Caltrans District 7.
- State Route 126 (SR-126) – connects the Santa Clarita Valley with Ventura County, traversing fire-sensitive canyon landscapes.
- Union Pacific Railroad corridor – follows the Santa Clara River, where sparks from wheel friction or maintenance operations can ignite adjacent brush during drought or red-flag conditions.

`Combined with the valley's frequent 40–70 mph Santa Ana gusts, these transportation-related `ignition corridors are among the most common causes of fire starts within and around the City.

4. Utility Infrastructure and Energy Corridors: Santa Clarita is traversed by Southern California Edison (SCE) electrical infrastructure, including multiple high-voltage transmission lines and substations. The Santa Clarita, Saugus, and Valencia substations are identified by SCE's 2024–2030 Grid Modernization Plan as part of Tier 2 and Tier 3 High Fire Threat Districts (HFTD), requiring enhanced vegetation clearance and covered conductor installation.

Public Safety Power Shutoffs (PSPS) are periodically implemented in Canyon Country, Placerita Canyon, and Sand Canyon during elevated fire weather, reducing ignition risk but disrupting power to thousands of customers. Additionally, Southern California Gas Company (SoCalGas) pipelines cross the valley in parallel with SR-14 and I-5, necessitating close coordination between utility operators and emergency management for fire safety and post-event recovery.

Fire Hazard Severity Zones



Secondary Hazards: Ember Transport, Air Quality, and Post-Fire Flooding: Even areas outside mapped VHFHSZs remain exposed to secondary fire effects. Embers from large regional wildfires – often carried miles ahead of the flame front – can ignite rooftops, fences, and ornamental vegetation within the City's urban core. During Santa Ana events, embers from wildfires in the Angeles National Forest, Simi Hills, or Castaic foothills have historically triggered small spot fires in Saugus, Newhall, and Valencia.

Post-fire debris and sediment flows pose an increasing threat to downstream neighborhoods. Following the Sand Fire (2016) and Tick Fire (2019), flash floods and sediment deposition occurred in Soledad Canyon and Placerita Creek, prompting the City and Los Angeles County Flood Control District to reinforce culverts and sediment basins under the Storm Drain Master Plan (2019).

Extent of Risk: Wildfire risk in Santa Clarita extends across the entire 70-square-mile City area, though intensity and recurrence vary significantly by location:

- Very High Fire Hazard Severity Zones (31%) – primarily in Canyon Country, Sand Canyon, San Francisquito Canyon, and the northern Saugus highlands.
- Moderate to High Risk (≈45%) – transitional urban areas adjacent to open space or transportation corridors.
- Lower Risk (≈24%) – built-out urban core and commercial centers with low vegetative fuel but potential for ember intrusion and smoke impacts.

Overall, Santa Clarita's wildfire hazard is regional in scale, intersecting both local and state fire management jurisdictions, and intensified by climate-driven increases in temperature, drought, and wind events.

Relationship to Land Use and Development: The distribution over the past four decades, Santa Clarita has transitioned from a primarily rural and agricultural valley to one of Southern California's fastest-growing suburban centers, with extensive residential, commercial, and light industrial development situated directly adjacent to high-fire-risk terrain. This development pattern – expanding eastward and northward into canyon and hillside areas – has established a pronounced Wildland-Urban Interface (WUI) throughout the City, creating overlapping human and environmental fire hazards.

Since incorporation in 1987, Santa Clarita's population has more than doubled – from approximately 110,000 to over 229,000 residents (2024 est., ACS) – driven by master-planned growth in Valencia, Saugus, Canyon Country, and Newhall. Much of this expansion has occurred at the edge of fire-prone landscapes, where housing tracts are interlaced with natural drainages, hillsides, and open-space buffers that, while aesthetically and environmentally valued, also act as continuous fuel corridors under extreme weather conditions.

The City's Open Space Preservation District have preserved large areas of natural land, creating permanent greenbelts around urban neighborhoods. However, this pattern – designed to limit sprawl and maintain scenic character – has also led to development immediately abutting brush-covered ridgelines and canyons. Areas such as Sand Canyon, Plum Canyon, Fair Oaks Ranch, and Skyline Ranch exemplify this dynamic: they are high-value residential zones that also lie within or adjacent to CAL FIRE's Very High Fire Hazard Severity Zones.

According to First Street Foundation's 2024 wildfire model, nearly 36,200 structures (≈16% of all properties) in Santa Clarita are rated at "Severe" or higher wildfire risk, primarily in newly urbanized canyons and foothill tracts developed post-2000. Many of these communities are designed with modern building materials and defensible space standards, yet their location at the urban fringe continues to expose them to wind-driven embers and topographically channeled fire spread.

Santa Clarita's land use map reveals distinct correlations between development intensity and fire hazard zones:

- High Fire Hazard Zones (31% of total land area) are concentrated in northern and eastern Santa Clarita, overlapping residential hillside development, utility corridors, and undeveloped open space.
  - Notable neighborhoods within these zones include Canyon Country, Sand Canyon, San Francisquito Canyon, and Placerita Canyon.
  - These areas contain steep slopes and narrow roadways, limiting evacuation access and increasing firefighting challenges.
- Moderate Hazard Zones intersect with transitional residential and mixed-use areas, such as Valencia, Saugus, and portions of Newhall, where infill and commercial redevelopment have intensified urban density near the WUI edge.
  - These zones include older housing stock (1970s–1990s) built prior to modern fire-resistant codes and lacking ember-resistant vents or Class A roofs.
  - Ongoing redevelopment efforts through Newhall's Specific Plan and Downtown Revitalization Program aim to reduce structural vulnerabilities through code modernization.
- Low Hazard Zones, primarily in Central Valencia and the commercial core, feature dense urban form, irrigated landscapes, and minimal vegetation. While direct fire risk is lower, these areas remain vulnerable to smoke exposure, PSPS-related power disruptions, and indirect air-quality impacts during regional wildfires.

Santa Clarita's commercial and industrial development – including the Valencia Industrial Center, Centre Pointe, and Commerce Center Drive corridor – plays a dual role in fire exposure. These zones contain high-value industrial assets and critical employers such as DrinkPAK, Boston Scientific, Advanced Bionics, and Woodward HRT, which handle flammable substances, electrical systems, and mechanical processes that increase structural fire risk. Although these industrial districts are located primarily on the valley floor – away from the steepest slopes – they border transportation and utility corridors that serve as ignition sources, particularly under Santa Ana wind conditions.

The City's ongoing industrial expansion in the I-5 corridor (Valencia Gateway and Vista Canyon) has introduced new large-scale facilities in proximity to the Santa Clara River floodplain, a natural fuel corridor where wildfire and post-fire flooding risks converge. Land use planning documents increasingly emphasize fire-safe landscaping, access roads, and defensible space zones to mitigate these emerging hazards.

Transportation infrastructure defines much of Santa Clarita's fire hazard geography. The City's primary transportation routes – Interstate 5, State Route 14, and State Route 126 – follow or intersect natural canyon systems. These corridors serve as both lifelines and fire vectors. Vehicle fires, brake malfunctions, and roadside ignitions have repeatedly triggered major incidents such as the Route Fire (2022) and Castaic Fire (2023).

Adjacent development patterns – where residential and commercial properties cluster close to freeway embankments – amplify exposure to both fire starts and evacuation bottlenecks. Land use planning now integrates Caltrans fire ignition mitigation standards and brush clearance buffer zones into transportation-adjacent zoning overlays, particularly in Canyon Country and north Saugus.

Future development in Santa Clarita is guided by Connect SoCal 2024 and the City's One Valley, One Vision General Plan, both of which project continued infill development within existing urbanized areas and limited expansion at the WUI perimeter. However, several approved or planned projects – including Vista Canyon, Whittaker Bermite redevelopment, and North Valencia at Magic Mountain Parkway – remain near or within moderate-to-high fire hazard zones.

At the same time, the City's open space acquisitions through the Open Space Preservation District serve as both ecological and defensive assets. These undeveloped lands require vegetation management to prevent them from acting as contiguous fuel pathways into built areas during major fire events.

3.3.1.3 Magnitude and Severity of Fire Hazards

Fire Intensity and Structural Impact – Fire Intensity Scale (FIS): The Fire Intensity Scale (FIS) classifies fire severity based on energy release, flame length, and suppression difficulty. The City's fire hazards encompass both wildland fire events originating in canyon and hillside areas and structural or industrial fires in developed zones, with potential for high-intensity, fast-moving fire under extreme Santa Ana wind conditions.

Santa Clarita's wildfire intensity is strongly influenced by topography and vegetation type, which range from dense chaparral and oak woodland in the foothills to grasses and ornamental vegetation within developed areas.

- Class 1 (0-250 kW/m): Small, localized fires in structures or open areas that can be extinguished with standard firefighting methods. This category includes residential fires and minor vehicle fires.
- Class 2 (251-1,000 kW/m): Moderate-intensity fires, including commercial building fires and industrial storage yard fires, requiring coordinated suppression efforts.
- Class 3 (1,001-10,000 kW/m): Large warehouse or commercial center fires and wind-driven urban fires that require multi-agency response and pose risks to nearby structures.
- Class 4 (10,001-50,000 kW/m): Fires involving hazardous materials and fuel storage sites, generating toxic smoke and extreme heat, requiring specialized response.
- Class 5 (50,001+ kW/m): Large-scale conflagrations, including industrial explosions or catastrophic transportation-related fires, necessitating mass evacuations.

Wildfire Spread and Impact – National Fire Danger Rating System (NFDRS): The National Fire Danger Rating System (NFDRS) categorizes wildfire risk based on weather conditions, fuel moisture, and fire spread potential.

- Low: Fires spread slowly and are easily controlled, with minimal risk of regional impact.
- Moderate: Fires ignite in dry grass and urban vegetation, but spread is limited unless driven by high winds.
- High: Fires spread rapidly in dry conditions and can be intensified by ember transport. Wildfires from surrounding areas can contribute to structural ignitions.
- Very High: Fast-moving fires, especially during Santa Ana wind events, can ignite structures, vehicles, and industrial storage areas, requiring rapid emergency response.
- Extreme: Fires exhibit explosive growth, necessitating multi-agency firefighting efforts and evacuations. Embers can travel long distances and create widespread fire hazards.

Although Santa Clarita has a higher proportion of developed land than surrounding unincorporated areas, wildfire risk remains significant due to extensive WUI boundaries, prolonged drought conditions, and regional fire behavior influenced by Santa Ana winds. Under the National Fire Danger Rating System (NFDRS), which integrates weather, fuel moisture, and ignition potential, the Santa Clarita Valley routinely experiences “High” to “Very High” fire danger days (index values >80) between June and November.

Data from the Los Angeles County Fire Department (LACoFD) and NOAA’s Santa Clarita Remote Automated Weather Station (RAWS) indicate that the City records an average of 45–60 Red Flag Warning days per year, among the highest totals in Los Angeles County. Prolonged multi-year droughts (2012–2016 and 2020–2022) have reduced live fuel moisture levels to below 60%, producing highly combustible brush in surrounding canyons and open space preserves such as Placerita Canyon Nature Center, San Francisquito Canyon, and the Santa Clarita Open Space Preservation District.

Santa Clarita's vulnerability is also compounded by regional wind corridors that accelerate fire spread through canyon topography. When combined with record high temperatures – up to 118°F recorded in Newhall (September 2020) – and sustained vegetation stress, these conditions elevate the NFDRS classification to "Extreme" for much of the late summer and fall seasons.

Ember Transport Risk – Spot Fire Probability Model: Santa Clarita's vulnerability to ember transport and spot fire ignition is among the most critical wildfire challenges in the region. The City's proximity to fire-prone wildlands, prevalence of combustible vegetation, and frequent 50–70 mph Santa Ana wind events combine to create a high probability of long-range ember dispersal across residential and commercial areas.

The Spot Fire Probability Model (SFPM) assesses ember ignition risks based on wind speeds and fuel sources:

- 40-60 mph winds: Embers can travel 1-3 miles, igniting vegetation, rooftops, and storage areas containing flammable materials.
- 80+ mph winds: Embers can travel over 5 miles, significantly increasing the risk of spot fires within urban and commercial areas.

The SFPM categorizes the Santa Clarita Valley as "High Probability" (>0.6 index value) for ember ignition events during Red Flag conditions.

Research conducted by CAL FIRE and the U.S. Forest Service Fire Lab indicates that embers generated by large wildfires in canyon terrain can travel up to 1.5 miles under typical wind conditions and more than 3 miles under extreme gusts. During the Tick Fire (2019), embers ignited rooftops and yard vegetation in neighborhoods far from the flame front, including sections of Whites Canyon and Shadow Pines, illustrating the reach of airborne ignition vectors.

Fire Hazard Severity: Urban fire severity in Santa Clarita is considered moderate to high, shaped by a combination of aging building stock, wildland–urban interface (WUI) exposure, and concentrated commercial and industrial fire loads. Although the City does not contain heavy refineries or high-hazard chemical plants, certain land uses – including light manufacturing, distribution centers, automotive repair and fueling facilities, and commercial storage yards – create elevated ignition and operational fire risks. High-density residential areas, particularly those constructed before adoption of modern fire-resistant standards (California Building Code Chapter

7A), further increase the potential for structure-to-structure fire spread. In neighborhoods where commercial and residential land uses are adjacent – such as along Soledad Canyon Road, Lyons Avenue, and Railroad Avenue – this proximity compounds fire exposure through combined electrical, mechanical, and vehicular ignition sources.

Urban and Structural Fire Dynamics: The Valencia Industrial Center, Centre Pointe, and Commerce Center Drive corridors contain multiple mid-sized manufacturing and warehousing operations that utilize mechanical systems, chemical coatings, or compressed gas.

While these facilities are regulated by Los Angeles County Fire Department's Fire Prevention Bureau, older industrial and commercial buildings – particularly those constructed between 1970 and 1990 – may lack automatic fire sprinklers, fire-resistive construction, or modern electrical systems. Fire severity in these zones is therefore amplified by fuel density (pallets, packaging, and stored goods) and by older electrical infrastructure under thermal stress during extreme heat events.

Residential areas in Canyon Country, Newhall, and Saugus include housing built prior to 1980 that often relies on wood-frame construction, combustible fencing, and limited defensible space. These conditions increase the potential for lateral flame spread between homes when exposed to wind-driven embers or adjacent vegetation ignition. The City's 2023 Building and Safety Division inspection data identifies over 3,500 single-family parcels within or adjacent to Very High Fire Hazard Severity Zones (VHFHSZ) that would benefit from ember-resistant vent retrofits and Class A roofing.

Transportation and Infrastructure-Related Fire Risks: Transportation infrastructure also contributes significantly to fire hazard severity in Santa Clarita. Interstate 5, State Route 14, and State Route 126 are heavily used freight corridors that transport hazardous, flammable, or pressurized materials. These roadways, which traverse steep terrain and canyon slopes, are frequent sites of vehicle and roadside ignitions. The Route Fire (2022), which burned 5,208 acres along I-5 near Castaic, underscores the role of highway-related ignition in regional wildfire dynamics; the fire temporarily closed both directions of the interstate and triggered evacuations in northern Santa Clarita neighborhoods.

Similarly, the Union Pacific rail line running through the Santa Clara River corridor presents a consistent source of potential spark and heat ignition, especially during maintenance activities or mechanical failure events. Overhead Southern California Edison (SCE) transmission and distribution lines traverse WUI zones in Placerita Canyon, San Francisquito Canyon, and Bouquet Canyon, creating additional ignition potential under high-wind or equipment-failure conditions. SCE's 2024–2030 Grid Modernization and Wildfire Mitigation Program identifies Santa Clarita within a Tier 2/Tier 3 High Fire Threat District, with expanded covered conductor installation and undergrounding planned in the next planning cycle.

Wildfire and Ember Transport Risk: Wildfire and ember transport risk in Santa Clarita is classified as high due to the City's topography, prevailing wind patterns, and the proximity of residential development to fuel-rich canyon landscapes. Much of the community lies within the wildland–urban interface (WUI), where suburban neighborhoods directly abut chaparral-dominated hillsides and open space.

According to CAL FIRE Fire Hazard Severity Zone (FHSZ) mapping, including the 2025 Recommended Local Responsibility Area (LRA) updates and previously adopted State Responsibility Area mapping, approximately 31 percent of the City's land area falls within High or Very High Fire Hazard Severity Zones. These areas are concentrated primarily along the northern and eastern portions of Santa Clarita, including foothill communities in Canyon Country and Saugus and canyon systems such as Sand Canyon, Placerita Canyon, Fair Oaks Ranch, and Plum Canyon.

Risk factors include prevailing Santa Ana wind direction, low relative humidity (<10%), and vegetation density along canyons and open-space buffers. High-probability ember transport events originate from regional wildfires in the Angeles National Forest and foothill zones to the north and east. Wind-driven embers have historically traveled 1–3 miles, igniting rooftops, decks, and ornamental vegetation within suburban tracts far removed from the flame front – as seen during the Tick Fire (2019) and Sand Fire (2016).

Climate, Vegetation, and Fuel Volatility: The probability of spot fires and secondary ignition within Santa Clarita's urban core increases significantly during prolonged droughts, when vegetation desiccation and fuel loading heighten flammability. Between 2020 and 2022, local live fuel moisture values in San Francisquito Canyon averaged below 55%, well below the historical median (70–75%), creating explosive burning conditions. Repeated extreme heat events, such as those in September 2020 and July 2023, further elevate this risk by increasing ambient ignition temperatures and drying ornamental landscaping and parkway vegetation.

Climate projections from Cal-Adapt and California's Fourth Climate Change Assessment anticipate a 35–45% increase in extreme heat days (>100°F) and extended drought cycles by 2050, compounding vegetation stress and expanding the annual fire season from June–November to nearly year-round. The City's Open Space Preservation District manages over 10,000 acres of natural land, which serves critical ecological and recreational functions but also presents fuel continuity pathways that, if unmanaged, can transmit fire into developed areas.

3.3.1.4 Historical Occurrences

FEMA Disaster Declarations

Incident Subcategory	County	FEMA Declaration String	Calendar Year of Declaration	Date Month	Declaration Date	Declaration Title	State
Fire	Los Angeles County	DR-1005-CA	1993	October	10/28/1993	FIRES, MUD/LANDSLIDES, FLOODING, SOIL EROSION	CA
Fire	Los Angeles County	DR-1498-CA	2004	October	10/24/2004	SOUTHERN CALIFORNIA WILDFIRES	CA
Fire	Los Angeles County	DR-1731-CA	2007	November	11/03/2007	CALIFORNIA WILDFIRES	CA
Fire	Los Angeles County	DR-4240-CA	2015	October	10/01/2015	CALIFORNIA WILDFIRES	CA
Fire	Los Angeles County	DR-4407-CA	2018	August	08/04/2018	CALIFORNIA WILDFIRES	CA
Fire	Los Angeles County	DR-4558-CA	2020	August	08/22/2020	CALIFORNIA WILDFIRES	CA
Fire	Los Angeles County	DR-4610-CA	2021	September	09/12/2021	CALIFORNIA WILDFIRES	CA

Source: FEMA Disaster Declarations Database

California Governor-declared Declarations

Date of Disaster	Type of Disaster	Counties Involved
Oct 2024	Wildfires (Palisades Fire Complex and related incidents)	Los Angeles, Ventura

Date of Disaster	Type of Disaster	Counties Involved
Sep 2022	Wildfires (Route Fire; Fairview Fire regional impacts)	Los Angeles, Riverside
Oct 2019	Wildfires (Tick Fire, Getty Fire, Easy Fire)	Los Angeles, Ventura
Nov 2018	Woolsey Fire	Los Angeles, Ventura
Dec 2017	Southern California Wildfires (including Creek and Rye Fires affecting Santa Clarita Valley)	Los Angeles, Ventura, Santa Barbara
Jul 2016	Sand Fire	Los Angeles
Oct 2007	Southern California Fire Siege	Los Angeles, Orange, Riverside, San Bernardino, San Diego, Ventura
Oct 2003	Southern California Firestorm	Los Angeles, Riverside, San Bernardino, Ventura
Oct 1993	Southern California Firestorms	Los Angeles, Ventura, Orange, Riverside
Nov 1985	Brush Fires (Valencia/Newhall area)	Los Angeles

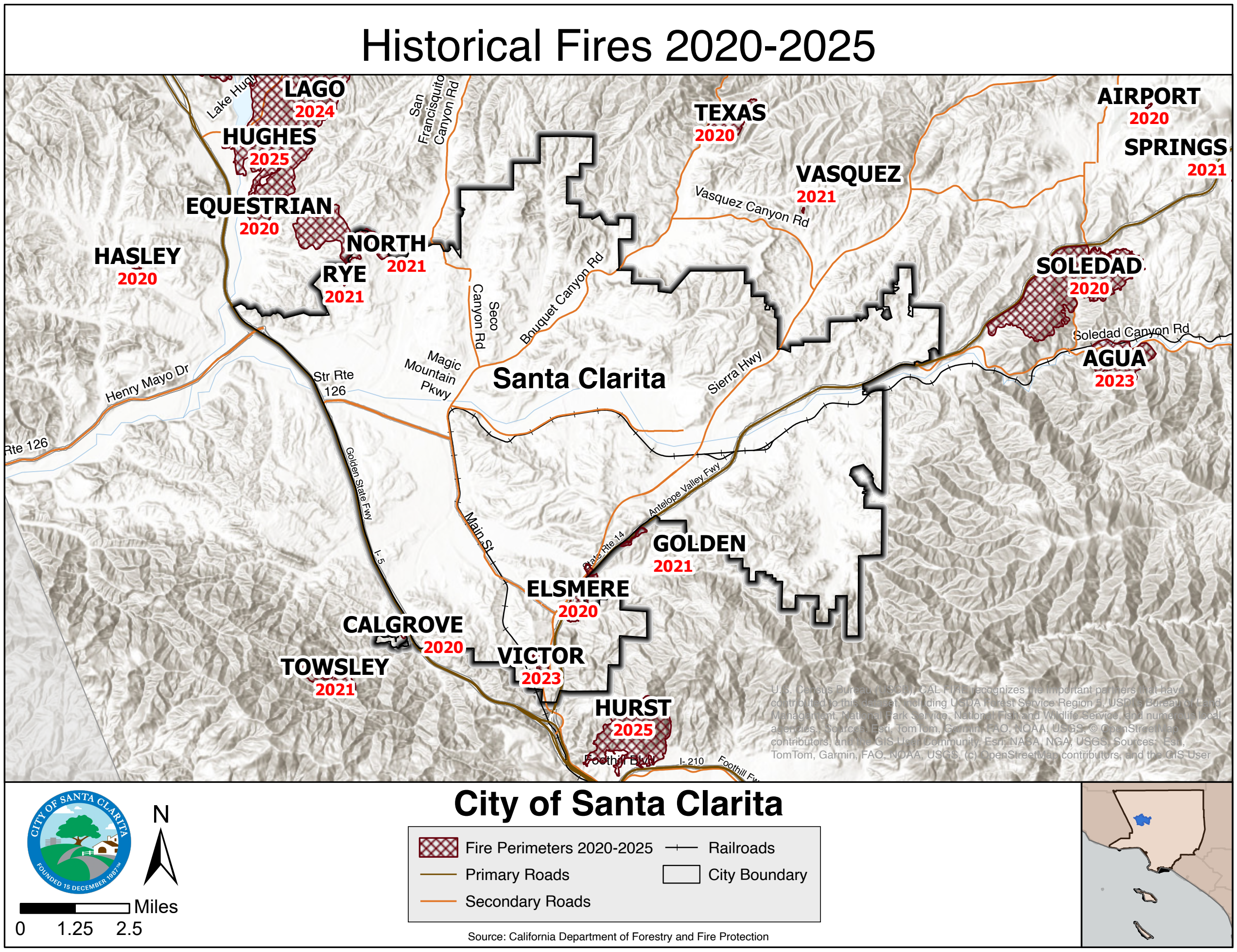
List of Governor-declared disasters for property tax purposes since 1991. Source: California State Board of Equalization

Santa Clarita's fire history demonstrates a consistent pattern of high wildfire recurrence, smoke exposure, and post-fire cascading hazards. Between 2007 and 2024, more than 90,000 acres have burned within or adjacent to the Santa Clarita Valley. The City's combination of dense WUI boundaries, high-wind corridors, steep canyon terrain, and aging structures near vegetated areas continues to sustain moderate-to-high wildfire risk. While Santa Clarita's urban core experiences primarily structural and brush fires, multiple regional wildfires have directly impacted or threatened City limits in the past two decades.

Major Historical Fire Events (within or near City limits)

- **Newhall Pass Fire (1993):** Burned approximately 18,000 acres in the Newhall Pass / I-5 and SR-14 interchange area, destroying multiple homes and contributing to the broader 1993 Southern California Firestorm, which resulted in FEMA Disaster Declaration DR-1005-CA.
- **Buckweed Fire (2007):** Burned 38,356 acres across Saugus, Agua Dulce, and surrounding foothill areas, destroying 21 structures. The fire forced widespread evacuations across northern Santa Clarita and temporarily closed State Route 14.

- **Calgrove Fire (2015):** Burned approximately 398 acres near Interstate 5 and Calgrove Boulevard along the Santa Clarita–San Fernando Valley boundary. Rapid fire spread prompted evacuation of approximately 300 residents and temporary freeway closures.
- **Sand Fire (2016):** One of the largest recent fires affecting the Santa Clarita region, burning 41,432 acres primarily in the Angeles National Forest and foothill communities near Placerita Canyon. The fire destroyed 19 structures, forced evacuations in eastern Santa Clarita neighborhoods, and resulted in two firefighter fatalities.
- **Tick Fire (2019):** Burned 4,615 acres across the Canyon Country and Agua Dulce areas. The fire destroyed 22 structures and forced evacuations of more than 40,000 residents. Smoke conditions degraded regional air quality, with Air Quality Index levels reaching “Very Unhealthy” (AQI >200) in parts of northern Los Angeles County.
- **Saddle Ridge Fire (2019):** Burned 8,799 acres across northern Los Angeles County near the San Fernando Valley–Santa Clarita Valley interface. While most structural damage occurred outside Santa Clarita, smoke and ash significantly affected air quality across the Santa Clarita Valley for several days.
- **Route Fire (2022):** Burned 5,208 acres north of Castaic along the Interstate 5 corridor in Los Angeles County. The fire prompted evacuations affecting roughly 1,000 residents, closed portions of Interstate 5 for approximately 24 hours, and damaged freeway retaining walls and electrical transmission infrastructure.



3.3.1.5 Probability and Effects of Future Conditions

Overall probability over next five years: ***Likely.***

Urban and Structural Fire Risk: Urban fire risk in Santa Clarita is influenced by mixed-use development patterns, industrial storage, and electric utility vulnerabilities. Older commercial and mixed-use zones along Soledad Canyon Road, Newhall Avenue, and Railroad Avenue include structures built prior to modern sprinkler and fire-resistive construction codes, increasing potential for multi-structure fire spread once ignition occurs. Electrical faults and overloaded circuits remain a concern, particularly during heat waves when regional grid demand peaks. Southern California Edison (SCE) has identified multiple Tier 2 and Tier 3 High Fire Threat Districts within City limits, and Public Safety Power Shutoff (PSPS) events have occurred during high-wind periods to prevent equipment-related ignition.

Projected Fire Frequency and Intensity: Fire intensity is expected to rise across both urban and wildland zones. The Fire Intensity Scale (FIS) indicates that large-scale events in canyon and hillside areas will increasingly reach Class 4–5 intensity (flame lengths exceeding 20 feet, energy release >10,000 kW/m). In urban areas, Class 3 structural fires – typically involving flammable construction materials or commercial storage – are projected to increase in frequency as older buildings continue to age without major retrofits. Without proactive mitigation, losses from urban-interface fires could increase by 15–25% in the next decade.

CAL FIRE and Los Angeles County Fire Department (LACoFD) data show that the frequency of Red Flag Warning days has increased from an average of 35 days per year (2000–2010) to 52 days per year (2013–2023) in the Santa Clarita Valley. Under Cal-Adapt (2024) scenarios, the number of extreme wildfire weather days – defined by temperatures exceeding 100°F, humidity below 15%, and wind speeds above 40 mph – is projected to increase 30–50% by 2050. In combination with longer drought cycles, these conditions are expected to extend the fire season nearly year-round, with the most dangerous periods from June through November.

Wind, Ember Transport, and Drought-Driven Risks: Santa Ana winds remain the most significant amplifier of wildfire probability in Santa Clarita. These downslope wind events occur multiple times each fall and winter, with peak gusts reaching 60–80 mph through canyon corridors such as Soledad Canyon, San Francisquito Canyon, and Placerita Canyon. Wind-driven embers can ignite rooftops, fences, and ornamental vegetation miles from an active flame front. During the Tick Fire (2019) and Sand Fire (2016), embers were documented igniting structures more than 1.5 miles from the burn perimeter, emphasizing the persistent danger of ember intrusion even in developed neighborhoods.

Prolonged drought conditions exacerbate fuel availability. The Santa Clarita Valley Water Agency (SCV Water) reports declining groundwater recharge and increased vegetation stress, which amplify local fire ignition potential. By 2050, regional modeling from California's Fourth Climate Change Assessment projects a 10–20% decrease in live fuel moisture during summer months, leading to faster ignition and greater fire spread potential.

Climate-Driven Changes in Future Fire Behavior: Santa Clarita's fire environment is becoming increasingly climate-sensitive, characterized by:

- Warmer average temperatures (projected +4°F to +8°F by 2070);
- Prolonged drought intervals and shorter recovery wet seasons;

- Increased extreme wind days (10–15% rise) per Cal-Adapt downscaled models; and
- Higher nighttime temperatures, which reduce fire suppression effectiveness.

These conditions will likely drive a 30–40% increase in annual burned acreage across northern Los Angeles County by mid-century, according to USFS Southern California Wildfire Futures Study (2023). The resulting impacts for Santa Clarita include higher suppression costs, infrastructure damage, utility interruptions, and recurring evacuation events, particularly in canyon communities and developments built prior to the City's modern WUI construction ordinances.

3.3.2 Power Outage

3.3.2.1 Description

A power outage, also known as an electrical blackout or power failure, is the loss of electrical service to a given area due to disruptions in the generation, transmission, or distribution of electricity. Outages may be localized, affecting a small area or facility, or widespread, impacting entire regions for extended periods. The severity of an outage depends on its duration, geographic extent, and the ability of electrical utilities to restore power. Santa Clarita's reliance on air-conditioning for life safety during extreme heat, its high number of multi-family housing units, major commercial centers, and dependence on electrically powered water pumping systems makes power reliability a major hazard of concern.

Power outages in Santa Clarita can occur in three primary forms, each with distinct implications:

- Momentary interruptions, lasting seconds to minutes, typically occur due to automatic grid protection systems responding to minor faults, such as tree branches contacting power lines or short circuits. These brief outages can disrupt traffic signals (especially along Lyons Avenue, Soledad Canyon Road, and Sierra Highway), industrial machinery, and hospital and university operations.
- Sustained outages, lasting minutes to hours, often result from localized equipment failures, transformer malfunctions, or downed power lines. Such outages affect HVAC systems, disrupt communications, and elevate health risks for vulnerable residents during heat waves. Santa Clarita's colleges and universities – including The Master's University and California Institute of the Arts – have reported repeated impacts to on-campus living and classroom operations during these events.
- Extended blackouts, lasting multiple hours to days or even weeks, are often caused by major disasters such as earthquakes, severe windstorms, or regional grid failures. Prolonged outages have severe implications for Henry Mayo Newhall Hospital, water treatment and pumping facilities operated by SCV Water, emergency communications, traffic control infrastructure, and designated cooling centers.

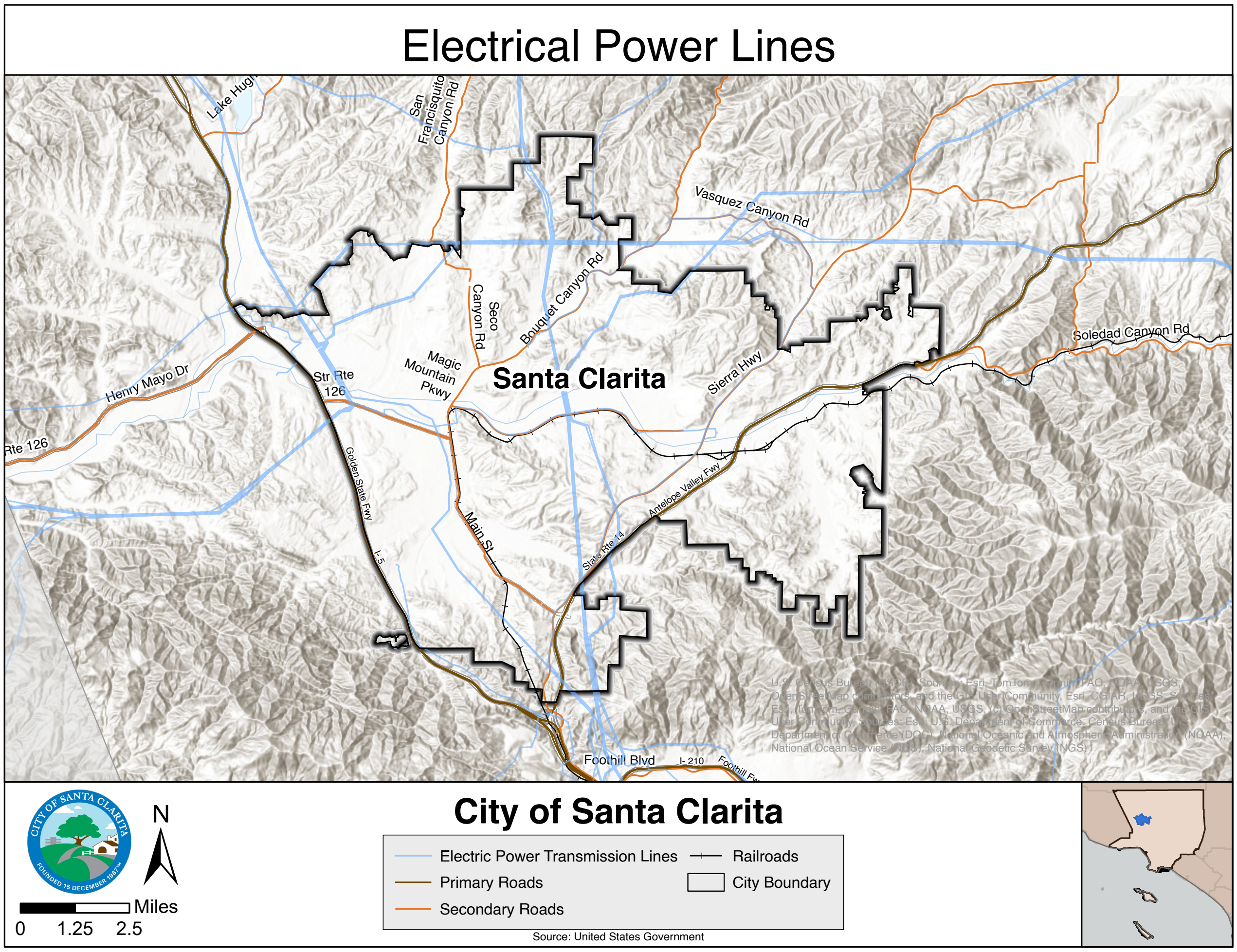
Santa Clarita's electrical infrastructure is vulnerable to multiple outage triggers, including extreme weather, infrastructure failures, and human-caused disruptions:

- **Extreme Heat and Grid Overload:** Santa Clarita regularly experiences high summer temperatures, with First Street Foundation estimating an increase from ~10 very hot days (>105°F) today to ~25 per year by 2050. Extreme temperatures increase electricity demand for cooling in homes, schools, and commercial facilities. Overloaded circuits and regional grid stress can lead to rolling blackouts or brownouts – particularly during August and September. Rising nighttime temperatures further reduce grid recovery capacity.

- **Santa Ana Winds and Storm Events:** Wind gusts in excess of 60–70 mph, observed during January 2022–2024 storms, can topple poles, damage transformers, and blow debris into distribution equipment. Because high winds increase wildfire ignition risk, Southern California Edison (SCE) frequently initiates Public Safety Power Shutoffs (PSPS) in nearby high-fire-threat circuits. Although much of Santa Clarita's urban core is not in a Tier 2 or Tier 3 Fire Threat Zone, PSPS events in adjacent high-risk circuits have repeatedly affected Santa Clarita neighborhoods, resulting in significant disruptions to residents, schools, and businesses – more frequently than in many surrounding communities.
- **Earthquakes and Seismic Damage:** A major earthquake on the Santa Susana, San Gabriel, or Sierra Madre fault systems could damage substations, overhead transmission structures, and underground conduits. Past earthquakes have cut off access to the San Fernando Valley by damaging I-5 and SR-14 overpasses – disrupting regional mutual aid and delaying restoration work. A large seismic event could create cascading grid failures and limit power to critical facilities, including pump stations, emergency shelters, and traffic networks.
- **Vehicle Collisions and Equipment Failures:** Given Santa Clarita's proximity to major transportation corridors – including I-5, SR-14, and the high-volume Valencia Industrial Center – the risk of vehicular impacts on utility poles or substations is elevated. Aging distribution infrastructure, particularly in older neighborhoods in Newhall and Canyon Country, increases the likelihood of equipment-related outages.
- **Cyberattacks and Physical Security Threats:** As part of the broader California ISO grid, Santa Clarita relies on interconnected digital and automated systems that are vulnerable to cyber intrusions. Physical security threats or deliberate vandalism of substations could cause localized or widespread outages.

Utility-initiated Public Safety Power Shutoffs (PSPS) present a significant and growing challenge in Santa Clarita. These preemptive shutoffs by SCE are used to reduce wildfire ignition risk during high-wind, low-humidity conditions. Although Santa Clarita is not uniformly within Tier 2 or Tier 3 High Fire Threat districts, PSPS events in adjacent circuits – including those serving portions of Canyon Country, Placerita Canyon, Sand Canyon, and the outskirts of Saugus – have cut power to Santa Clarita residents and critical sites multiple times in recent years. These shutoffs disrupt cooling during extreme heat, reduce cellphone and internet communications, impact traffic controls, and pose life-safety risks to medically vulnerable residents who rely on powered medical equipment.

3.3.2.2 Location and Geographic Extent



Power outages in Santa Clarita can occur citywide but have a higher probability and greater consequences in specific locations due to infrastructure vulnerabilities, land use patterns, and population density.

Santa Clarita contains major concentrations of commercial and light industrial facilities, particularly within the Valencia Industrial Center, Rye Canyon Business Park, and along major corridors such as Valencia Boulevard, Soledad Canyon Road, and The Old Road. These areas rely heavily on uninterrupted power for refrigeration, manufacturing, medical device production, data systems, and automated industrial operations. Extended blackouts can disrupt business continuity, result in financial losses, interrupt logistics and supply chain activities, and impact emergency services.

Residential neighborhoods – including high-density apartments in Canyon Country and Newhall, senior housing communities, and mobile home parks in Saugus and Valencia – face elevated risks during power outages, especially during extreme heat events. Many low-income households lack backup power sources, making them vulnerable to heat-related illnesses, refrigeration loss, and communication disruptions. Air conditioning failures during summer outages pose significant public health risks, particularly as summer temperatures routinely exceed 100°F and are projected to worsen.

Key transportation corridors such as Interstate 5, State Route 14, and major arterials including Bouquet Canyon Road, Sierra Highway, and Golden Valley Road depend on functional traffic signals and street lighting, which can become non-operational during power failures. Public safety services – including Santa Clarita Valley Sheriff's Station, Los Angeles County Fire Department stations, Henry Mayo Newhall Hospital, and SCV Water pumping stations – rely on backup generators, but prolonged outages could strain these emergency resources, particularly during wildfire or extreme heat events when service demand is elevated.

Relationship to Land Use and Development: As new development occurs and energy demand rises, mitigating power outage risks will require proactive planning and grid modernization. Santa Clarita's expanding residential, commercial, and industrial sectors – including new mixed-use development in Valencia, Skyline Ranch, Plum Canyon, and Vista Canyon – continue to increase electricity demand, placing additional strain on existing electrical infrastructure.

The City's growing biotechnology, medical device, logistics, higher-education, and retail sectors require consistent, high-capacity power sources. Without continued grid upgrades, wildfire-hardening improvements, and deployment of backup power systems, outages – particularly PSPS events – could lead to business disruptions, production losses, service interruptions, and economic instability. As development expands into WUI-adjacent areas and relies more heavily on air conditioning, EV charging, and electrically powered water delivery, coordinated planning with Southern California Edison (SCE) will be essential to maintain reliability and reduce outage-related risks.

3.3.2.3 Magnitude and Severity

Unlike natural hazards that have well-defined measurement scales (e.g., the Modified Mercalli Intensity Scale for earthquakes or the Saffir-Simpson Scale for hurricanes), power outages are categorized based on their geographic scope, duration, and cascading effects. While momentary service interruptions are common, prolonged and widespread outages can have severe consequences for public health, emergency response, industrial operations, and economic stability

Outage Scope and Geographic Extent – U.S. Department of Energy (DOE) Classification: The U.S. Department of Energy (DOE) classifies power outages based on the number of customers affected and the extent of grid failure:

- **Localized Outage (Level 1):** Affects a single building, block, or small neighborhood due to equipment failure, minor weather impacts, or scheduled maintenance. Typically lasts under two hours and has minimal community-wide impacts.
- **Substation-Level Outage (Level 2):** Impacts hundreds to thousands of customers due to transformer failures, high wind damage to power lines, or extreme heat grid stress. Outages last a few hours to a full day, affecting traffic signals, businesses, and emergency services.
- **Citywide or Regional Outage (Level 3):** Affects tens of thousands of customers due to major transmission failures, wildfire-related public safety power shutoffs (PSPS), or severe storms. Lasts several hours to multiple days, causing significant economic and emergency response impacts.
- **Grid Failure or Blackout (Level 4):** A widespread, prolonged outage affecting multiple cities, counties, or states, often caused by major weather disasters, earthquakes, or cyberattacks. Can last weeks, leading to severe economic losses, public health emergencies, and security concerns.

Santa Clarita most frequently experiences Level 1 and Level 2 outages, though Level 3 outages have occurred during PSPS events, extreme windstorms, and regional grid failures affecting SCE transmission infrastructure.

Outage Duration and Restoration Complexity – IEEE 1366 Reliability Indices: The Institute of Electrical and Electronics Engineers (IEEE) Standard 1366 provides reliability indices to measure the frequency and duration of power outages. These indices help utilities and emergency planners assess service reliability and outage severity:

- **System Average Interruption Duration Index (SAIDI):** Measures total annual power outage duration per customer. In Santa Clarita, SAIDI has historically ranged from 70 to 150 minutes per year, though this increases significantly during PSPS events, heat waves, and high-wind periods.
- **System Average Interruption Frequency Index (SAIFI):** Measures how often the average customer experiences an outage per year. Santa Clarita's SAIFI typically reflects 1–3 outages per year, with higher frequencies in foothill and WUI-adjacent circuits affected by PSPS.
- **Customer Average Interruption Duration Index (CAIDI):** Evaluates the average time to restore power after an outage. CAIDI in Santa Clarita normally ranges from 60 to 100 minutes, but can increase considerably during severe windstorms, wildfires, or seismic events.

Severity of Power Outages: The severity of a power outage depends on its duration, the number of customers impacted, and cascading effects on critical infrastructure. Outages range from minor disruptions to large-scale emergencies.

- **Short-Term Outages (Less than 2 hours – Low Severity):** Short-term outages are the most common in Santa Clarita and are typically caused by localized transformer failures, minor equipment malfunctions, wildlife contact, or temporary weather-related disruptions. While these outages cause minimal long-term impacts, they can disrupt traffic signals, interfere with business operations, and create safety concerns for residents reliant on medical equipment.
- **Medium-Term Outages (2 to 12 hours – Moderate Severity):** Outages lasting several hours are often due to PSPS events, heat-related grid overloads, vehicle collisions with power infrastructure, or downed lines from high-wind events. These outages increase risks such as:
  - Traffic congestion and accident hazards from disabled traffic signals.
  - Business closures and financial losses, especially for restaurants, grocery stores, and industrial facilities relying on continuous power.
  - Medical risks for individuals dependent on electricity-powered medical devices – particularly dangerous during summer heat when indoor temperatures can reach unsafe levels.
- **Long-Term Outages (12 hours to multiple days – High Severity):** Extended outages, typically caused by severe windstorms, wildfires triggering PSPS events, major transmission line failures, or regional grid disruptions, result in widespread impacts such as:

- Loss of refrigeration for food and medication, increasing health risks for vulnerable populations.
- Emergency service delays, including 911 call routing issues and reduced police/fire response efficiency.
- Shutdowns of water pumping stations and wastewater treatment facilities if backup generators fail, creating public health concerns.
- If outages occur during summer months, additional threats include extreme heat exposure, heat-related illness, and potential fatalities, as indoor temperatures can rise rapidly without cooling.

- **Catastrophic Outages (Multiple days to weeks – Extreme Severity):** A catastrophic, prolonged power outage – such as one caused by a major earthquake disrupting transmission lines through the Newhall Pass, a major cyberattack, or statewide grid failure – could create a widespread humanitarian and economic crisis. In such cases:
  - Hospitals, emergency shelters, and essential facilities would rely solely on backup generators, which could fail if fuel supplies run out.
  - Mass evacuations may be necessary if essential services such as water delivery, fuel supply, and communications become inoperable.
  - The financial impact on businesses, particularly in the Valencia Industrial Center and other manufacturing/logistics hubs, could result in millions of dollars in losses due to production stoppages, supply chain failures, and perishable inventory losses.

3.3.2.4 Historical Occurrences

FEMA Disaster Declarations

Incident Subcategory	County	FEMA Declaration String	Calendar Year of Declaration	Date Month	Declaration Date	Declaration Title	State
None	None	None	None	None	None	None	None

California Governor-declared Declarations

Date of Disaster	Type of Disaster	Counties Involved
None	None	None

List of Governor-declared disasters for property tax purposes since 1991. Source: California State Board of Equalization

Santa Clarita has experienced multiple power outages over the past two decades due to extreme heat, high winds, equipment failures, and regional grid instability. Power outages have occurred during heatwaves, winter storms, and Public Safety Power Shutoffs (PSPS) implemented by Southern California Edison (SCE) to reduce wildfire ignition risk in the wildland-urban interface (WUI). PSPS impacts are notably more significant in Santa Clarita than in many neighboring communities due to the City's topography, high-wind exposure, and extensive overhead distribution lines serving Canyon Country, Saugus, and the Placerita and Sand Canyon areas.

- **July 2006 California Heatwave Power Outages**: In July 2006, California experienced one of its most severe heatwaves, resulting in record-breaking temperatures that overwhelmed the state's power grid. Santa Clarita, like other parts of Los Angeles County, faced rolling blackouts lasting between two to six hours. The outages affected residential neighborhoods, commercial corridors, and industrial centers in Valencia, straining air conditioning systems, transformers, and local substations during temperatures exceeding 110°F.
- **December 2011 Windstorm and Regional Power Failures:** A severe regional wind event in December 2011 brought gusts exceeding 70 mph through the Santa Clarita Valley, toppling trees and power lines and causing widespread outages. Thousands of residents across Valencia, Newhall, and Canyon Country were without electricity for up to several days. Streetlight failures increased accident risks, and the outage disrupted retail operations, industrial facilities, and on-campus housing at nearby colleges.
- **September 2015 Heatwave and Grid Overloads:** During a late-summer heatwave in September 2015, temperatures in Santa Clarita exceeded 108°F, contributing to transformer failures and localized outages. Several residential and commercial districts experienced outages lasting four to eight hours. Businesses dependent on refrigeration and cooling were significantly affected, and emergency medical calls increased due to heat illness incidents.
- **July 2018 Southern California Power Grid Strain:** In July 2018, a statewide heatwave triggered emergency grid conditions that resulted in rolling blackouts across parts of Los Angeles County, including Santa Clarita. Outages lasted one to three hours and affected residential neighborhoods and key commercial areas in Valencia and Saugus. Industrial users in the Valencia Commerce Center were asked to reduce electrical loads, causing temporary production delays.
- **January 2023 Winter Storms and Outages:** In early 2023, a series of atmospheric river systems brought heavy rain and wind to Southern California, including the Santa Clarita Valley. Wind gusts exceeding 55 mph damaged overhead lines and equipment, leading to outages in portions of Canyon Country, Sand Canyon, and Newhall. Some

outages lasted up to 48 hours, affecting schools, businesses, and signalized intersections.

FEMA Disaster Declarations Related to Power Outages

While power outages alone do not typically trigger standalone FEMA disaster declarations, they often occur as secondary impacts of federally declared disasters such as extreme heat, wildfires, and high-wind events. Santa Clarita has been affected by several FEMA disaster declarations linked to major power failures.

- **FEMA DR-4301-CA (February 2017 – Winter Storms and Infrastructure Damage):** Severe winter storms caused flooding, high winds, and widespread power outages across Los Angeles County, including Santa Clarita. Localized outages resulted from downed distribution lines and water-damaged transformers. FEMA assistance supported repairs to public infrastructure, including electrical system components.
- **FEMA DR-4569-CA (October 2020 – Wildfires and PSPS Events):** During the 2020 wildfire season, SCE implemented multiple PSPS events due to high winds in the Santa Clarita Valley's WUI areas. Although the City was not directly impacted by major wildfire burn areas, PSPS events disrupted portions of the local electrical grid, causing temporary outages affecting Canyon Country, Placerita Canyon, and portions of Saugus.
- **FEMA DR-4683-CA (January 2023 – Winter Storm Power Failures):** A series of atmospheric river storms produced flooding, landslides, and power failures across Los Angeles County. Santa Clarita experienced extended outages in several hillside and canyon neighborhoods due to high winds damaging distribution infrastructure and prolonged repair timelines caused by storm conditions.

3.3.2.5 Probability and Effects of Future Conditions

Overall probability over next five years: ***Likely.***

Santa Clarita is projected to experience an increase in both the frequency and severity of power outages due to rising energy demand, climate change impacts, and vulnerabilities in aging electrical infrastructure. While short-term, localized outages will continue to result from equipment failures and minor weather disturbances, the likelihood of prolonged and widespread blackouts is growing. Extreme heat events, high windstorms, seismic activity, and cyber or physical attacks on power infrastructure all contribute to this increasing risk.

Risk assessments for power outages rely on historical outage data, climate projections, and grid reliability modeling. As part of Southern California Edison's (SCE) service territory and the

California Independent System Operator (CAISO) power grid, Santa Clarita is subject to forecasts by CAISO, the U.S. Department of Energy (DOE), and the North American Electric Reliability Corporation (NERC), which track grid stability, energy demand trends, and outage risks.

Santa Clarita is located in a seismically active region, making its electrical infrastructure highly susceptible to earthquake-related damage. A magnitude 6.5 or greater earthquake on the San Gabriel, Santa Susana, or Sierra Madre fault systems – or a major rupture on the nearby San Andreas – could result in severe disruptions to substations, high-voltage transmission lines, and underground power conduits. Restoration efforts following a major earthquake could extend for several days or weeks, depending on the extent of damage to infrastructure and available repair resources.

Climate models predict that rising temperatures, prolonged heatwaves, and more intense storms will significantly impact electrical grid stability. By 2050, the number of extreme heat days exceeding 95°F in Santa Clarita is projected to nearly double, leading to an estimated 25–35% increase in heat-related grid overloads. The frequency of rolling blackouts is expected to rise as electricity demand peaks during extreme weather events. Additionally, Santa Ana wind events – one of the leading causes of power line damage in the Santa Clarita Valley – are anticipated to become more intense due to climate change, increasing the probability of wind-driven outages. High wind events can topple power lines, damage transformers, and disrupt transmission infrastructure, especially in canyon and hillside areas with extensive overhead electrical lines.

By 2045, CAISO projects that peak electricity demand in Southern California will increase by 25–30%, raising the likelihood of power shortages during heatwaves. If renewable energy generation and grid modernization efforts fail to keep pace, rolling blackouts could become an annual occurrence during extreme heat periods. Businesses and industrial facilities may face significant economic impacts, with extended power outages potentially resulting in annual losses ranging from $5 million to $10 million due to production delays, business closures, and supply chain disruptions.

PSPS events, which preemptively cut power to reduce wildfire risks, are expected to increase in both duration and geographic coverage by 2030. Unlike many neighboring communities, Santa Clarita contains multiple high-wind, high-fire-threat circuits – particularly in Canyon Country, Sand Canyon, Placerita Canyon, and Saugus – making PSPS impacts more common. Increasing PSPS activity could lead to more frequent regional power disruptions, affecting businesses, schools, hospitals, and residents reliant on cooling during extreme heat.

Cybersecurity threats to electrical infrastructure are projected to rise significantly in the coming decades. National security assessments estimate that by 2040, the probability of a major cyberattack affecting the power grid will increase by 50%. Additionally, physical attacks on substations, similar to those previously carried out elsewhere in California, could lead to localized or widespread power failures.

3.3.3 Extreme Heat

3.3.3.1 Description

Extreme heat refers to prolonged periods of excessively high temperatures that exceed historical norms for Santa Clarita and the greater Los Angeles County inland region. These events are often intensified by low humidity, minimal nighttime cooling, and heat retention within the urban environment – particularly across Santa Clarita's built valley basin. The severity of an extreme heat event is influenced not only by absolute temperature values but also by the duration of sustained heat, the persistence of warm nighttime conditions, and the ability of the built and natural environment to dissipate heat effectively. As temperatures remain high for extended periods, risks to public health, infrastructure, and ecosystems increase – especially for seniors, young children, outdoor workers, low-income residents lacking air conditioning, and individuals with pre-existing medical conditions.

Extreme heat presents cascading risks that extend beyond personal discomfort. Heat-related illnesses – including heat exhaustion, heat stroke, and dehydration – become more prevalent as prolonged exposure strains the body's ability to regulate temperature. Critical infrastructure is also vulnerable, as electricity demand surges during hot periods, straining the grid and leading to brownouts or Public Safety Power Shutoff (PSPS) events. Roadways and railways can warp or buckle due to thermal expansion, and urban water systems face both increased demand and accelerated evaporation losses. Ecosystems are affected as well: prolonged heat accelerates vegetation drying, reduces soil moisture, and intensifies wildfire fuel conditions, contributing to the compounding risks of drought and fire hazards across the Santa Clarita Valley.

The National Weather Service (NWS) defines extreme heat in terms of daily maximum temperature and the heat index, which accounts for humidity's effect on perceived heat. When the heat index exceeds 105°F for two or more consecutive days, the NWS issues an Excessive Heat Warning, signaling a significant threat to public health. A Heat Advisory is issued at lower thresholds when conditions are expected to cause moderate health risks – especially for vulnerable populations such as older adults, children, and outdoor workers in construction, logistics, and landscaping.

Heat Metrics and Projections: According to Cal-Adapt (2024) and First Street Foundation's national climate model, extreme heat events in Santa Clarita are projected to increase substantially through mid-century. Three primary metrics define this hazard:

- Extreme Heat Days: A day when the maximum temperature exceeds the 98th percentile of historical highs (April–October, based on 1961–1990 climate records).
- Warm Nights: A night when minimum temperature remains above the 98th percentile of historical nighttime lows, reducing the body's ability to recover from daytime heat.
- Extreme Heat Waves: Periods of four or more consecutive extreme heat days and warm nights, amplifying health, energy, and infrastructure risks.

Historically (1990–2020), Santa Clarita experienced an average of 7–10 extreme heat days per year, with daily highs exceeding 100°F most often in July through September. Projections from Cal-Adapt indicate that by 2050, Santa Clarita could experience up to 19–25 days annually above 100°F, and by 2070, this could increase to 30–40 days per year. The average summer temperature is expected to rise by 4–6°F, while nighttime lows are expected to rise by 5–8°F, limiting overnight cooling and elevating health stress risks.

First Street Foundation (2024) estimates that approximately 68% of Santa Clarita's population is at moderate or higher vulnerability to extreme heat exposure, with risk highest in neighborhoods characterized by older housing stock, low tree canopy, and limited air-conditioning access – including portions of Newhall, Canyon Country, and central Saugus.

Urban Heat Island (UHI) Effect: Santa Clarita's inland topography and land-use patterns amplify the Urban Heat Island (UHI) effect. The City's built environment – consisting of asphalt roadways, concrete parking lots, and dark roofing materials – absorbs and re-radiates heat throughout the day and night, raising urban surface temperatures relative to surrounding open space. This effect is compounded by limited tree canopy coverage (approximately 12% citywide, compared to the regional average of 18%) and increasing impervious surface area from continued suburban and industrial development. According to SCAG's Connect SoCal 2024 Climate Assessment, Santa Clarita's UHI effect raises daytime temperatures by up to 6–8°F above adjacent natural open space and delays nighttime cooling by up to four hours.

The Los Angeles Regional Heat Vulnerability Index (2023) identifies Downtown Newhall, Soledad Canyon, and industrial corridors near Centre Pointe Parkway and Golden Valley Road as local heat "hot spots," where surface temperatures during heat waves can exceed 115°F. Limited shade, extensive pavement, and high vehicular activity contribute to local heat accumulation and elevated risks for outdoor workers and commuters.

3.3.3.2 Location and Extent

Extreme heat is a citywide hazard in Santa Clarita, affecting all neighborhoods due to the City's inland valley setting, low-elevation basin topography, and the urban heat island (UHI) effect, which amplifies warming in built environments. Although Santa Clarita benefits from a temperate Mediterranean climate compared to the Coachella Valley, its inland geography results in greater summertime temperature extremes than coastal Los Angeles areas. The City experiences an average of 286 sunny days per year, with summer high temperatures regularly exceeding 100°F, and historical extremes recorded as high as 118°F (September 2020).

These extreme conditions create significant health, energy, and infrastructure risks, particularly for vulnerable populations – including older adults, young children, outdoor workers, and residents of mobile home and multifamily housing complexes lacking efficient air conditioning. Neighborhoods with older housing stock, limited vegetation, and high pavement coverage – such as Downtown Newhall, central Canyon Country, and sections of Saugus – are especially prone to sustained heat exposure.

Industrial areas, major transportation corridors, and high-density residential zones with limited tree canopy are particularly vulnerable to prolonged heat retention and elevated daytime and nighttime temperatures. Industrial and commercial corridors such as Centre Pointe Parkway, Soledad Canyon Road, and Railroad Avenue contribute to significant heat accumulation due to extensive paved surfaces, dark roofing, and metal structures that absorb and retain heat late into the evening. These areas lack sufficient tree canopy and green infrastructure to provide natural cooling, leading to sustained heat stress that intensifies the urban heat island effect. Additionally, waste heat from industrial operations, vehicular emissions, and air conditioning systems further elevates localized temperatures.

High-traffic corridors such as Interstate 5, State Route 14, and Bouquet Canyon Road contribute to localized temperature increases. The dark asphalt surfaces of these major roadways absorb solar radiation throughout the day and release heat slowly at night, limiting cooling and amplifying the UHI effect. Traffic congestion along I-5 and SR-14 generates significant waste heat and tailpipe emissions, compounding thermal buildup in adjacent neighborhoods such as Valencia Industrial Center, Lyons Avenue corridor, and Golden Valley Road.

Residential areas with low tree canopy coverage – particularly older developments and high-density multifamily areas – experience prolonged heat stress. Many homes in Santa Clarita built prior to California's 2010 Building Energy Efficiency Standards (Title 24) lack adequate insulation and reflective roofing, causing indoor temperatures to remain dangerously high during extended heat events. Indoor heat exposure is an increasing public health issue for low-income households and unhoused residents, especially those unable to afford sustained air conditioning use during high-rate utility periods. Tree canopy coverage citywide averages approximately 12%, compared with the Los Angeles County average of 17%, leaving many neighborhoods without sufficient shading to mitigate heat buildup.

Community parks such as Central Park, Bridgeport Park, and Canyon Country Park provide localized cooling benefits; however, canopy distribution remains uneven. According to SCAG's Connect SoCal 2024, the average surface temperature differential between vegetated park areas and surrounding paved neighborhoods in Santa Clarita is 6–9°F, indicating the strong role of urban greening in moderating local microclimates.

Relationship to Land Use and Development: The City's mix of residential, commercial, and industrial land uses, combined with widespread impervious surfaces, significantly intensifies local temperature increases. The predominance of asphalt roadways, large parking areas, and concrete industrial complexes reduces opportunities for natural cooling through evapotranspiration, contributing to persistent heat accumulation throughout the built environment.

In commercial and industrial zones, such as Centre Pointe Business Park, Tourney Road corridor, and the Commerce Center Drive area, heat retention is exacerbated by large expanses of unshaded pavement, minimal landscaping, and reflective glass surfaces that redirect solar radiation. These patterns of land use contribute to localized hot spots where ground-level temperatures exceed 115°F during major heat waves. Heat stress in these zones poses both occupational hazards for outdoor workers and increased air conditioning demand for surrounding commercial and residential buildings.

Santa Clarita's continued growth and suburban expansion into canyon and foothill areas – such as Sand Canyon, Fair Oaks Ranch, and Plum Canyon – has increased impervious surface coverage while simultaneously reducing natural vegetation. Although newer subdivisions built since 2010 incorporate cool roof standards, high-performance insulation, and mandatory landscaping requirements under the City's Green Building Ordinance, the cumulative increase in built area still amplifies the overall heat island effect across the valley floor.

Transportation infrastructure further intensifies local heat retention. Santa Clarita is bisected by Interstate 5 and State Route 14, which experience daily traffic volumes exceeding 250,000 vehicles. Freeway-adjacent neighborhoods such as Valencia Industrial Center, Newhall Pass, and Golden Valley corridor are subject to compounded heat exposure from both solar radiation and vehicular emissions, particularly during prolonged congestion. According to Caltrans pavement thermography (2023), surface temperatures along I-5 within the Santa Clarita Valley have been recorded as high as 142°F during summer afternoons.

Older residential developments – particularly those built before the 1980s – are most susceptible to overheating. Many lack energy-efficient construction, attic insulation, and reflective materials, leading to indoor heat accumulation that can exceed outdoor ambient temperatures by 10–15°F. Neighborhoods with lower homeownership rates or higher renter occupancy often have less tree canopy, limited access to air conditioning, and fewer energy retrofit investments, exacerbating socioeconomic disparities in heat vulnerability. These include areas within Downtown Newhall, northern Canyon Country, and parts of Saugus.

Green spaces and parklands across Santa Clarita – such as Central Park, Bridgeport Park, Todd Longshore Park, and the Santa Clara River Trail corridor – provide some natural relief from extreme heat through evapotranspiration and shading. However, Citywide tree canopy coverage remains below regional resilience targets, prompting the City to pursue expanded greening initiatives through the Santa Clarita Tree Canopy and Shade Infrastructure Program (2024), which aims to increase urban shade coverage by 25% by 2030.

3.3.3.3 Magnitude and Severity

Unlike some other natural hazards, extreme heat lacks a singular, universally accepted intensity scale, such as the Modified Mercalli Intensity Scale for earthquakes or the Saffir-Simpson Hurricane Wind Scale for hurricanes. Instead, the severity of extreme heat events is assessed using a combination of temperature thresholds, heat indices, and duration metrics, which together provide a comprehensive measure of the hazard's magnitude and potential impacts.

National Weather Service (NWS) Heat Index: The National Weather Service (NWS) Heat Index is the primary tool used to quantify how hot it "feels," combining actual air temperature with relative humidity to produce an apparent temperature that reflects human heat stress. This index plays a critical role in issuing heat-related alerts and warnings.

National Weather Service
Heat Index Chart

Temperature (°F)

Relative Humidity (%)	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110
40	80	81	83	85	88	91	94	97	101	105	109	114	119	124	130	136
45	80	82	84	87	89	93	96	100	104	109	114	119	124	130	137	
50	81	83	85	88	91	95	99	103	108	113	118	124	131	137		
55	81	84	86	89	93	97	101	106	112	117	124	130	137			
60	82	84	88	91	95	100	105	110	116	123	129	137				
65	82	85	89	93	98	103	108	114	121	128	136					
70	83	86	90	95	100	105	112	119	126	134						
75	84	88	92	97	103	109	116	124	132							
80	84	89	94	100	106	113	121	129								
85	85	90	96	102	110	117	126	135								
90	86	91	98	105	113	122	131									
95	86	93	100	108	117	127										
100	87	95	103	112	121	132										

Likelihood of Heat Disorders with Prolonged Exposure and/or Strenuous Activity

Caution   Extreme Caution   Danger   Extreme Danger

The NWS issues an Excessive Heat Warning for Los Angeles County (including Santa Clarita) when the heat index exceeds 105°F for two or more consecutive days, or when overnight lows remain above 75°F and prevent adequate recovery from daytime heat. A Heat Advisory may be issued when the heat index reaches 100–104°F, posing moderate to high health risks – especially for seniors, outdoor workers, unhoused populations, and individuals with respiratory or cardiovascular conditions.

During recent extreme heat events, the Santa Clarita Valley routinely reached apparent temperatures of 110–115°F, with relative humidity levels below 25%. For example, in September 2020, Santa Clarita recorded an ambient air temperature of 118°F, which, at 20% humidity, produced a heat index of approximately 122°F, classified by NWS as "Extreme Danger" on the Heat Index Chart. These conditions led to multiple heat-related medical emergencies, temporary cooling center activations, and electric grid stress events managed by Southern California Edison (SCE).

Cal-Adapt Extreme Heat Metrics: California's Cal-Adapt system, developed by Cal OES, UC Berkeley's Geospatial Innovation Facility, and the California Energy Commission, provides both historical and projected climate data for community heat risk planning. Cal-Adapt defines extreme heat using three primary indicators:

- Extreme Heat Days: A day when the maximum temperature exceeds the 98th percentile of historical daily highs (based on 1961–1990 climate records).
- Warm Nights: A night when the minimum temperature remains above the 98th percentile of historical lows, limiting nighttime cooling and increasing cumulative heat stress.
- Extreme Heat Waves: A period of four or more consecutive Extreme Heat Days and Warm Nights, resulting in amplified health risks, greater electricity demand, and infrastructure strain.

According to Cal-Adapt, Santa Clarita currently experiences an average of 8–10 Extreme Heat Days per year, but this number is projected to increase to 23–28 days per year by 2050, and 35–45 days per year by 2070 under the high-emissions (RCP 8.5) scenario. Warm Night frequency – defined as nights when minimum temperatures exceed 75°F – is projected to quadruple by mid-century, rising from an average of 7 nights per year (2020) to 30 or more nights annually by 2050. These prolonged warm conditions exacerbate health risks and prevent nighttime recovery, particularly for residents without access to air conditioning.

Severity of Extreme Heat

Extreme heat events in Santa Clarita are becoming more frequent, prolonged, and intense due to a combination of climate change, urban development, and the urban heat island (UHI) effect. The Santa Clarita Valley – located inland and surrounded by the Santa Susana, San Gabriel, and Sierra Pelona mountain ranges – traps heat during summer months, resulting in higher sustained daytime and nighttime temperatures compared to coastal regions.

While historical summer highs averaged 95–98°F in the 1990s, Santa Clarita now regularly experiences multiple days above 105°F each summer, with peak extremes reaching 112–118°F. By 2050, Cal-Adapt projects that the number of days exceeding 100°F will increase from 10 per year (2020 baseline) to 22–27 per year, and the number of days exceeding 105°F will increase from 2 to 10 per year. By 2070, the number of days surpassing 110°F may increase by fivefold relative to the 2000–2020 historical average.

The Urban Heat Island effect in Santa Clarita exacerbates these extremes, especially in Canyon Country, Newhall, and Valencia industrial areas, where surface temperatures are 6–9°F hotter than in surrounding natural areas due to extensive paved surfaces and minimal shading. Satellite thermography from SCAG's 2024 Connect SoCal Climate Report confirms that industrial zones and high-density neighborhoods maintain nighttime surface temperatures 10–12°F above rural canyon areas, preventing adequate cooling even after sunset.

Health and Infrastructure Impacts: The intensification of extreme heat poses serious risks to public health, critical infrastructure, and local economic activity across Santa Clarita. Prolonged exposure to high temperatures significantly increases the likelihood of heat exhaustion, heat stroke, and dehydration. Between 2015 and 2022, Los Angeles County Department of Public Health recorded a 47% increase in heat-related emergency room visits, with Santa Clarita Valley residents accounting for approximately 6% of those cases – a disproportionately high share for the region's population. Vulnerable populations include seniors, children, outdoor laborers, unhoused individuals, and residents of older multifamily buildings lacking adequate insulation or cooling systems.

Extreme heat also imposes heavy strain on energy and water infrastructure. Santa Clarita's summer electricity demand peaks between 4:00–8:00 p.m., driven by air conditioning loads across residential and commercial sectors. According to SCE (2024), local grid demand in the Santa Clarita service area has increased by 18% since 2010, and peak-day usage during major heat events has approached capacity limits. Projected increases in cooling demand are expected to raise annual electricity consumption by 20–25% by 2045, raising the likelihood of brownouts or Public Safety Power Shutoffs (PSPS) during extended heat waves.

High temperatures accelerate the degradation of roads, bridges, and rail infrastructure throughout the Santa Clarita Valley. Thermal expansion causes asphalt softening and cracking, while concrete surfaces expand and buckle, particularly along Interstate 5, State Route 14, and Metrolink rail alignments. During the September 2022 heat wave, Caltrans reported surface pavement temperatures exceeding 145°F in Santa Clarita, leading to lane closures and repair work. Such heat-induced deterioration increases maintenance costs and disrupts both local and regional transportation systems.

In addition, extreme heat exacerbates air quality deterioration by accelerating the formation of ground-level ozone (O_3), compounding respiratory health risks for residents. During the 2020–2023 summers, Santa Clarita recorded more than 40 days annually where ozone concentrations exceeded federal 8-hour standards. This dual exposure – high heat and poor air quality – creates synergistic health impacts that are increasingly recognized in public health risk assessments.

3.3.3.4 Historical Occurrences

FEMA Disaster Declarations

Incident Subcategory	County	FEMA Declaration String	Calendar Year of Declaration	Date Month	Declaration Date	Declaration Title	State
None	None	None	None	None	None	None	None

California Governor-declared Declarations

Date of Disaster	Type of Disaster	Counties Involved
Sep-22	Heat Emergency (Statewide)	Los Angeles, Riverside, Orange, Ventura, San Bernardino, Kern
Sep-20	Heat Emergency (Statewide)	Los Angeles, Riverside, Orange, Ventura, San Diego
Jul-06	Heat Emergency	Los Angeles, Riverside, San Bernardino, Kern, Ventura

List of Governor-declared disasters for property tax purposes since 1991. Source: California State Board of Equalization

Santa Clarita and the greater Los Angeles County inland valleys have experienced multiple extreme heat events over the past several decades, producing cascading impacts across public health, the power grid, transportation systems, and local air quality. The frequency, duration, and intensity of these events have increased in recent decades due to climate change, urbanization, and the urban heat island effect, placing greater strain on vulnerable populations and critical lifeline infrastructure.

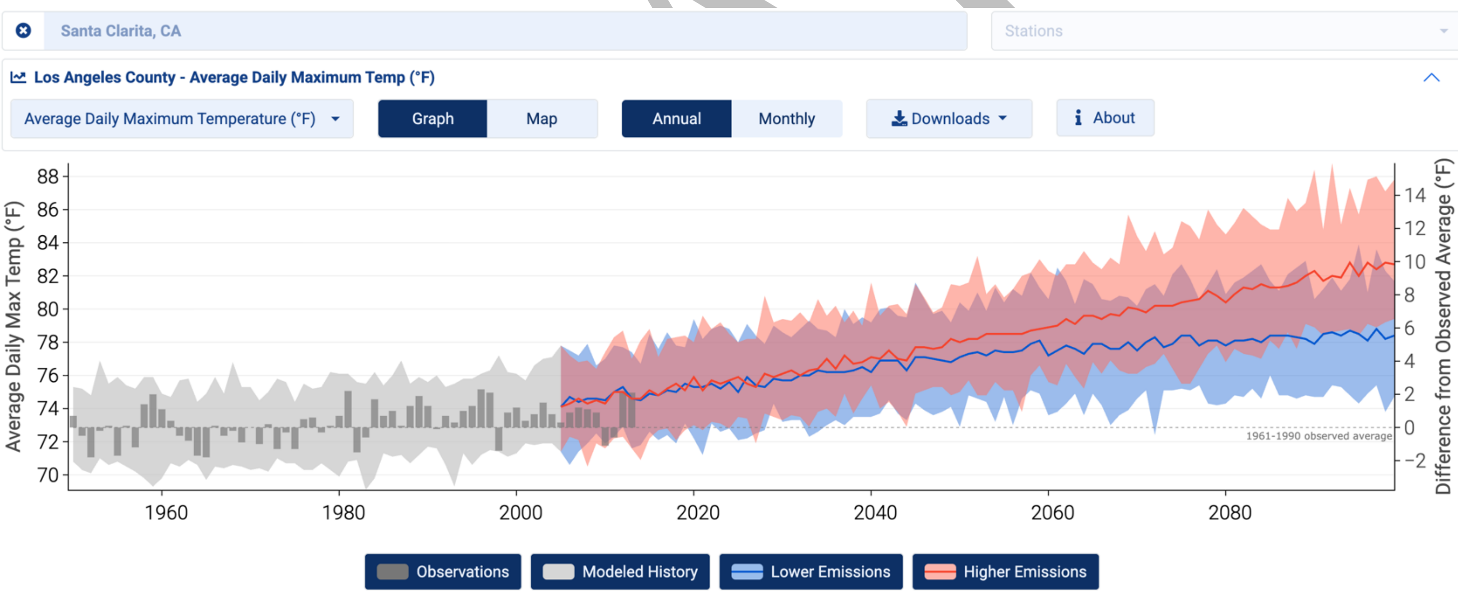
- **July 2006 Heat Wave:** In July 2006, California experienced one of its most intense and prolonged heat waves on record, lasting over two weeks. Temperatures in Santa Clarita ranged from 107°F to 114°F for multiple consecutive days, while nearby inland areas such as Lancaster and Woodland Hills reached 118°F. The Los Angeles County Department of Public Health attributed over 140 heat-related deaths statewide, including at least 16 fatalities within Los Angeles County. In Santa Clarita, emergency calls for heat-related illness rose sharply, prompting the activation of temporary cooling centers in Newhall and Canyon Country. The extreme temperatures also triggered regional power disruptions, with Southern California Edison (SCE) reporting transformer failures and outages affecting approximately 8,500 local customers. The heat event caused asphalt softening and pavement deformation along SR-14 and local arterials, increasing roadway maintenance costs.

- **July 2018 Heat Wave:** During early July 2018, a severe heat wave struck Southern California, with Santa Clarita reaching 113°F on July 6 – the hottest day since 2006. The National Weather Service (NWS) Los Angeles-Oxnard office issued an Excessive Heat Warning for the Santa Clarita Valley, where sustained highs above 110°F persisted for four days. The combination of heat, low humidity (below 15%), and gusty winds increased wildfire ignition risk, leading to multiple small brush fires along Soledad Canyon Road and Sand Canyon. Health impacts were widespread: Henry Mayo Newhall Hospital reported a 48% increase in emergency visits for dehydration and heat exhaustion during the week of the event. The Los Angeles County Department of Public Health advised residents to avoid outdoor activity and utilize cooling centers at Old Town Newhall Library and Canyon Country Community Center.
- **August 2020 Heat Wave and Rolling Blackouts**: In August 2020, California experienced an unprecedented, statewide extreme heat event, leading to the state's first rolling blackouts in nearly 20 years. Santa Clarita recorded highs of 115–118°F, breaking multiple local records and marking one of the hottest periods in the City's history. The California Independent System Operator (CAISO) declared a Stage 3 Emergency, as statewide electricity demand surpassed 47,000 megawatts, exceeding available generation capacity. Rolling blackouts affected more than 500,000 customers statewide, including several hundred homes and businesses in Santa Clarita. High heat and strain on the power grid led to temporary shutdowns of industrial facilities and cooling systems, while air quality index (AQI) readings reached "Very Unhealthy" (AQI 205–220) due to combined heat and wildfire smoke. The City activated four cooling centers, which collectively served more than 900 residents over a five-day period.
- **September 2020 Labor Day Weekend Heat Wave:** A second record-breaking heat wave followed less than a month later, during Labor Day weekend 2020, compounding the summer's prior impacts. On September 6, 2020, Santa Clarita reached an all-time high of 118°F, while Woodland Hills (within the same NWS region) recorded 121°F, the highest temperature ever observed in Los Angeles County. This extreme heat event lasted for nearly a week, pushing emergency and utility systems to their limits. Peak electricity usage again approached CAISO's statewide threshold, and localized SCE distribution failures affected portions of Canyon Country and Saugus. Local fire agencies also reported a spike in roadside ignition incidents, as overheated vehicles and dry vegetation combined to create multiple small brush fires. Public health officials noted significant increases in heat-related hospitalizations and calls for service involving heat stroke and dehydration. The prolonged event coincided with heavy wildfire activity statewide (Bobcat, Lake, and El Dorado Fires), causing severe smoke conditions across

the Santa Clarita Valley, with AQI levels exceeding 200 (“Very Unhealthy”) for three consecutive days.

- **September 2022 Statewide Heat Emergency**: From August 31 to September 9, 2022, California experienced another record-setting heat wave, declared a State of Emergency by Governor Gavin Newsom. The Santa Clarita Valley recorded ten consecutive days over 100°F, with maximum temperatures between 107°F and 113°F. During this event, SCE implemented voluntary conservation alerts and near-capacity system loads in the Santa Clarita region. The Los Angeles County Department of Public Health reported the highest number of heat-related emergency visits in over a decade, with over 200 ER visits countywide during the peak of the event. Cooling centers at Canyon Country Community Center and Santa Clarita Public Library (Old Town Newhall) operated extended hours, serving more than 1,400 residents throughout the event. Road surface temperatures exceeded 150°F, prompting Caltrans to implement asphalt softening advisories and early morning maintenance schedules.

3.3.3.5 Probability and Effects of Future Conditions



Overall probability over next five years: ***<u>Likely.</u>***

Extreme heat in Santa Clarita is projected to intensify in frequency, severity, and duration due to the ongoing effects of climate change and regional warming trends in Southern California’s inland valleys. Rising average annual temperatures, combined with the urban heat island (UHI) effect, will result in longer-lasting and higher-intensity heat waves, posing serious risks to public health, infrastructure, energy reliability, and economic stability.

Santa Clarita's inland location within the Santa Clarita Valley basin – surrounded by the San Gabriel, Santa Susana, and Sierra Pelona mountain ranges – naturally traps heat, limiting overnight cooling. While extreme heat events are already a regular occurrence, they are expected to become more frequent, more prolonged, and significantly hotter over the coming decades. These conditions will increase the likelihood of heat-related health emergencies, power disruptions, and infrastructure degradation, particularly in neighborhoods with older housing stock, limited vegetation, and low access to air conditioning.

Projected Temperature Increases: Under current climate change scenarios, Santa Clarita is expected to experience substantial increases in extreme heat days and average annual temperatures throughout the 21st century. According to Cal-Adapt (2024) projections based on CMIP6 climate models:

- The average annual temperature in Santa Clarita (currently 64°F) is projected to rise by 2.5°F to 4.2°F by 2050 under a moderate emissions scenario (SSP2-4.5) and by 4.5°F to 6.8°F under a high emissions scenario (SSP5-8.5).
- The number of days with maximum temperatures above 100°F is projected to increase from an average of 10 days per year (2020 baseline) to 22–30 days per year by 2050, and up to 40–45 days per year by 2085 under high emissions.
- Days exceeding 105°F are projected to increase from 2–3 per year historically to 8–12 per year by 2050 and 20 or more by 2070 under high emissions scenarios.

The First Street Foundation (2024) identifies that 99.8% of properties in Santa Clarita are exposed to measurable extreme heat risk over the next 30 years, with a projected increase in average summer highs by +4.5°F to +7°F by mid-century. As a result, the City's cooling degree days (CDD) – a measure of energy demand for air conditioning – are projected to increase by nearly 25% by 2050, leading to higher electricity use, peak demand periods, and utility costs for residents and businesses.

Increased Frequency of Heat Waves: Historically, heat waves in Santa Clarita have been intense but relatively short-lived. However, climate projections indicate that extreme heat waves lasting three or more consecutive days will become far more common, with increasing frequency and duration through mid-century. Under modeled scenarios, the likelihood of at least one major extreme heat wave each year (defined by daily highs above 105°F for three or more days) is expected to double by 2040 and triple by 2070 compared to the 2000–2020 historical baseline.

By 2050, Santa Clarita is expected to experience 3–5 major heat wave events per year, compared to an average of one per year historically. These events will result in prolonged stress on public health systems, electrical infrastructure, and outdoor labor sectors, as well as increased cooling costs for residents.

Heat waves will also have compounding impacts on vulnerable populations. Low-income households, outdoor workers, and elderly residents – particularly those in Canyon Country, Downtown Newhall, and mobile home communities – are expected to face heightened exposure due to limited access to air conditioning or tree canopy shading. The City's emergency management framework will likely need to support expanded cooling center operations, early warning systems, and public outreach programs to mitigate future health impacts.

Longer Duration and Warmer Nights: In addition to more frequent and hotter days, Santa Clarita will experience longer-lasting heat waves and significantly warmer nights, limiting opportunities for recovery between extreme heat events. The number of Warm Nights – defined as nights with minimum temperatures above 75°F – is projected to increase from fewer than 5 nights per year (historically) to 25–30 nights per year by 2050, and 50 or more nights by 2085 under high emissions scenarios.

Warmer nighttime conditions are especially concerning because they reduce the body's ability to cool, increasing risks of heat exhaustion, cardiovascular stress, and mortality, particularly among the elderly and medically vulnerable populations. These prolonged overnight heat events will also elevate electricity consumption, as air conditioning systems remain in operation longer to maintain safe indoor conditions.

The combination of elevated daytime and nighttime temperatures will place continuous pressure on the Southern California Edison (SCE) grid system. Peak energy demand during nighttime hours is expected to rise by 15–20% by 2050, heightening the risk of brownouts and rolling blackouts, particularly during multi-day heat waves that coincide with wildfire prevention-related Public Safety Power Shutoffs (PSPS).

Infrastructure systems will experience accelerated wear due to prolonged heat exposure. Roadway pavements and rail tracks in the Santa Clarita Valley Transportation Corridor (I-5, SR-14, and Metrolink) are expected to expand and soften more frequently, increasing maintenance costs and disrupting transit reliability.

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3.3.4 Earthquake

3.3.4.1 Description

An earthquake is a sudden and violent shaking of the ground caused by the release of energy within the Earth's crust due to movement along fault lines. This energy release generates seismic waves that propagate outward, resulting in ground shaking, surface rupture, soil liquefaction, landslides, and, in some cases, tsunamis. Earthquakes vary in magnitude, depth, and duration, with impacts ranging from minor tremors to catastrophic destruction. Their severity depends on factors such as the amount of energy released, proximity to the epicenter, depth of the seismic activity, and local geological conditions. Because seismic events occur without warning, they are among the most unpredictable and destructive natural hazards.

Santa Clarita is located within one of the most seismically active regions of Southern California and is directly influenced by several major and active fault systems capable of producing strong to very strong ground shaking. The San Gabriel Fault, Santa Susana Fault, Sierra Madre Fault Zone, and the regional San Andreas Fault system contribute significantly to Santa Clarita's seismic risk. The San Andreas Fault, approximately 20 miles northeast of the City, is capable of producing magnitude 7.8–8.2 earthquakes, which could result in severe regional infrastructure damage, transportation disruption, and prolonged utility outages. The Santa Susana Fault, which runs just south of the City, is capable of generating magnitude 6.7–7.3 earthquakes, and has been identified by the California Geological Survey as one of the highest-risk blind thrust faults in the state due to its proximity to dense urban development.

The Sierra Madre Fault Zone, located south and southeast of Santa Clarita, has produced large historical earthquakes and is capable of generating magnitude 7.0–7.2 events. The San Gabriel Fault, which runs through the northwest portion of the valley, is capable of producing moderate to strong shaking locally. Additional nearby faults include the Holser Fault, Del Valle Fault, and the Oak Ridge Fault, all of which could impact Santa Clarita with moderate to strong ground motion.

USGS National Seismic Hazard Maps indicate that Santa Clarita could experience peak ground accelerations (PGA) ranging from 0.45g to more than 0.9g during a major earthquake, depending on fault rupture and soil conditions. Because Santa Clarita is built on a mix of soft alluvial valley-fill sediments and steep canyon slopes, local geology contributes to shaking amplification, slope instability, and potential liquefaction in isolated areas.

The majority of earthquakes affecting Santa Clarita result from tectonic activity along strike-slip and thrust faults, where either lateral or upward/downward movement occurs between fault blocks. The San Andreas system defines the boundary between the Pacific and North American Plates, resulting in high regional seismic activity.

Secondary Effects of Earthquakes

Ground Shaking: Santa Clarita is subject to strong to very strong ground shaking during large earthquakes. Areas underlain by young alluvial sediments, including portions of Newhall, Valencia, Canyon Country, and Saugus, are prone to seismic wave amplification, increasing the likelihood of structural damage to older buildings and lifeline infrastructure.

Surface Rupture: While no major mapped active fault runs directly beneath Santa Clarita's core urban areas, nearby faults could generate surface rupture close enough to damage roads, pipelines, aqueducts, and utility corridors. Infrastructure parallel to these faults – including pipelines, electrical transmission lines, and key transportation routes – may experience lateral spreading or dislocation.

Liquefaction: Liquefaction occurs when loose, saturated soils temporarily lose strength and behave like a liquid due to strong shaking. Most of Santa Clarita has low liquefaction susceptibility, but moderate-risk pockets exist along:

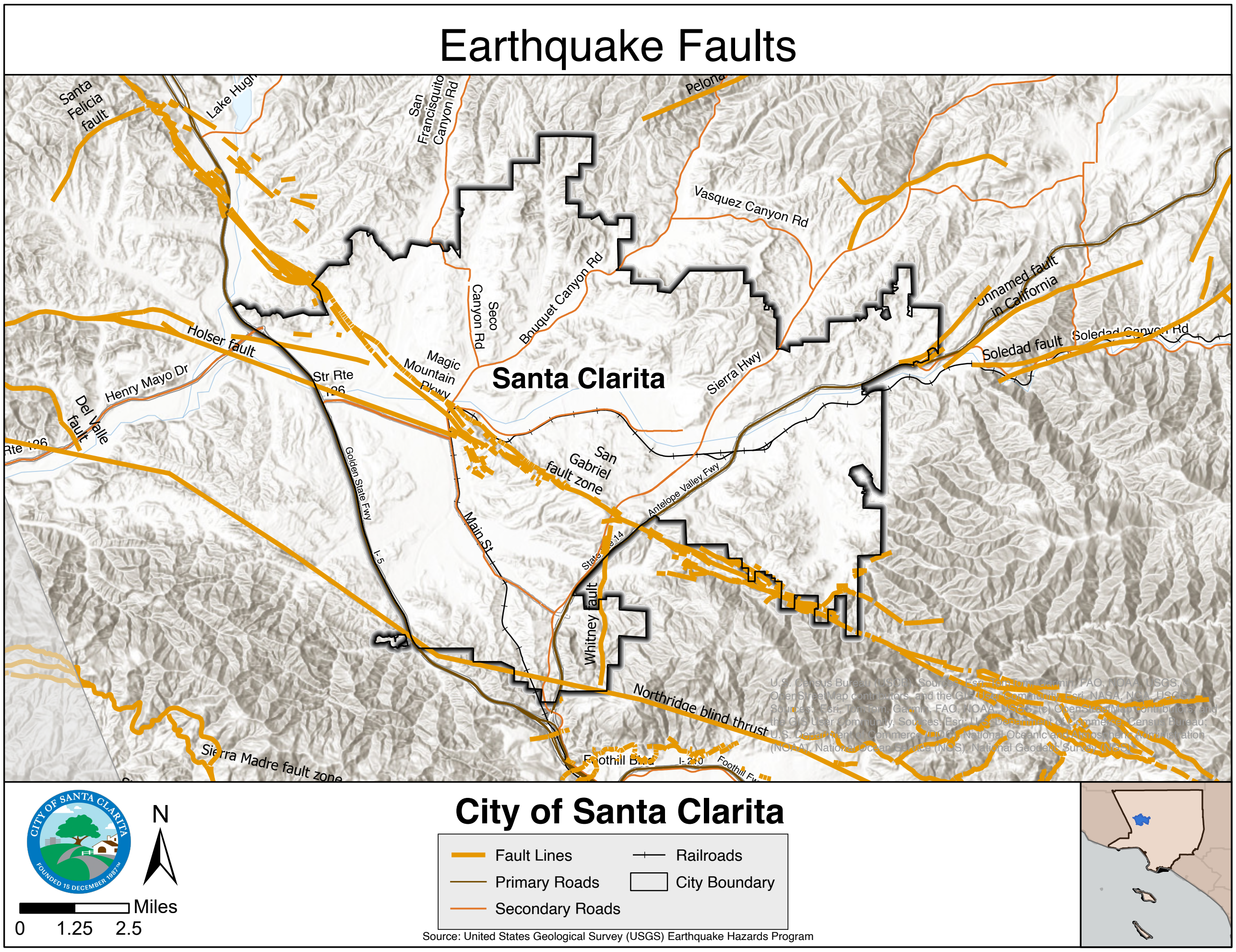
- Santa Clara River floodplain,
- portions of Bouquet Canyon Wash,
- areas near Soledad Canyon Wash, and
- some filled or artificially graded areas in Canyon Country.

Seismically Induced Settlement: Unconsolidated alluvial deposits along the Santa Clara River corridor and in parts of Canyon Country, Saugus, and eastern Newhall are susceptible to differential settlement during strong shaking. This can damage foundations, buried utilities, and transportation infrastructure.

Landslides and Slope Instability: Steep slopes in Placerita Canyon, Sand Canyon, Mint Canyon, Soledad Canyon, and the hills bordering Valencia and Newhall Pass are susceptible to earthquake-induced landslides and rockfalls. Ground accelerations exceeding 0.10g may trigger slope failures, posing risks to hillside homes, roadways such as SR-14, and utility corridors. Historical evidence and CGS landslide mapping indicate numerous ancient and existing landslide complexes in these areas.

Fire Following Earthquakes: Broken gas lines, ruptured fuel storage tanks, and electrical failures can ignite fires following strong earthquakes. This is a major concern in densely developed areas, including parts of Valencia, Newhall, and industrial zones along the I-5 and SR-14 corridors. Fire suppression capabilities may be impaired by damaged water mains, power outages affecting pump stations and blocked roadways.

3.3.4.2 Location and Geographic Extent



Santa Clarita is located in a seismically active region of Southern California and is at significant risk of earthquakes due to its proximity to several major fault systems. The City lies within Los Angeles County, an area classified as having high seismic hazard potential. Multiple active faults in the vicinity are capable of generating moderate to severe earthquakes that could result in strong ground shaking, structural damage, and secondary hazards such as liquefaction and landslides. Key fault systems that influence Santa Clarita's seismic risk include:

San Andreas Fault: The San Andreas Fault is one of the most significant seismic threats to Santa Clarita. The fault passes approximately 20 miles northeast of the City through the Mojave/San Bernardino region and is capable of producing earthquakes exceeding magnitude 7.8–8.0. A major rupture of the southern segment could result in violent shaking, widespread infrastructure damage, and major disruption to critical lifelines, including Interstate 5, State Route 14, long-distance transmission lines, and imported water systems.

Santa Susana Fault: The Santa Susana Fault lies immediately south of Santa Clarita, extending through the Santa Susana Mountains. It is a major thrust fault capable of generating magnitude 6.7–7.3 earthquakes. Because of its proximity to developed areas along I-5 and the Newhall Pass, a significant rupture could create intense shaking and substantial damage to transportation corridors, pipelines, and older structures.

Sierra Madre Fault Zone: Located in the San Gabriel Mountains southeast of Santa Clarita, this active thrust fault system has produced large historical earthquakes and is capable of generating magnitude 7.0–7.2 events. Shaking from a Sierra Madre Fault rupture could affect eastern and southern portions of the City, particularly areas built on soft alluvium.

San Gabriel Fault: This northwest–southeast trending strike-slip fault lies along the northern edge of the San Gabriel Mountains and passes relatively close to the northern Santa Clarita Valley. It is capable of producing moderate to large earthquakes that could generate strong shaking within the valley.

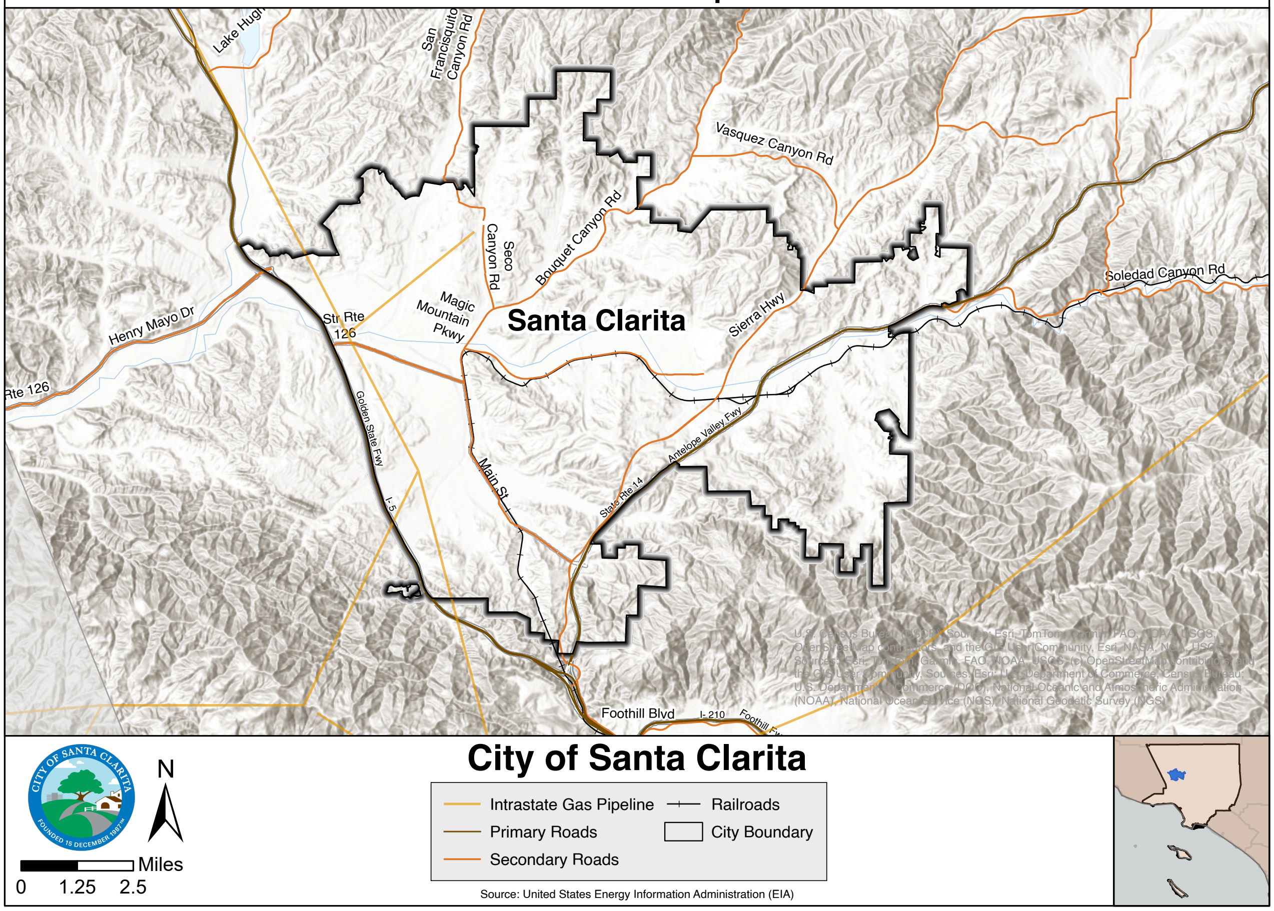
Additional regional faults such as the Holser Fault, Del Valle Fault, and Oak Ridge Fault also pose seismic threats. While these faults are farther from the City's core, they are capable of contributing to strong shaking and regional disruption.

The California Geological Survey (CGS) and U.S. Geological Survey (USGS) have identified portions of Santa Clarita – particularly areas along the Santa Clara River corridor, Soledad Canyon Wash, Bouquet Canyon Wash, and pockets of Canyon Country – as areas with moderate liquefaction susceptibility. Liquefaction occurs when loose, water-saturated soils lose strength during an earthquake, potentially causing buildings, roads, and underground utilities to sink or tilt.

Relationship to Land Use and Development: Santa Clarita has a mix of residential, commercial, and industrial development, all of which have varying levels of vulnerability to seismic hazards. The City's land use and development patterns influence its overall risk exposure and the extent of potential earthquake damage.

- **Residential Areas:** Many of Santa Clarita's neighborhoods, including Newhall, Saugus, Canyon Country, and portions of Valencia, contain a mix of single-family homes and multi-family units. Structures built before California's modern seismic codes (introduced in the 1970s) may be particularly vulnerable to damage. Homes with unreinforced masonry, soft-story configurations, or older foundations are at greater risk of collapse or severe structural damage during strong ground shaking.
- **Commercial and Industrial Zones:** Santa Clarita contains several significant commercial and industrial districts – such as the Valencia Industrial Center, Rye Canyon, and areas along the I-5 and SR-14 corridors – that house retail centers, manufacturing facilities, warehouse and logistics operations, and film production studios. These zones also include critical infrastructure such as electrical substations, water facilities, and major roadways. Older industrial buildings, non-ductile concrete structures, and unreinforced masonry facilities are particularly susceptible to earthquake damage, potentially resulting in hazardous materials releases, business disruptions, and supply chain interruptions.
- **Critical Infrastructure and Public Facilities:** Several critical infrastructure systems in Santa Clarita could be severely impacted by a major earthquake, including:
- **Water and Sewer Systems:** Santa Clarita's water supply network – including Santa Clarita Water infrastructure and local distribution systems – relies on underground pipelines that are vulnerable to rupture during earthquakes. Damage could disrupt water supply, fire suppression capability, and wastewater treatment operations.
- **Electric and Natural Gas Utilities:** Santa Clarita is served by Southern California Edison (SCE) for electricity and Southern California Gas Company for natural gas. Earthquakes could damage substations, transmission lines, and high-pressure gas pipelines. A major event may result in prolonged power outages and gas leaks, increasing the risk of fires.
- **Transportation Networks:** Critical transportation routes include Interstate 5, State Route 14, State Route 126, Newhall Pass, and key arterial roadways. Earthquake shaking could cause roadway failure, bridge damage, rockfall, and landslides, potentially cutting off access to and from the San Fernando Valley and neighboring regions – an issue noted historically during past earthquakes.

Natural Gas Pipelines



Santa Clarita's areas most susceptible to liquefaction include portions of the Santa Clara River floodplain, Soledad Canyon floodplain, and areas with shallow groundwater or loose alluvial deposits. The California Geological Survey designates these areas as having moderate to high liquefaction potential. Liquefaction can cause severe ground instability, structural collapse, and damage to underground utilities.

By contrast, hillside regions such as Placerita Canyon, Sand Canyon, Mint Canyon, and the slopes surrounding Valencia and Saugus have low liquefaction risk but higher vulnerability to seismically induced landslides. These areas contain steep slopes, fractured sedimentary bedrock, and older landslide deposits that may become unstable during strong shaking.

Seismically induced settlement is another concern for Santa Clarita, particularly in areas where loose, recently deposited sediments are present along the Santa Clara River and wash corridors.

Strong ground shaking can cause soils to compact, resulting in uneven settlement of buildings, pipelines, and roadways. Proper foundation design, soil densification, and geotechnical investigations remain critical components of seismic risk mitigation in new development.

3.3.4.3 Magnitude and Severity

Earthquake severity is measured using two primary scales: magnitude, which quantifies the energy released at the earthquake's source, and intensity, which describes the observed effects on people, structures, and the environment at different locations.

The Moment Magnitude Scale (Mw) is the most widely used measure of earthquake size, replacing the older Richter Scale. It quantifies the total energy released by an earthquake by considering fault length, slip amount, and rock rigidity. The Richter Scale, developed in 1935, assigns a logarithmic magnitude value to seismic events, where each whole-number increase represents a tenfold increase in amplitude and approximately 32 times more energy release.

Magnitude Classifications:

- Minor (Mw <3.0) – Generally not felt but recorded by seismographs.
- Light (Mw 3.0–4.9) – Often felt but rarely causes damage.
- Moderate (Mw 5.0–5.9) – Can cause damage to poorly built structures.
- Strong (Mw 6.0–6.9) – Can cause widespread damage, particularly near the epicenter.
- Major (Mw 7.0–7.9) – Causes significant destruction over a large area.
- Great (Mw 8.0+) – Capable of catastrophic damage and widespread impact.

The Modified Mercalli Intensity (MMI) Scale categorizes earthquakes based on their observed effects on people, buildings, and natural features. It is measured on a Roman numeral scale from I (Not Felt) to XII (Total Destruction). Unlike magnitude, which remains constant for a given earthquake, MMI values vary by location based on distance from the epicenter, soil composition, and building vulnerability.

Intensity Levels:

- I – Instrumental: Not felt except by very sensitive instruments.
- IV – Light: Felt indoors by many, outdoors by few; no damage.
- VII – Very Strong: Noticeable damage to buildings; furniture overturned.
- IX – Violent: Severe damage, some buildings collapse.
- XII – Catastrophic: Total destruction; ground movement visible.

Santa Clarita faces a high risk of strong ground shaking due to its proximity to the San Andreas Fault, Santa Susana Fault, Sierra Madre Fault Zone, and the San Gabriel Fault, all of which are capable of producing major earthquakes. Based on USGS ShakeMap projections, a magnitude 7.0–8.0 earthquake on the southern San Andreas Fault could generate Modified Mercalli Intensity (MMI) VIII (Severe) to MMI IX (Violent) shaking in Santa Clarita, particularly in areas underlain by soft alluvium such as the Santa Clara River Valley, Soledad Canyon, and portions of Canyon Country. This level of seismic intensity could lead to severe infrastructure damage, widespread power outages, ruptured water and gas pipelines increasing fire risks, and localized liquefaction hazards in areas with water-saturated soils, especially within low-lying and industrial zones near major wash corridors.

3.3.4.4 Historical Occurrences

FEMA Disaster Declarations

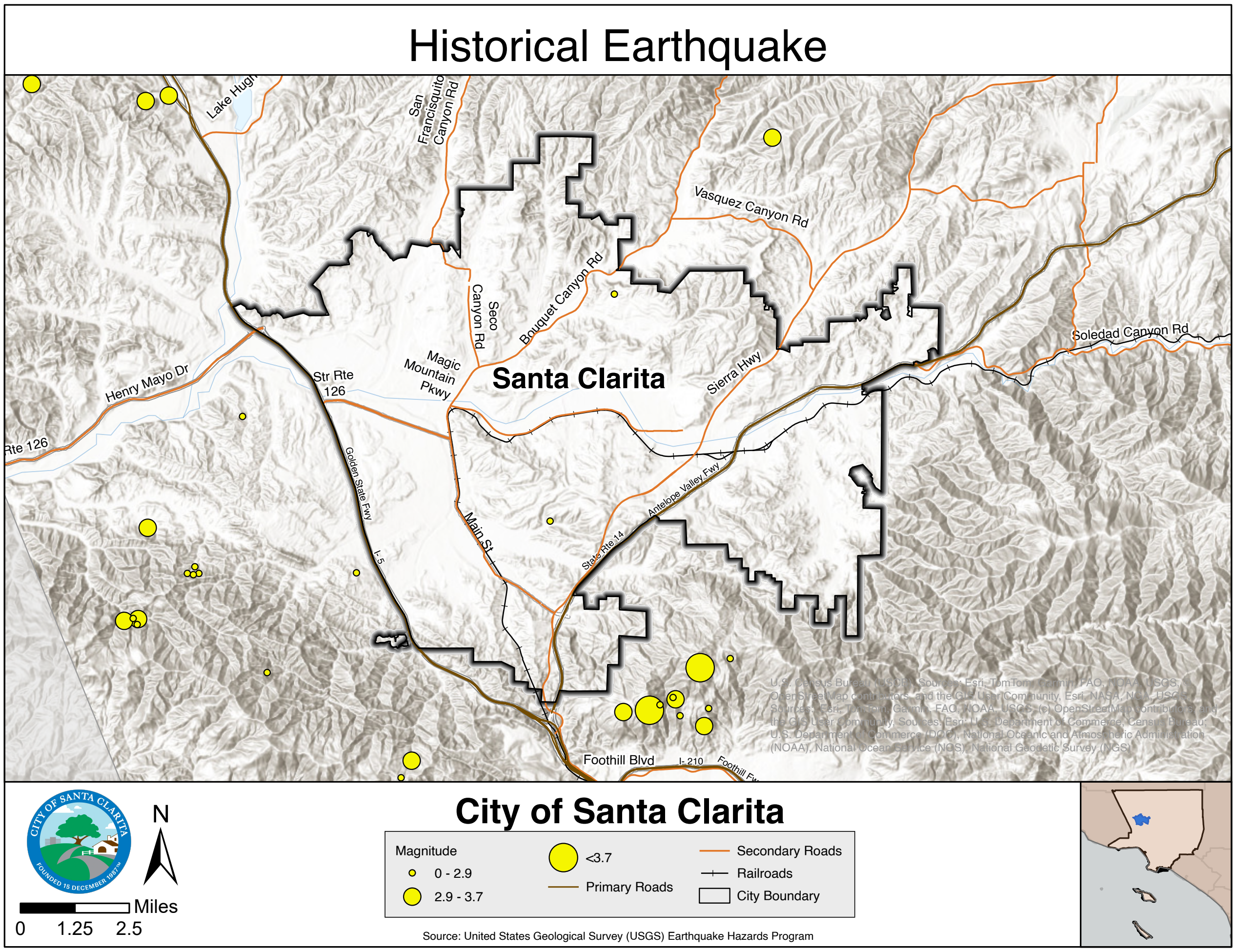
Incident Subcategory	County	FEMA Declaration String	Calendar Year of Declaration	Date Month	Declaration Date	Declaration Title	State
Earthquake	Los Angeles County	DR-845-CA	1990	April	4/6/1990	EARTHQUAKE	CA
Earthquake	Los Angeles County	DR-1008-CA	1994	January	1/17/1994	NORTHRIDGE EARTHQUAKE	CA
Earthquake	Los Angeles County	DR-1577-CA	2005	February	2/4/2005	SEVERE STORMS, FLOODING, DEBRIS FLOWS, AND MUDSLIDES*	CA
Earthquake	Los Angeles County	DR-4301-CA	2017	February	2/14/2017	SEVERE WINTER STORMS, FLOODING, MUDSLIDES, DEBRIS FLOWS*	CA

California Governor-declared Declarations

Date of Disaster	Type of Disaster	Counties Involved
June 28, 1992	Earthquakes	Los Angeles, Riverside, San Bernardino

List of Governor-declared disasters for property tax purposes since 1991. Source: California State Board of Equalization

Santa Clarita is located within one of the most seismically active regions in California, situated near several major and secondary fault systems capable of producing strong, damaging earthquakes. The Santa Clarita Valley has experienced multiple historical seismic events that



produced significant shaking, structural impacts, and widespread disruptions. Several notable earthquakes have affected Santa Clarita directly:

- **1971 San Fernando (Sylmar) Earthquake (Magnitude 6.6)**: On February 9, 1971, the Sylmar earthquake caused severe shaking throughout the Santa Clarita Valley. The event damaged the Interstate 5/State Route 14 interchange, resulting in collapsed freeway overpasses and long-term transportation disruptions that isolated Santa Clarita from the San Fernando Valley. Local structures experienced cracked walls, damaged chimneys, and compromised utilities. Hospitals in Sylmar suffered extensive damage, prompting major revisions to hospital seismic-safety standards statewide. Although FEMA declarations were not yet common in 1971, the earthquake is recognized as one of the most damaging events to impact Santa Clarita.

- **1992 Landers (Magnitude 7.3) and Big Bear (Magnitude 6.5) Earthquakes**: On June 28, 1992, the Landers earthquake, followed by the Big Bear earthquake the same afternoon, produced long-duration shaking across Southern California. In Santa Clarita, both events were widely felt, triggering building inspections and causing nonstructural damage such as fallen ceiling tiles, cracked plaster, and displaced household contents. While Santa Clarita did not experience severe structural damage, the back-to-back earthquakes highlighted regional vulnerability and contributed to updates in seismic planning. These earthquakes were included under FEMA Major Disaster Declaration DR-937-CA.
- **1994 Northridge Earthquake (Magnitude 6.7)**: The January 17, 1994 Northridge earthquake was the most damaging seismic event in Santa Clarita's modern history. The epicenter, located approximately 15 miles south of the Santa Clarita Valley, generated strong to violent shaking that resulted in collapsed freeway overpasses along I-5 and SR-14, including portions of the Newhall Pass interchange. Santa Clarita experienced major structural damage to commercial buildings, multi-family housing complexes, and critical infrastructure systems. Thousands of residents were temporarily displaced, schools and businesses closed, and local lifelines including gas, water, and electricity suffered major outages. The event resulted in FEMA Major Disaster Declaration DR-1008-CA and caused an estimated $20 billion in regional damages.
- **1999 Hector Mine Earthquake (Magnitude 7.1)**: The October 16, 1999 Hector Mine earthquake, centered in the Mojave Desert, produced widespread shaking felt throughout Santa Clarita. Although no significant structural damage was reported, the event caused emergency inspections of bridges, utilities, and public facilities. The long-period shaking was notable in taller commercial structures, demonstrating the City's continued vulnerability to large, distant seismic events.
- **2019 Ridgecrest Earthquakes (Magnitude 6.4 and 7.1)**: The July 4–5, 2019 Ridgecrest earthquake sequence produced widespread shaking in the Santa Clarita Valley. Residents reported moderate to strong shaking, causing items to fall from shelves, minor cosmetic damage in older structures, and temporary evacuations of multi-story buildings. While Santa Clarita was far from the epicenter, the event prompted precautionary inspections of schools, bridges, and utility systems and highlighted the significant impact that large regional earthquakes can have on the City's infrastructure and emergency response systems.

3.3.4.5 Probability and Effects of Future Conditions

Overall probability over next five years: ***Moderate.***

Seismic risk in Santa Clarita is assessed using Probabilistic Seismic Hazard Analysis (PSHA), which estimates the likelihood of various levels of ground shaking over time. The United States Geological Survey (USGS) and the California Geological Survey (CGS) provide earthquake probability models based on historical seismic activity, fault slip rates, and regional geologic conditions. The 2024 Uniform California Earthquake Rupture Forecast (UCERF3) estimates a 72% probability of a magnitude 6.7 or greater earthquake in Southern California within the next 30 years. The most significant earthquake risks to Santa Clarita originate from the San Andreas Fault, the Santa Susana Fault, the Sierra Madre Fault Zone, and the San Gabriel Fault System. The Mojave–Southern California segment of the San Andreas Fault, located approximately 10–15 miles northeast of Santa Clarita, is capable of producing earthquakes ranging from magnitude 7.3 to 8.2. A major rupture on this segment could generate Modified Mercalli Intensity (MMI) VIII–X shaking in Santa Clarita, resulting in severe impacts to buildings, infrastructure, and transportation networks.

The Santa Susana Fault, which runs south of the Santa Clarita Valley, has produced multiple moderate-to-large historical earthquakes and remains one of the most hazardous thrust faults in Southern California. The Sierra Madre Fault Zone, located along the San Gabriel Mountains south of Santa Clarita, is capable of producing magnitude 6.5–7.2 earthquakes with strong ground shaking affecting the City's southern and central neighborhoods. The San Gabriel Fault, which runs east–west through northern Los Angeles County, also contributes to regional seismic risk and could produce damaging shaking in the Santa Clarita Valley. Together, these interacting fault systems create a complex seismic environment with the potential for both isolated and multi-fault rupture scenarios affecting Santa Clarita.

Seismic intensity mapping classifies Santa Clarita as a high-risk zone for strong ground motion, particularly in areas with younger alluvial soils along the Santa Clara River, including Newhall, portions of Valencia, and industrial corridors near the I-5/SR-126 interchange. Liquefaction modeling from the California Geological Survey (CGS) identifies areas near the Santa Clara River, Bouquet Canyon Wash, and Wiley Canyon as susceptible to liquefaction due to shallow groundwater and unconsolidated sediments. During strong shaking, these conditions could result in ground failure, settlement, damage to structures, and disruption of buried utilities. Upland neighborhoods, including portions of Canyon Country and Stevenson Ranch, face elevated landslide and rockfall risk during seismic events due to steep slopes and fractured bedrock.

Recent geophysical research indicates that multi-fault ruptures – such as linked ruptures between the San Andreas Fault and adjacent thrust systems – are more probable than previously believed. If the San Andreas Fault were to rupture in combination with faults in the Transverse Ranges, the resulting earthquake could exceed magnitude 8.0, producing widespread regional devastation, damaging key transportation corridors, and interrupting water, energy, and communications systems across the Santa Clarita Valley. Such an event would significantly affect emergency response operations, increase recovery timelines, and create substantial long-term social and economic disruption in the region.

Impacts of Future Earthquakes: Structural damage in Santa Clarita remains a significant concern due to the age and composition of many buildings. Portions of Newhall and other older neighborhoods include structures built before California's modern seismic codes. Older commercial buildings, unreinforced masonry structures, and pre-1970s soft-story or non-ductile concrete buildings face a heightened probability of severe structural damage or collapse during a major earthquake.

Transportation and infrastructure disruptions would likely be substantial during a magnitude 7.5 or greater regional earthquake. A major seismic event could damage critical freeway connections, including Interstate 5, State Route 14, and key overpasses such as the Newhall Pass Interchange, which has collapsed in past earthquakes. Damage to these routes would impede emergency response, restrict regional mobility, and potentially isolate the Santa Clarita Valley from the San Fernando Valley and greater Los Angeles region, as occurred in both the 1971 Sylmar and 1994 Northridge earthquakes.

Water and utility failures pose additional risks. The Castaic Lake system, local water mains, and natural gas pipelines are vulnerable to rupture, which could disrupt water supply, wastewater systems, and natural gas distribution. Post-earthquake fires frequently follow seismic events due to broken gas lines and electrical failures, creating compounding hazards for residential and commercial areas.

A major earthquake in Santa Clarita could also result in significant economic and social disruption, including business closures, loss of industrial productivity, and temporary displacement of residents, particularly in mobile home communities and high-density apartment complexes. Educational institutions, hospitals, and government buildings may experience operational interruptions, affecting public services and community recovery.

Although climate change does not cause earthquakes, it can influence secondary hazards such as landslides and flooding. Extended drought conditions can destabilize slopes in portions of Canyon Country, Mint Canyon, and the Angeles National Forest. Additionally, projected increases in intense atmospheric river storms may result in post-earthquake flooding along the Santa Clara River corridor, complicating emergency response and recovery efforts.

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3.3.5 High Wind/Storms

3.3.5.1 Description

High wind events in Southern California stem from various meteorological phenomena, including Santa Ana winds, thunderstorm-related winds, and strong frontal systems. These events pose significant risks to infrastructure, utilities, and public safety.

Santa Ana Winds: Originating from high-pressure systems over the Great Basin, Santa Ana winds are dry, warm, and gusty northeast winds that blow from the interior of Southern California toward the coast and offshore. As these winds descend through mountain passes and canyons, they accelerate and warm, leading to extremely dry conditions. These winds are most common between September and April, with peak activity in the fall and early winter months. During strong events, wind speeds in the Santa Clarita Valley frequently reach sustained levels of 40 to 60 mph, with gusts exceeding 80 mph in exposed locations such as the Newhall Pass, Soledad Canyon, and Bouquet Canyon. Santa Ana winds significantly increase wildfire risks by rapidly spreading flames through dry vegetation, leading to large-scale fire disasters and declared emergencies. Santa Clarita has repeatedly experienced extreme Santa Ana wind conditions, including the January 2024 wind event, during which gusts over 70 mph damaged trees, power lines, and structures across the valley and contributed to widespread Public Safety Power Shutoffs (PSPS).

Thunderstorm and Downburst Winds: Thunderstorm-related winds result from rapid downdrafts, creating damaging straight-line winds. Downburst winds occur when storm clouds collapse, forcing a powerful surge of air toward the ground. These winds can reach speeds of 60 to 80 mph and are capable of uprooting trees, damaging power lines, and disrupting transportation networks. The force of these winds poses risks to aviation, utility infrastructure, and buildings, particularly those constructed before modern wind-resistant building codes were in place. Santa Clarita has experienced several summer and monsoon-season downburst events – especially in Canyon Country and Valencia – resulting in fallen trees, localized flooding, and short-duration power outages.

Gradient Winds from Storm Systems: Large-scale storm systems moving through Southern California generate strong gradient winds, particularly during winter storms. These winds develop when intense pressure differences drive sustained wind speeds of 40 to 60 mph, with higher gusts in areas with open terrain or near passes and canyons. Winter frontal storms associated with the Pacific jet stream often lead to long-duration high wind events, which can cause widespread utility outages, structural damage, and disruptions to transportation corridors. In Santa Clarita, gradient winds frequently impact major transportation routes such as Interstate 5, State Route 14, and the Newhall Pass Interchange, occasionally leading to overturned vehicles, traffic delays, and temporary closures.

In Santa Clarita, high wind events have had tangible impacts on local events and infrastructure. Notably, repeated high wind episodes in 2023 and 2024 forced cancellations of outdoor community events, caused extensive tree damage in parks such as Central Park and Bouquet Canyon Park, and triggered both PSPS-related outages and conventional weather-induced power failures. These incidents highlight the challenges severe wind conditions pose to outdoor activities, public gatherings, aviation operations at Whiteman Airport and Agua Dulce Airpark, and the reliability of power and transportation systems throughout the Santa Clarita Valley.

3.3.5.2 Location and Geographic Extent

Santa Clarita is susceptible to high wind events, notably the Santa Ana winds. These winds originate from high-pressure systems over the Great Basin and flow toward the coast, accelerating through mountain passes such as the Newhall Pass and the Soledad Canyon corridor, which are in close proximity to Santa Clarita. As these winds descend, they warm and dry, leading to extremely low humidity levels. Santa Ana winds are most prevalent between September and April, with peak activity during the fall and early winter months. The National Weather Service notes that these winds can reach sustained speeds exceeding 40 mph, with gusts surpassing 60–80 mph during extreme events in the Santa Clarita Valley, particularly in exposed areas such as Canyon Country, Valencia's higher ridgelines, and the I-5/State Route 14 interchange.

The topography of Santa Clarita, characterized by its basin-and-canyon valley setting and the constricted terrain of the Newhall Pass, influences wind flow and intensity. The presence of multiple canyon systems – such as Bouquet Canyon, Soledad Canyon, and Sand Canyon – creates accelerators for wind flow, resulting in stronger localized gusts. The City's mix of suburban development, industrial corridors, and wide open spaces allows winds to accelerate, particularly affecting areas along major transportation routes and hillside communities. These locations are especially vulnerable to wind-related hazards, including debris, downed power lines, and structural damage. The California State Hazard Mitigation Plan identifies utility disruptions, infrastructure damage, and wildfire ignition from wind-driven embers as primary risks associated with high wind events.

Relationship to Land Use and Development: In Santa Clarita, land use and development patterns significantly influence the impact of high wind events:

- **Industrial Areas:** The City hosts several major industrial and warehouse districts, including the Valencia Industrial Center, the Commerce Center, and areas along Rye Canyon Road. Many facilities feature lightweight roofing materials and expansive structures prone to wind damage. These buildings can act as wind catchers, making them susceptible to roof failures, siding detachment, and accumulation of hazardous debris during strong wind events. Industrial zones may also store hazardous materials, presenting further risks if containment systems are compromised during severe winds.
- **Transportation Corridors:** Major highways and rail lines traverse Santa Clarita, including Interstate 5, State Route 14, and the Metrolink Antelope Valley Line, making transportation infrastructure vulnerable to wind-related disruptions. High-profile vehicles such as trucks and trailers are at risk of overturning during strong winds, leading to road closures and accidents – particularly in the Newhall Pass, which is one of the windiest transportation bottlenecks in Southern California. Debris, including fallen trees, damaged signage, and blown roofing material, can obstruct roadways, while rail operations may face disruptions due to debris on tracks or failures of overhead electrical or signal equipment.
- **Residential Neighborhoods**: Areas with mature trees and above-ground power lines – such as parts of Newhall, Saugus, Canyon Country, and older Valencia neighborhoods – are at increased risk of power outages and property damage. High winds can break large tree limbs, causing significant damage to homes and vehicles. Wind-driven debris, such as loose roofing materials, trampolines, fences, and patio furniture, can become projectiles, posing additional safety hazards. Older homes constructed before modern building code updates may lack adequate wind-resistant features, increasing their susceptibility to structural damage.
- **Critical Infrastructure:** High winds pose substantial threats to power distribution systems, communication networks, and emergency response operations. Downed power lines can lead to extended outages, disrupting businesses and essential services. Santa Clarita is among the most frequently affected communities in Los Angeles County by Public Safety Power Shutoffs (PSPS) due to extreme wind conditions combined with wildfire risk in surrounding hillsides. In extreme cases, power failures can hinder emergency response efforts by disabling traffic signals, communication towers, and public safety facilities. Utility companies may implement PSPS during extreme wind events to reduce wildfire risk, but these measures also introduce challenges for residents and businesses reliant on uninterrupted power supply.

3.3.5.3 Magnitude and Severity

Understanding the magnitude and severity of high wind events in Santa Clarita requires the use of standardized meteorological scales that quantify wind speeds, storm intensity, and associated damage potential. While hurricanes and tornadoes are rare, the region experiences significant risks from Santa Ana winds and atmospheric river events, all of which can impact infrastructure, transportation, and public safety.

Intensity of Rain or Ice Pellets Based on Rate-of-Fall

Intensity	Criteria
Light	Up to 0.10 inch per hour; maximum 0.01 inch in 6 minutes.
Moderate	0.11 inch to 0.30 inch per hour; more than 0.01 inch to 0.03 inch in 6 minutes.
Heavy	More than 0.30 inch per hour; more than 0.03 inch in 6 minutes.

Estimating Intensity of Rain

Intensity	Criteria
Light	From scattered drops that, regardless of duration, do not completely wet an exposed surface up to a condition where individual drops are easily seen.
Moderate	Individual drops are not clearly identifiable; spray is observable just above pavements and other hard surfaces.
Heavy	Rain seemingly falls in sheets; individual drops are not identifiable; heavy spray to height of several inches is observed over hard surfaces.

https://www.icams-portal.gov/resources/ofcm/fmh/FMH1/fmh1_2019.pdf

Beaufort Scale

Beaufort Number	Wind Speed (mph)	Seaman's Term	Effects on Land
0	Under 1	Calm	Calm; smoke rises vertically.
1	1–3	Light Air	Smoke drift indicates wind direction; vanes do not move.
2	4–7	Light Breeze	Wind felt on face; leaves rustle; vanes begin to move.
3	8–12	Gentle Breeze	Leaves and small twigs in constant motion; light flags extended.

Beaufort Number	Wind Speed (mph)	Seaman's Term	Effects on Land
4	13–18	Moderate Breeze	Dust, leaves, and loose paper raised; small branches move.
5	19–24	Fresh Breeze	Small trees begin to sway.
6	25–31	Strong Breeze	Large branches move; whistling heard in wires.
7	32–38	Moderate Gale	Whole trees in motion; resistance felt when walking against wind.
8	39–46	Fresh Gale	Twigs and small branches break off trees.
9	47–54	Strong Gale	Slight structural damage occurs; slates blown off roofs.
10	55–63	Whole Gale	Seldom experienced on land; trees broken; structural damage occurs.
11	64–72	Storm	Very rarely experienced on land; widespread damage.
12	73 or higher	Hurricane	Violence and destruction.

Beaufort Wind Force Scale: The Beaufort Wind Force Scale classifies wind speeds based on their observed effects on land and structures.

- **Beaufort Force 6-7 (25-38 mph):** Strong winds that can displace unsecured objects, impact high-profile vehicles, and accelerate wildfire spread.
- **Beaufort Force 8-9 (39-54 mph):** Gale-force winds capable of breaking tree limbs, causing minor structural damage, and resulting in power outages.
- **Beaufort Force 10-11 (55-73 mph):** Storm-force winds that present significant risks to infrastructure, including damage to mobile homes and lightweight structures.

National Weather Service (NWS) High Wind Warning Criteria: The NWS issues alerts based on sustained wind speeds and gusts:

- Wind Advisory: Sustained winds of 31-39 mph or gusts of 46-57 mph for over an hour.
- High Wind Warning: Sustained winds of 40+ mph or gusts exceeding 58 mph, with structural damage likely.
- Extreme Wind Warning: Sustained winds over 115 mph, typically associated with extreme storm conditions.

The severity of high wind hazards depends on several factors, including wind speed, duration, and environmental conditions such as topography and urban development. Santa Clarita is particularly vulnerable to three primary types of high wind events:

Santa Ana Winds: Santa Ana winds are warm, dry winds that develop from high-pressure systems over the Great Basin, accelerating as they move downslope into Southern California. These winds can persist for several days and create extreme fire conditions due to low humidity and high temperatures.

- Typical sustained wind speeds range from 40-60 mph, with peak gusts exceeding 80 mph in extreme cases.
- Major impacts include wildfire spread, downed power lines, roadway hazards, and airborne debris, all of which increase emergency response demands.
- Historical Santa Ana wind events have resulted in widespread infrastructure damage and FEMA-declared disasters due to fire ignition and rapid flame spread.

Thunderstorm Winds and Microbursts: Severe convective storms can generate strong winds, including microbursts and straight-line winds, which are particularly dangerous due to their sudden onset and localized nature.

- Wind speeds in microbursts can reach 60-100 mph, producing damage comparable to an EF0-EF1 tornado.
- Potential impacts include roof failures, structural collapses, and disruptions to aviation and transportation infrastructure.

Atmospheric River Events: Atmospheric rivers are long, narrow bands of concentrated moisture that bring heavy precipitation and strong winds to California, particularly during winter storm systems. These events have become more intense due to climate change, leading to increased hazards from both wind and flooding.

- Wind speeds associated with atmospheric rivers typically range from 40-70 mph, especially along storm fronts.
- Secondary hazards include widespread flooding, road closures, and increased soil saturation, which can lead to landslides.

3.3.5.4 Historical Occurrences

FEMA Disaster Declarations

Incident Subcategory	County	FEMA Declaration String	Calendar Year of Declaration	Date Month	Declaration Date	Declaration Title	State
Severe Storm	Los Angeles County	DR-253-CA	1969	January	1/26/1969	SEVERE STORMS & FLOODING	CA
Severe Storm	Los Angeles County	DR-547-CA	1978	February	2/15/1978	COASTAL STORMS, MUDSLIDES & FLOODING	CA
Severe Storm	Los Angeles County	DR-595-CA	1979	August	8/24/1979	SEVERE STORMS, FLOODING, AND MUDSLIDES	CA
Severe Storm	Los Angeles County	DR-979-CA	1993	February	2/3/1993	SEVERE WINTER STORM, MUD & LAND SLIDES & FLOODING	CA
Severe Storm	Los Angeles County	DR-1046-CA	1995	March	3/12/1995	SEVERE WINTER STORMS, FLOODING, LANDSLIDES, MUD FLOW	CA
Severe Storm	Los Angeles County	DR-1203-CA	1998	February	2/9/1998	SEVERE WINTER STORMS AND FLOODING	CA
Severe Storm	Los Angeles County	DR-1577-CA	2005	February	2/4/2005	SEVERE STORMS, FLOODING, DEBRIS FLOWS, AND MUDSLIDES	CA
Severe Storm	Los Angeles County	DR-1585-CA	2005	April	4/14/2005	SEVERE STORMS, FLOODING, LANDSLIDES, AND MUD AND DEBRIS FLOWS	CA

Incident Subcategory	County	FEMA Declaration String	Calendar Year of Declaration	Date Month	Declaration Date	Declaration Title	State
Severe Storm	Los Angeles County	DR-1884-CA	2010	March	3/8/2010	SEVERE WINTER STORMS, FLOODING, AND DEBRIS AND MUD	CA
Severe Storm	Los Angeles County	DR-4301-CA	2017	February	2/14/2017	SEVERE WINTER STORMS, FLOODING, MUDSLIDES, DEBRIS FLOWS	CA
Severe Storm	Los Angeles County	DR-4305-CA	2017	March	3/16/2017	SEVERE WINTER STORMS, FLOODING, AND MUDSLIDES	CA
Severe Storm	Los Angeles County	DR-4308-CA	2017	April	4/1/2017	SEVERE WINTER STORMS, FLOODING, AND MUDSLIDES	CA
Severe Storm	Los Angeles County	DR-4482-CA	2020	April	4/2/2020	SEVERE STORMS, FLOODING, AND MUDSLIDES	CA
Hurricane / Tropical Storm	Los Angeles County	DR-4752-CA	2023	August	8/20/2023	HURRICANE HILARY	CA
Severe Storm	Los Angeles County	DR-4683-CA	2023	March	3/10/2023	SEVERE WINTER STORMS, FLOODING, LANDSLIDES	CA
Severe Storm	Los Angeles County	DR-4777-CA	2024	February	2/18/2024	SEVERE STORMS AND FLOODING	CA
Severe Storm / Straight-Line Winds	Los Angeles County	DR-4856-CA	2025	January	1/8/2025	WILDFIRES & STRAIGHT-LINE WINDS	CA

Flood-related declared disasters in Los Angeles County. Source: FEMA

California Governor-declared Declarations

Date of Disaster	Type of Disaster	Counties Involved
Early February 2024 (beginning Feb 3)	Severe winter storms	*Includes Los Angeles County* (Alameda, Butte, Glenn, Humboldt, Lake, Los Angeles, Marin, Mendocino, Monterey, Napa, Orange, Riverside, Sacramento, San Bernardino, San Diego, San Francisco, San Luis Obispo, Santa Barbara, Santa Clara, Santa Cruz, Solano, Sonoma, Sutter, Trinity, Ventura)
August 20, 2023	Hurricane Hilary	Fresno, Imperial, Inyo, Kern, Los Angeles, Orange, Riverside, San Bernardino, San Diego, Siskiyou, Tulare, Ventura
February–March 2023	Severe winter storms	*Includes Los Angeles County*
September 9, 2022	Tropical Storm Kay	Imperial, Inyo, Los Angeles, Riverside, San Bernardino
January–February 2019	Winter storms	*Includes Los Angeles County*
January 2017	Storm System	*Includes Los Angeles County*
July 18, 2015	Rainstorms	Imperial, Kern, Los Angeles, Riverside, San Bernardino, San Diego
December 2010 – January 2011	Winter storms	*Includes Los Angeles County*
January 17–21, 2010	Winter storms	*Includes Los Angeles County*
March 2005	Severe rainstorms	Kern, Los Angeles, Orange, Riverside, San Bernardino, San Diego, Santa Barbara, Ventura
January 2005	Storms	Kern, Los Angeles, Orange, Riverside, San Bernardino, San Diego, Santa Barbara, Ventura
February 2, 1998	El Niño	*Includes Los Angeles County*
January 1995	Severe Winter Storms	*Includes Los Angeles County*
December 1992	Late Winter Storms	*Includes Los Angeles County*

List of Governor-declared disasters for property tax purposes since 1991. Source: California State Board of Equalization

- **December 2011**: An extreme regional windstorm severely impacted Santa Clarita and the broader Los Angeles County area. Although Pasadena suffered the most catastrophic impacts, Santa Clarita experienced sustained winds of 40–60 mph and gusts exceeding 80 mph in exposed canyon corridors, resulting in toppled trees, widespread power outages, damaged commercial signage, and roadway blockages. Local emergency crews responded to structural damage, downed lines, and traffic signal failures. This event did not trigger a FEMA declaration but required substantial local and county emergency measures.

- **February 2017**: An atmospheric river storm impacted Los Angeles County, including Santa Clarita, producing 50–65 mph wind gusts, flooding, soil saturation, and damage to infrastructure. This event contributed to FEMA Disaster Declaration DR-4301-CA, which covered counties impacted by severe winter storms, flooding, and wind damage. Santa Clarita experienced downed trees, roadway closures, erosion, and utility disruptions.
- **October 2020**: a severe Santa Ana wind event affected Santa Clarita, producing gusts above 70 mph in canyon areas such as Sand Canyon and Soledad Canyon. The event prompted road closures, power shutoffs by Southern California Edison, and enhanced wildfire warnings due to exceptionally low humidity. Although no FEMA declaration was issued, local emergency services implemented precautionary protocols and wind advisories.
- **January 2023**: A series of powerful winter storms fueled by atmospheric rivers affected Santa Clarita with gusts exceeding 60 mph, intense rainfall, localized flooding, and multiple utility failures. The storms caused significant damage to public and private infrastructure, including traffic disruptions and landslide-prone slope failures. These conditions contributed to FEMA Disaster Declaration DR-4683-CA.
- **August 2023**: Remnants of Hurricane Hilary brought rare tropical-storm-force winds and heavy rainfall to Santa Clarita. The region experienced flooding along creeks, dozens of downed trees, debris flows, and intermittent power outages. This event was included in FEMA DR-4752-CA.

3.3.5.5 Probability and Effects of Future Conditions

Overall probability over next five years: ***Likely.***

While hurricanes and tornadoes remain low-probability hazards in Santa Clarita, the region is susceptible to Santa Ana wind events, atmospheric river–driven storms, and convective windstorms. Climate change is projected to influence the frequency and intensity of these events, thereby affecting their impact on the area.

- **Wind Speed Probability Models:** Wind speed probability models integrate historical wind data, meteorological patterns, and climate projections to estimate the likelihood of high-wind events in Santa Clarita. Agencies such as the National Weather Service (NWS), the Federal Emergency Management Agency (FEMA), and the California Governor’s Office of Emergency Services (Cal OES) utilize these models to predict wind hazards and inform emergency planning.

- **Santa Ana Winds:** Historically, Los Angeles County experiences approximately 25 to 35 Santa Ana wind events per year, with peak gusts in Santa Clarita ranging from 40 to 70 mph, and occasionally higher in canyon areas such as the Newhall Pass and Soledad Canyon. Climate projections indicate a potential reduction in the frequency of these events, particularly during fall and spring, while the intensity during peak months may remain relatively unchanged.
- **Severe Windstorms:** The probability of storm-related winds exceeding 50 mph in Santa Clarita is estimated at once every 5 to 10 years, primarily associated with Pacific frontal systems and strong atmospheric river storms.
- **Extreme Wind Events (60+ mph):** Climate models suggest a 1 to 3% annual probability of extreme wind gusts over 60 mph in Santa Clarita, typically associated with strong Santa Ana events, downbursts, or powerful winter storm systems.

Recurrence intervals, or return periods, estimate the likelihood of an event occurring over a given timeframe. Based on historical data for Los Angeles County from NWS and FEMA:

- **40–50 mph winds:** Expected every 1 to 2 years.
- **50–60 mph winds:** Expected every 5 to 10 years.
- **60+ mph winds:** Expected every 10 to 20 years.
- **80+ mph winds:** Historically rare but possible in Santa Ana wind corridors such as the Newhall Pass or Agua Dulce/Acton areas.

Climate models from NOAA's Geophysical Fluid Dynamics Laboratory (GFDL) and the California Climate Assessment indicate shifts in wind patterns due to atmospheric changes. Santa Ana wind events may decrease in overall frequency by 2050 – especially during the fall and spring – but the intensity during peak months (December and January) is projected to remain relatively stable.

Winter storm wind speeds affecting Santa Clarita are projected to rise by 5 to 10% due to enhanced storm intensities driven by warming Pacific waters and intensified atmospheric rivers. Convective windstorms, including microbursts and downbursts, are expected to become more common, with gusts exceeding 60 mph occurring 30 to 50% more frequently by 2050.

Future Projections for Hazard Severity and Frequency

- **Santa Ana Winds:** While the overall frequency of Santa Ana winds may decline, particularly in fall and spring, the intensity during peak months is expected to remain consistent. This stability in intensity could continue to exacerbate wildfire risks and air quality degradation during these periods. Urban expansion throughout Santa Clarita's wildland–urban interface, combined with climate change, may increase wind-driven fire hazards, necessitating stricter vegetation management and infrastructure resilience planning.

- **Pacific Storm Systems:** Atmospheric rivers and extratropical cyclones are anticipated to bring stronger winds to Santa Clarita, particularly during the winter storm season. Wind speeds exceeding 50 mph may become more frequent by 2050, increasing risks of power outages, transportation disruptions, and structural damage. Rain-loaded storm systems will add compounding hazards, including wind-driven tree falls, debris flows in burn scar areas, and urban flooding along local drainage systems such as the Santa Clara River and Bouquet Creek.
- **Convective Windstorms:** Short-duration, high-impact wind bursts, including microbursts and straight-line winds, are projected to increase due to shifting atmospheric instability patterns. Severe wind gusts exceeding 60 mph from convective storms could occur 30 to 50% more frequently by 2050. Localized storm damage will increase, particularly in exposed areas such as Canyon Country, Saugus, and open industrial corridors.

Structural stress on buildings, power lines, and transportation networks is expected to intensify due to higher wind speeds. Wildfire risks will rise as Santa Ana winds maintain their intensity during peak months. Emergency response challenges will also grow, requiring updated protocols for wind-related power outages, roadway closures, and infrastructure failures.

3.3.6 Air Quality/Smoke

3.3.6.1 Description

Air quality and smoke hazards in Santa Clarita arise from a combination of wildfire smoke, urban/industrial emissions, transportation-related pollutants, and localized structural fires. Because the City is situated adjacent to the Angeles National Forest, the Santa Susana Mountains, and the Sierra Pelona foothills, Santa Clarita experiences some of the highest wildfire smoke exposure levels in Los Angeles County, especially during Santa Ana wind events. Air quality hazards are intensified by the region's topography, which forms a semi-enclosed valley that traps particulate matter and ozone, causing frequent exceedances of state and federal air quality standards.

Urban Fire and Smoke Sources: Urban fires in Santa Clarita occur in developed areas and are fueled by residential structures, commercial buildings, industrial operations, and vehicles. Although not as industrially dense as other parts of Los Angeles County, Santa Clarita contains significant industrial clusters in Valencia Industrial Center, Rye Canyon, and Commerce Center Drive, where large warehouses, manufacturing facilities, and storage yards contain flammable materials and equipment that can generate substantial smoke if ignited.

Key contributing factors include:

- **Industrial and Commercial Smoke Sources:** Santa Clarita's industrial facilities store and utilize flammable chemicals, solvents, compressed gases, paints, plastics, and fuels. In recent years, the rise of logistics and e-commerce distribution centers has increased on-site diesel truck traffic, equipment storage, and potential ignition sources. Industrial structure fires have produced dense localized smoke plumes, affecting workers, nearby neighborhoods, and traffic corridors.
- **Structural Fire Risks:** Older residential areas in Newhall, Canyon Country, and Saugus, as well as Santa Clarita's numerous mobile home parks, contain buildings constructed before adoption of more stringent fire-resistive codes. These structures can burn rapidly and produce thick toxic smoke. Multi-family apartment complexes can experience rapid interior smoke spread due to shared attics, older HVAC systems, and closely spaced units.
- **Transportation-Related Fires:** Santa Clarita is bisected by Interstate 5 and State Route 14, two of the busiest freight corridors in the region. Vehicle collisions, engine fires, and hazardous cargo incidents can produce significant smoke and temporarily degrade air

quality. Freight rail along the Metrolink Antelope Valley Line also presents ignition and smoke hazards due to mechanical malfunctions or brake-caused sparks.

Wildfire Smoke: Wildfire smoke presents the greatest air quality hazard to Santa Clarita. The City lies immediately downwind of some of Southern California's most fire-prone landscapes. Major fires in the region routinely blanket the Santa Clarita Valley with hazardous levels of fine particulate matter (PM2.5). Santa Clarita has experienced repeated direct and indirect impacts from major regional wildfires, including:

- **2016 Sand Fire** – 41,432 acres, producing several consecutive days of AQI > 200 (Very Unhealthy)
- **2019 Tick Fire** – 4,615 acres, causing school closures and AQI readings between 175–250
- **2020 Lake Fire** – 31,089 acres, sending smoke into the Santa Clarita Valley for more than a week
- **2022 Route Fire** – 5,200 acres, resulting in PM2.5 spikes above 150 $\mu g/m^3$

On multiple occasions during these events, Santa Clarita recorded some of the worst air quality in California, with PM2.5 levels reaching more than 10 times the EPA 24-hour standard (35 $\mu g/m^3$).

Key wildfire smoke risk factors include:

- **Ember Transport and Structural Ignition:** Santa Ana wind-driven embers can travel up to 1 mile, igniting vegetation and structures in WUI neighborhoods such as Sand Canyon, Placerita Canyon, Fair Oaks Ranch, Copper Hill, and Saugus. Even when flames remain distant, ember activity can generate smoke and create hazardous breathing conditions.
- **Frequency of Smoke Intrusion:** South Coast AQMD data show that Santa Clarita experiences 5–15 days per year of wildfire smoke-related AQI exceedances, depending on fire activity across Southern California. During active fire seasons, smoke is often transported from Ventura County, the Angeles National Forest, and northern Los Angeles County.
- **Public Health Impacts:** PM2.5 concentrations above 150–300 $\mu g/m^3$ during major fire events disproportionately affect sensitive populations, including children, older adults, and residents with asthma or cardiovascular conditions. Approximately 9.5% of Santa

Clarita adults have been diagnosed with asthma (California Health Interview Survey), increasing overall vulnerability.

Urban Vegetation and Fuel Sources: Although Santa Clarita maintains significant landscaped and suburban green space, persistent drought conditions, invasive grasses (e.g., foxtail, red brome), and drying ornamental vegetation increase ignition and smoke potential. Rights-of-way along Bouquet Canyon Road, Soledad Canyon Road, and the I-5 corridor accumulate dry fuels that can burn readily, producing heavy smoke during even small fires.

3.3.6.2 Location and Geographic Extent

Air quality and smoke impacts in Santa Clarita occur across the entire Santa Clarita Valley, affecting all four communities – Valencia, Saugus, Newhall, and Canyon Country – as well as adjacent unincorporated areas including Stevenson Ranch, Castaic, Agua Dulce, and Sand Canyon. The City's geography makes it particularly vulnerable to smoke accumulation and pollution transport. Santa Clarita is situated within a basin-like valley formation, bordered by the Santa Susana Mountains to the south, the San Gabriel Mountains to the east, and the Sierra Pelona Ridge to the north. These surrounding mountain ranges trap air masses and reduce dispersion of pollutants, especially during temperature inversions that commonly occur in late summer and fall.

Regional Smoke Influence: Santa Clarita lies directly downwind of several of Southern California's most active wildfire corridors. The City is within 5 to 10 miles of the Angeles National Forest and large wildland areas that have repeatedly produced major fires. Smoke from these fires routinely enters the valley, with wind-driven plumes funneled through Soledad Canyon, Placerita Canyon, and Towsley Canyon. Santa Ana wind episodes can transport smoke from fires as far as Ventura County, Kern County, or Orange County in a matter of hours.

South Coast AQMD monitoring shows that Santa Clarita's air basin frequently registers some of the region's highest PM2.5 values during wildfire events. During the 2016 Sand Fire, PM2.5 levels in Santa Clarita exceeded 250 μg/m³, classified as Very Unhealthy, and visibility dropped below 1 mile across parts of the City. Similar conditions occurred during the 2019 Tick Fire and 2022 Route Fire, when AQI values remained above 150 for multiple consecutive days.

Urban and Transportation Smoke Sources: In addition to wildfire smoke, Santa Clarita experiences localized smoke and particulate exposure from:

- Interstate 5 and State Route 14, two of the busiest transportation corridors in California

- Heavy diesel truck activity associated with Valencia Industrial Center and Commerce Center Drive
- Residential and commercial structure fires, which are most frequent in Newhall, Canyon Country, and Saugus
- Rail operations along the Metrolink Antelope Valley Line, which can generate smoke from engine emissions or mechanical fires

Localized smoke plumes from structure fires or vehicle fires can impact neighborhoods within a quarter to half-mile radius, particularly where topography channels smoke along low-lying areas or road corridors.

Geographic Extent of Wildfire Smoke Exposure: Wildfire smoke exposure in Santa Clarita is Citywide and not confined to any single neighborhood. However, certain areas experience more persistent or severe conditions:

- Eastern Santa Clarita (Sand Canyon, Fair Oaks Ranch, Canyon Country): Closest to wildfire ignition zones; first to receive smoke during regional fires.
- Southern areas (Newhall, Lyons Avenue corridor): Experience smoke entrapment from the Santa Susana Mountains.
- Northern areas (Saugus, North Valencia, Castaic): Frequent down-canyon smoke transport during wind reversals and overnight inversions.

According to CalEnviroScreen and South Coast AQMD, Santa Clarita experiences 8–15 days per year of AQI exceedances primarily due to wildfire smoke, with severe years (e.g., 2020, 2022) recording 20+ exceedance days.

Extent of Impact: Because smoke travels quickly and disperses widely, air quality impacts are not localized and can affect the entire population of approximately 230,000 residents. Sensitive receptors – including 17 public schools, multiple childcare centers, three hospitals/medical campuses, and numerous senior living facilities – are distributed throughout the valley and are susceptible to rapid air quality degradation.

3.3.6.3 Magnitude and Severity

The air quality and smoke hazards in Santa Clarita vary widely in magnitude depending on the source, meteorological conditions, and duration of exposure. The severity of air quality degradation is primarily evaluated using the Air Quality Index (AQI), which measures concentrations of pollutants such as fine particulate matter (PM2.5), ozone (O_3), carbon monoxide, and nitrogen oxides. Among these, PM2.5 and ozone are the primary drivers of unhealthy air in Santa Clarita.

Air Quality Impact – Air Quality Index (AQI) for Wildfire Smoke: Wildfire smoke from major California wildfires has previously impacted Santa Fe Springs, with AQI levels exceeding 200+ (Very Unhealthy). The AQI system measures pollution levels and associated health risks.

- **AQI 100-150**: Unhealthy for sensitive groups, requiring air quality advisories.
- **AQI 151-200**: Unhealthy for the general population, prompting recommendations to limit outdoor activities.
- **AQI 201-300**: Very unhealthy, necessitating outdoor activity restrictions and emergency health advisories.
- **AQI 300+**: Hazardous, triggering public health warnings, school closures, and emergency response measures.

Santa Clarita consistently records some of the highest ozone levels in Los Angeles County, due in part to its downwind position relative to the San Fernando Valley and Los Angeles Basin. According to the South Coast Air Quality Management District (SCAQMD), Santa Clarita experiences 80–100 days per year in which ozone levels exceed the federal 8-hour standard – the highest exceedance rate in the county outside of the San Gabriel Mountains corridor. Seasonal ozone peaks occur during late spring and summer when temperatures exceed 95°F, increasing photochemical reactions that create ground-level ozone.

Wildfire smoke presents a more extreme but episodic air quality hazard. During regional wildfire events – especially fires in the Angeles National Forest, Sierra Pelona Ridge, and the Santa Susana Mountains – PM2.5 levels in Santa Clarita can rise to “Unhealthy” (AQI 151–200), “Very Unhealthy” (AQI 201–300), or on rare occasions “Hazardous” (AQI 300+) levels. For example, during the 2019 Tick Fire, PM2.5 concentrations exceeded 180 $\mu g/m^3$, reaching “Very Unhealthy” ranges for multiple days. During the 2020 Soledad Fire and the statewide wildfire season, smoke intrusions pushed AQI values above 200, leading to school closures, recreation cancellations, and regional air quality advisories.

Santa Clarita’s geography intensifies the severity of smoke and pollutant accumulation. The Santa Clarita Valley functions as a basin surrounded by the Angeles National Forest to the south and east, the Sierra Pelona Mountains to the north, and the Santa Susana Mountains to the west. This topography traps pollutants during thermal inversions, especially during the fall and winter months. When inversion layers form, PM2.5 and smoke can linger for 24–72 hours, significantly increasing the duration of exposure for residents.

Vulnerable populations – including children, older adults, individuals with asthma or COPD, outdoor workers, and people living near high-traffic corridors – experience disproportionately severe impacts. According to the California Health Interview Survey, approximately 11% of Santa Clarita adults and 14% of children have asthma, exceeding statewide averages. During severe smoke events, Henry Mayo Newhall Hospital has reported spikes in emergency visits for respiratory distress, and Los Angeles County Public Health has issued multiple advisories warning residents to limit outdoor activity.

3.3.6.4 Historical Occurrences

Santa Clarita has experienced significant air quality and smoke impacts over the past several decades due to both local wildfires within and adjacent to the Santa Clarita Valley and regional wildfire smoke intrusions from large-scale fires across Los Angeles County, Ventura County, and the broader Southern California region. Chronic ozone exceedances have also been documented by the South Coast Air Quality Management District (SCAQMD) since the agency began monitoring in the area more than 30 years ago.

- One of the earliest well-documented severe air quality episodes occurred during the 2007 Southern California Fire Siege, when a series of major wildfires – including the Buckweed Fire, which burned 38,356 acres in and around Agua Dulce and directly threatened neighborhoods in northern Santa Clarita – produced dense smoke that settled over the valley for several days. PM2.5 concentrations exceeded 150 $\mu g/m^3$, resulting in “Unhealthy” to “Very Unhealthy” air quality readings and countywide health advisories. Schools in Santa Clarita restricted outdoor activities, and vulnerable residents were urged to remain indoors.
- In 2016, the Sand Fire burned 41,432 acres in the Angeles National Forest northeast of Santa Clarita, forcing evacuations along Soledad Canyon and generating thick smoke that blanketed the Santa Clarita Valley. Air quality monitors recorded PM2.5 concentrations above 170 $\mu g/m^3$, reaching “Very Unhealthy” levels for portions of several days. The smoke plume, combined with extreme heat, caused spikes in emergency room visits for respiratory distress and significant reductions in outdoor visibility, disrupting transportation along State Route 14.
- The 2019 Tick Fire, which ignited near Tick Canyon and forced the evacuation of thousands of Santa Clarita residents, resulted in some of the worst localized smoke conditions recorded in recent years. PM2.5 levels exceeded 180 $\mu g/m^3$, and the Air Quality Index (AQI) consistently remained above 200 (“Very Unhealthy”) during the

height of the fire. Los Angeles County Public Health issued multiple air quality warnings, and Santa Clarita suspended outdoor recreation programs and closed local parks due to hazardous conditions.

- In 2020, the statewide wildfire season – one of the most severe in California history – produced prolonged regional smoke intrusions in Santa Clarita, even though major fires were not burning directly within the City. The Lake Fire in the Angeles National Forest and the Bobcat Fire near the San Gabriel Mountains significantly deteriorated air quality across Los Angeles County. PM2.5 readings across Santa Clarita exceeded 100–150 $\mu g/m^3$ for multiple consecutive days, leading to "Unhealthy" conditions and public health advisories. During this period, SCAQMD documented some of the longest continuous stretches of poor air quality the region had experienced in more than a decade.
- More recently, in 2023 and 2024, a combination of local brush fires, controlled burns in the Angeles National Forest, and long-range smoke transported from Northern California and Pacific Northwest wildfires resulted in additional days of elevated particulate matter levels in Santa Clarita. While not as severe as the 2019 or 2020 events, these smoke episodes continued to highlight the region's vulnerability to both local ignition sources and distant wildfires influenced by Santa Ana wind patterns.

Santa Clarita's long-term history of elevated ozone levels also forms a critical part of its air quality hazard profile. SCAQMD records show that the Santa Clarita Valley has exceeded federal ozone standards every year for at least the past three decades, with the City experiencing 80–100 ozone exceedance days annually. These chronic conditions compound the acute risks posed by wildfire smoke, creating cumulative health impacts for residents – particularly those with asthma, COPD, or other respiratory illnesses.

3.3.6.5 Probability and Effects of Future Conditions

Overall probability over next five years: ***Likely.***

Air quality and wildfire-smoke impacts in Santa Clarita are expected to increase in frequency, duration, and severity over the coming decades due to rising temperatures, more extreme wildfire seasons, prolonged drought, and increased regional wind events. Although Santa Clarita is not located within the highest wildfire severity zones, it is surrounded by high-risk wildland areas in the Angeles National Forest, the Santa Susana Mountains, and the Sierra Pelona Mountains. These areas have repeatedly produced large wildfires that degrade local air quality and generate hazardous smoke intrusions.

Probability of Smoke Intrusion: Climate models from CAL FIRE, the California Climate Assessment, and the U.S. Forest Service indicate that Southern California may experience a 20–60% increase in annual wildfire smoke days by 2050, driven by larger burn areas and longer fire seasons. Historically, Santa Clarita has recorded between 10 and 25 days per year with PM2.5 levels exceeding federal health standards during major wildfire years (2016, 2019, 2020). Projections suggest this could rise to 20–40 days annually by mid-century, especially during drought years or active Santa Ana wind seasons.

Wildfire Probability Near the City: Although Santa Clarita itself is heavily urbanized, wildland areas immediately north, east, and south of the City have burned repeatedly. The California Fourth Climate Change Assessment estimates a probability of 60–75% for at least one major wildfire in the region each decade, with burn intensities continuing to increase due to fuel accumulation and climate-driven drying.

Ozone Pollution: Santa Clarita lies within the South Coast Air Basin – one of the most ozone-polluted regions in the United States. The City currently records 80–100 ozone exceedance days per year, well above federal standards. By 2050, even under moderate emissions scenarios, the region is projected to experience an increase of 10–20% in summer high-ozone days, with hot, stagnant air masses increasing ozone formation.

Santa Ana Wind and Atmospheric Transport: Santa Ana wind events, while possibly decreasing slightly in annual frequency, are projected to remain equally or more intense during peak winter months. These winds serve as a powerful transport mechanism for wildfire smoke and embers from fires burning in nearby counties, including Los Angeles, Ventura, and Kern. Models suggest that strong Santa Ana events (>50 mph gusts) will continue to produce rapid smoke transport into Santa Clarita within hours of ignition, especially from wildfires in the Angeles National Forest and Ventura County foothills.

Projected Effects

- **Public Health Impacts**: Increased wildfire smoke exposure will elevate risks of respiratory illness, asthma exacerbations, and cardiovascular complications. During severe smoke events, Santa Clarita has already experienced PM2.5 concentrations exceeding 150–180 μg/m³, and similar or higher levels are expected in future extreme seasons. Sensitive populations – including children (approximately 20% of the City's population), seniors (about 13%), and individuals with asthma – will face the highest risks. Emergency room visits for respiratory distress historically spike by 20–40% on high-smoke days, a trend likely to worsen.

- **Infrastructure and Operational Impacts**: Smoke and particulate pollution can impair roadway visibility along I-5, SR-14, and local arterials; disrupt outdoor events; and reduce worker productivity, particularly in construction, logistics, and outdoor public safety operations. Prolonged poor air quality can also strain HVAC systems, increase filter replacement frequency, and reduce indoor air quality in older buildings with low-efficiency filtration.
- **Economic Impacts**: During severe wildfire smoke periods, Santa Clarita may experience recurring business disruptions, reduced outdoor commerce, and increased operational costs for schools, hospitals, and large employers. Studies from the California Air Resources Board (CARB) estimate statewide economic losses of $600 million to $1 billion annually from smoke-related work absences and productivity reductions – costs that proportionally affect the Santa Clarita Valley due to its large commuter and logistics workforce.
- **Compounding Climate Stressors**: Climate change will continue to increase heat extremes, drought severity, and vegetation stress – all of which heighten fuel volatility and the likelihood of severe regional wildfires. The interaction of extreme heat and high smoke concentrations also elevates health risks, as high temperatures reduce the body's ability to tolerate particulate pollution. These compounding stressors may create periods when air quality remains "Unhealthy" or "Very Unhealthy" for multiple consecutive days, overwhelming local response capacity.

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3.3.7 Flooding

3.3.7.1 Description

Flooding in Santa Clarita results from a combination of heavy precipitation, stormwater runoff, riverine overflow, burn-scar hydrology, infrastructure limitations, and drainage system failures. The City's location within the Santa Clarita Valley, along with its proximity to the Santa Clara River, San Francisquito Creek, and surrounding mountainous terrain – including the Santa Susana Mountains, Sierra Pelona Mountains, and Angeles National Forest foothills – significantly influences its flood risk profile.

Urban and Stormwater Flooding: Santa Clarita's rapidly urbanizing environment features extensive impervious surfaces, including roads, parking lots, and large commercial developments, which reduce natural water absorption and increase stormwater runoff. The City's storm drain system, while expanded in recent decades, remains undersized in some older neighborhoods and in areas built before modern drainage standards. Localized flooding occurs when rainfall exceeds system capacity, particularly during high-intensity storms. Low-lying intersections and areas such as Bouquet Canyon Road, Soledad Canyon Road, Sierra Highway, and segments of Newhall Avenue are particularly vulnerable to temporary street flooding during heavy precipitation events.

Flash Flooding: Due to its proximity to steep mountain watersheds – especially those draining the Angeles National Forest – Santa Clarita is vulnerable to flash flooding. Intense rainfall over a short duration can overwhelm natural drainage channels and stormwater infrastructure, resulting in sudden and hazardous flood conditions. Major drainage areas such as San Francisquito Canyon, Placerita Canyon, and Mint Canyon have historically funneled high-velocity floodwaters and debris into the Santa Clarita Valley. Following regional wildfires such as the 2016 Sand Fire and the 2019 Tick Fire, burn-scar hydrology has amplified flash flood and debris flow risks, significantly increasing peak runoff and sediment loads during storms.

Riverine Flooding: The Santa Clara River, which runs east–west through Santa Clarita, is the primary drainage channel for the region. Although normally dry or low-flowing, the river can experience high flows during major storm events, contributing to flood risks in adjacent areas. The watershed drains approximately 1,600 square miles and can generate storm flows exceeding 70,000 cubic feet per second during a 100-year storm event. Portions of the river corridor near Valencia, Saugus, and Canyon Country remain within FEMA-designated flood hazard zones, where elevated flows or channel migration during extreme events may affect nearby development and transportation routes.

Infrastructure-Related Flooding: Flooding in Santa Clarita can also result from failures or limitations in stormwater management infrastructure. The City's storm drain network currently includes older pipelines in Newhall and Canyon Country that struggle to handle high runoff volumes during intense rainfall. Segments of State Route 14, Interstate 5, and adjacent neighborhoods have been identified as vulnerable to nuisance flooding due to insufficient drainage capacity and roadway topography. Blockage from debris after wildfires can further reduce drainage performance, increasing the probability of localized flooding during storm events.

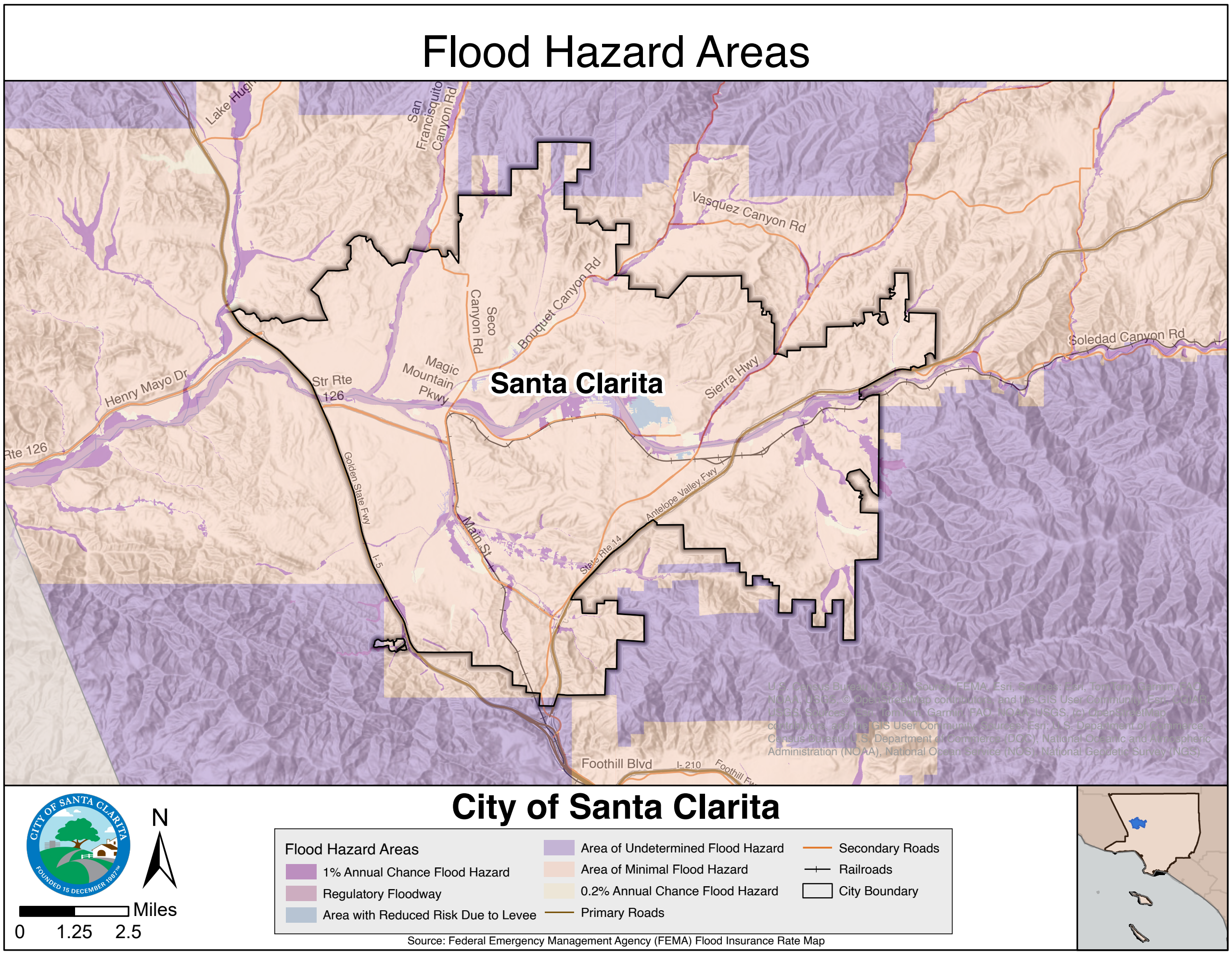
Groundwater and Drainage Basin Flooding: Although Santa Clarita is not prone to coastal or tidal flooding, rising groundwater levels and limited capacity in detention basins and debris basins can contribute to localized flood risks. LACFCD facilities, including the Placerita Canyon Debris Basin, San Francisquito Debris Basins, and multiple detention basins in Canyon Country and Valencia, play a critical role in managing stormwater but may reach capacity during extreme atmospheric river events, increasing the likelihood of overflow and downstream flooding

3.3.7.2 Location and Geographic Extent

Flooding in Santa Clarita is not uniformly distributed across the City, as certain areas are more vulnerable due to elevation differences, drainage constraints, wildfire burn-scar hydrology, and surrounding land use. The City's flood risk is influenced by its position within the Santa Clarita Valley and its reliance on regional stormwater management systems, including the Santa Clara River, San Francisquito Creek, Placerita Creek, and multiple tributary drainages originating in the surrounding mountains.

Roadways and Intersections with Recurring Flooding Issues: Several roadways and intersections in Santa Clarita experience frequent temporary flooding during heavy rain events, particularly in low-lying areas where storm drains have limited capacity or become blocked by debris and post-fire sediment. Major arterial roads with extensive paved surfaces, limited undercrossing drainage, and minimal adjacent natural absorption are particularly susceptible. Historically, areas near Bouquet Canyon Road and Soledad Canyon Road, Sierra Highway near Golden Valley Road, Sand Canyon Road at the Placerita Creek crossing, Valencia Boulevard near Magic Mountain Parkway, and Via Princessa near Sierra Highway have been prone to flood-related disruptions. These corridors are critical to local and regional mobility, and temporary closures due to stormwater accumulation can create significant traffic delays. Additionally, neighborhoods along Whites Canyon Road, segments of Newhall Avenue, and areas adjacent to

Railroad Avenue have experienced periodic flooding events due to drainage limitations and high runoff from adjacent slopes.



Industrial and Commercial Zones with High Runoff Volume: Santa Clarita's commercial and industrial areas contain extensive impervious surfaces, which prevent natural infiltration and contribute to increased stormwater runoff. Warehouses, retail centers, and large paved parking lots exacerbate flooding risks, particularly in areas where older drainage infrastructure is insufficient to manage high-intensity rainfall. Localized ponding and nuisance flooding may affect commercial, retail, and arterial corridor areas, including the Centre Pointe Parkway area, Bouquet Canyon Plaza area, and segments of Soledad Canyon Road, where intense rainfall can temporarily exceed local storm drain capacity or collect in low-lying paved areas. Industrial zones in Valencia's Commerce Center, Rye Canyon Road, and near Springbrook Avenue face additional vulnerabilities, particularly where large-scale runoff from nearby hillsides can overwhelm storm drainage capacity. In some cases, localized flooding may also increase the risk of hazardous material exposure if floodwaters reach industrial sites containing chemical storage or waste management facilities.

Storm Drain Infrastructure and Flood Control Channels: Santa Clarita relies on an extensive stormwater drainage network, including underground storm drains, LACFCD debris basins, and open-channel flood control systems. The Santa Clara River is the primary flood control facility in the region, draining approximately 1,600 square miles and capable of carrying 100-year storm flows exceeding 70,000 cubic feet per second (cfs). Major tributary systems – such as San Francisquito Creek, Placerita Creek, and Mint Canyon Wash – direct runoff from the Angeles National Forest and adjacent mountain slopes into the Santa Clara River. These drainage corridors play a critical role in diverting stormwater away from developed areas but can be overwhelmed during extreme rainfall events, especially following wildfire burn scars such as those created by the 2016 Sand Fire, 2017 Rye Fire, and 2019 Tick Fire.

Storm drain outfalls near the Santa Clara River and San Francisquito Creek may experience temporary backups during heavy rainfall, leading to localized street flooding in adjacent neighborhoods such as those near Railroad Avenue, Copper Hill Drive, and Golden Valley Road. Improvements to these systems, including channel-widening projects, storm drain upgrades, and debris basin expansions, have been ongoing to mitigate erosion and reduce flood risks.

Retention and debris basins throughout Santa Clarita – such as the Placerita Canyon Debris Basin, San Francisquito Basins, and several detention basins in Valencia and Canyon Country – provide temporary storage for excess runoff, helping prevent major flooding in urbanized areas. However, during extreme rainfall events, particularly atmospheric river conditions, these basins may exceed their design capacity, leading to additional flood risks.

Relationship to Land Use and Development: Flood hazards in Santa Clarita are closely tied to land use and development patterns, particularly in industrial, commercial, and residential corridors where high levels of impervious surfaces increase stormwater runoff. Future urban development, combined with projected climate change impacts – including more powerful atmospheric rivers – will further influence flood risks, necessitating improved land use planning and infrastructure adaptation.

- **Industrial and Commercial Development Impact on Flooding:** Santa Clarita's extensive commercial and industrial development has significantly altered natural drainage patterns, increasing reliance on engineered stormwater systems. Commercial expansion in Valencia Town Center, Centre Pointe Business Park, and the Canyon Country retail corridor has introduced large paved areas that heighten runoff during major storms. Older commercial zones in Newhall and Canyon Country, developed before modern stormwater retention requirements, remain vulnerable to periodic flooding when drainage systems reach capacity. Future redevelopment in these areas will require updated stormwater strategies such as permeable pavement, bioswales, underground detention systems, and enhanced debris/sediment capture to reduce flood risks.

- **Transportation Infrastructure and Flood Exposure:** Santa Clarita's major transportation corridors – including Interstate 5, State Route 14, Bouquet Canyon Road, Soledad Canyon Road, and Sierra Highway – are critical to regional mobility and economic activity. Flooding along these corridors can disrupt commuter traffic, emergency response operations, and goods movement, creating economic and logistical impacts. Past storm events have led to temporary closures on Sand Canyon Road, Valencia Boulevard, and portions of I-5 and SR-14, particularly where runoff from steep slopes or debris flows after wildfires enter the roadway. The SR-14 corridor north of Via Princessa is a known flood- and debris-flow-prone area, especially during post-fire storms such as those following the 2016 Sand Fire.

3.3.7.3 Magnitude and Severity

Flood severity in Santa Clarita is assessed using national hydrologic classification systems and local urban hydrology models. Factors such as flood depth, frequency, velocity, and the performance of stormwater infrastructure play a significant role in determining the impacts of flooding within the City.

FEMA Flood Zone Designations: FEMA's Flood Insurance Rate Maps (FIRMs) categorize flood hazards based on probability and expected inundation levels:

- **Zone X (Minimal Risk):** The majority of Santa Clarita falls within Zone X, indicating a low probability of large-scale riverine flooding. However, localized stormwater flooding remains a persistent hazard, particularly in areas with undersized drainage systems or where steep hillsides generate high runoff volumes. Post-wildfire debris flows – especially following the 2016 Sand Fire, 2017 Rye Fire, and 2019 Tick Fire – have intensified localized flooding risks in Canyon Country, Sand Canyon, Placerita Canyon, and sections of Newhall.
- **Zone A (High-Risk 100-Year Floodplain):** Portions of the Santa Clara River floodplain, including areas adjacent to Railroad Avenue, Bouquet Canyon Road, Magic Mountain Parkway, and segments of Valencia Industrial Center, fall within Zone A. FEMA requires properties in these zones to carry flood insurance if they have federally backed

mortgages. The Santa Clara River is capable of carrying 70,000+ cfs during a 100-year storm, influencing both inundation depth and flood velocity within mapped areas.

While catastrophic riverine flooding is not common, urban and post-fire flooding caused by storm drain capacity exceedance, debris flows, and high-intensity rainfall remains a significant issue during major storm events, particularly atmospheric river systems.

Local Flood Severity Analysis: Flood severity can be further analyzed using urban hydrology models, which assess:

- **Runoff Coefficients:** Santa Clarita's increasing proportion of impervious surfaces – including large retail centers, industrial parks, and expanding residential developments – contributes to elevated runoff. Hillside subdivisions in Canyon Country, Saugus, and Newhall produce high-velocity runoff that can exceed drainage capacity during storms exceeding 1 inch per hour.
- **Stormwater System Capacity:** Storm drains and detention basins in older neighborhoods, particularly in parts of Newhall, Canyon Country, and Valencia Industrial Center, may not be sufficient to handle extreme storm events. Infrastructure along Bouquet Canyon Road, Soledad Canyon Road, Sierra Highway, and Via Princessa has been identified as vulnerable to capacity exceedance and temporary ponding.
- **Flow Velocity and Debris Accumulation:** Areas near San Francisquito Creek, Placerita Creek, and the Santa Clara River may experience high-velocity flows, which can intensify erosion, damage roadways, and transport sediment and wildfire debris onto streets. Following large wildfires, debris-laden flows can develop within minutes, creating hazardous post-fire flood conditions.

Severity of Flooding: The magnitude of flooding in Santa Clarita varies depending on storm intensity, drainage performance, and land use patterns:

- **Minor Flooding:** Occurs during moderate rainstorms when storm drains experience temporary blockages, especially from post-fire sediment or accumulated debris. This leads to localized ponding in intersections, cul-de-sacs, and parking lots. These conditions typically resolve within hours once rainfall subsides.
- **Moderate Flooding:** Results from high-intensity rainstorms – most commonly atmospheric rivers – producing rainfall rates exceeding 0.75 to 1.25 inches per hour. Drainage systems may become temporarily overwhelmed, causing road closures on key transportation routes such as Soledad Canyon Road, Sierra Highway, Sand Canyon Road, and Valencia Boulevard. Commercial and industrial properties near the Santa Clara River or creek corridors may experience water intrusion, operational disruptions,

and minor structural impacts. Post-wildfire burn scars increase both frequency and severity of moderate flooding due to altered soil absorption and debris flow potential.

- **Major Flooding:** Is relatively rare but can occur during extreme precipitation events such as large-scale atmospheric rivers or successive multi-day storms. These events can cause significant failures or exceedance of stormwater infrastructure, particularly in neighborhoods downstream from recent burn areas. Floodwaters may inundate commercial and industrial zones near Railroad Avenue, Centre Pointe Parkway, and parts of Canyon Country, resulting in economic losses and potential contamination from industrial or commercial facilities located near flood-prone corridors.

3.3.7.4 Historical Occurrences

FEMA Disaster Declarations

Incident Subcategory	County	FEMA Declaration String	Calendar Year of Declaration	Date Month	Declaration Date	Declaration Title	State
Flood	Los Angeles County	DR-253-CA	1969	January	1/26/1969	SEVERE STORMS & FLOODING	CA
Flood	Los Angeles County	DR-595-CA	1979	August	8/24/1979	SEVERE STORMS, FLOODING, AND MUDSLIDES	CA
Flood	Los Angeles County	DR-979-CA	1993	February	2/3/1993	SEVERE WINTER STORM, MUD & LAND SLIDES, & FLOODING	CA
Flood	Los Angeles County	DR-1046-CA	1995	March	3/12/1995	SEVERE WINTER STORMS, FLOODING, LANDSLIDES, MUD FLOW	CA
Flood	Los Angeles County	DR-1203-CA	1998	February	2/9/1998	SEVERE WINTER STORMS AND FLOODING	CA
Flood	Los Angeles County	DR-1577-CA	2005	February	2/4/2005	SEVERE STORMS, FLOODING, DEBRIS	CA

Incident Subcategory	County	FEMA Declaration String	Calendar Year of Declaration	Date Month	Declaration Date	Declaration Title	State
						FLOWS, AND MUDSLIDES	
Flood	Los Angeles County	DR-1585-CA	2005	April	4/14/2005	SEVERE STORMS, FLOODING, LANDSLIDES, AND MUD AND DEBRIS FLOWS	CA
Flood	Los Angeles County	DR-1884-CA	2010	March	3/8/2010	SEVERE WINTER STORMS, FLOODING, AND DEBRIS AND MUD	CA
Flood	Los Angeles County	DR-4305-CA	2017	March	3/16/2017	SEVERE WINTER STORMS, FLOODING, AND MUDSLIDES	CA
Flood	Los Angeles County	DR-4482-CA	2020	March	3/22/2020	SEVERE STORMS, FLOODING, MUDSLIDES, AND LANDSLIDES	CA
Flood	Los Angeles County	DR-4683-CA	2023	March	3/10/2023	SEVERE WINTER STORMS, FLOODING, LANDSLIDES, AND MUDSLIDES	CA
Flood	Los Angeles County	DR-4777-CA	2024	February	2/18/2024	SEVERE STORMS AND FLOODING	CA

Flood-related declared disasters in Los Angeles County, 1953-2024. Source: FEMA

California Governor-declared Declarations

Date of Disaster	Type of Disaster	Counties Involved
Multiple events since 1991	Storms / Flooding	Los Angeles (various statewide declarations include the county)

List of Governor-declared disasters for property tax purposes since 1991. Source: California State Board of Equalization

While Santa Clarita is not uniformly classified as a high-risk flood zone under FEMA's Flood Insurance Rate Maps (FIRMs), the City has been included in several federally declared disasters related to severe storms, flooding, post-wildfire debris flows, and stormwater infrastructure impacts. These events have triggered access to federal recovery resources under the Stafford Act, supporting storm response, infrastructure repair, and resilience investments.

- **FEMA DR-4305 (March 2017 – Severe Winter Storms, Flooding, and Mudslides):** This disaster declaration covered widespread damages across Los Angeles County, including Santa Clarita. Heavy rainfall produced roadway flooding on Soledad Canyon Road and Sierra Highway, drainage system overflow in Canyon Country, and localized mud and debris movement near burn-scarred slopes in Placerita Canyon and Sand Canyon.
- **FEMA DR-4434 (February 2019 – Valentine's Day Flooding):** Heavy rainfall associated with this storm impacted northern Los Angeles County, contributing to debris-laden runoff in Santa Clarita's canyon areas and temporary closures on local roads such as Sand Canyon Road and Placerita Canyon Road.
- **FEMA DR-4683 (January 2023 – Atmospheric River Storms):** This declaration followed a series of powerful atmospheric rivers that brought widespread flooding to Los Angeles County. In Santa Clarita, impacts included ponding on major arterials, localized mudflows in Canyon Country, and significant runoff accumulation within the Santa Clara River channel.
- **FEMA DR-4699 (March 2023 – Additional Atmospheric River Flooding):** A follow-up declaration issued after consecutive storms in March 2023 resulted in further flooding, mudslides, and drainage impacts across Los Angeles County, including Santa Clarita. Several hillside neighborhoods experienced debris flow risks amplified by previous wildfire burn scars.

3.3.7.5 Probability and Effects of Future Conditions

Overall probability over next five years: ***Unlikely.***

Severe flooding events in Santa Clarita are projected to increase in frequency and intensity due to climate change and continued urban development. Historical flood data, climate modeling, and stormwater infrastructure analysis indicate that short-duration, high-intensity rainfall events are becoming more frequent across Los Angeles County, potentially exceeding the capacity of existing drainage systems. Studies suggest that extreme precipitation events in Southern California will continue intensifying, leading to heightened risks of urban flooding, post-wildfire debris flows, and stormwater system overload in canyon and foothill communities such as Santa Clarita.

Santa Clarita experiences flood risks primarily from stormwater runoff, drainage channel overflow, and post-wildfire debris flow, particularly in canyons feeding into the Santa Clara River. The river drains a vast watershed of approximately 1,600 square miles, and during major storm events it can carry flows exceeding 40,000–60,000 cubic feet per second (cfs) through the Santa Clarita Valley. Standard hydrologic modeling for the upper Santa Clara River indicates that a 100-year flood event could generate flows approaching 70,000 cfs at certain gauging points, while rare 500-year events could produce higher peak volumes and trigger significant overbank flooding along low-lying segments.

Future Rainfall and Urban Flooding Risks: By 2050, climate models predict an increase in the intensity of atmospheric river storms affecting Los Angeles County, resulting in longer periods of stormwater system overload and surface flooding. Watershed and storm drain exceedance models indicate that a 10-year return-period storm could overwhelm existing drainage infrastructure in key areas of Santa Clarita, particularly in Canyon Country, Saugus, and Newhall, where rapid runoff from surrounding hillsides converges onto arterial roadways. Intersections with historical drainage challenges – such as Soledad Canyon Road, Sierra Highway, Sand Canyon Road, and Bouquet Canyon Road – are expected to experience increased stormwater accumulation and more frequent debris flow impacts following major wildfires. Pavement drainage analysis suggests that critical intersections and low-lying streets will likely see higher flood depths during extreme precipitation events, leading to road closures, vehicle stall-outs, mud and debris deposition, and emergency response delays. By 2070, extreme precipitation events exceeding historical norms may become twice as frequent, increasing the probability of storm drain failures, debris-laden runoff, and localized ponding in both residential and commercial districts.

Development and Impervious Surface Impacts: Continued residential, commercial, and industrial development in Santa Clarita will increase impervious surface coverage, reducing natural water absorption and increasing stormwater runoff. Currently, a significant portion of developed land in Santa Clarita consists of impervious surfaces – including arterials, parking lots, and large commercial centers – contributing to elevated flood risks. Without enhanced stormwater management measures, future development may further exacerbate these challenges. New projects in high-risk areas, particularly near canyons or within zones subject to post-wildfire runoff, will require mitigation strategies such as retention basins, debris basins, bioswales, permeable pavement systems, and expanded storm drain conveyance capacity.

Storm Drain System Overload and Infrastructure Adaptation Needs: Existing storm drain infrastructure in Santa Clarita is designed based on historical rainfall data, but climate change projections indicate that future storm events will more frequently exceed system capacity. Areas around Sand Canyon, Placerita Canyon, Soledad Canyon, and Valencia Boulevard near McBean Parkway have been identified as having elevated stormwater accumulation or debris flow risks, especially following major wildfires such as the 2016 Sand Fire and 2019 Tick Fire. Additionally, storm drain outfalls near the Santa Clara River may experience temporary backups during heavy precipitation events, further increasing localized flooding risks. By 2050, the probability of storm drain backups causing localized flooding is expected to increase significantly. Infrastructure adaptation measures – including expanded stormwater capacity, enhanced sediment and debris management, green infrastructure solutions, and increased maintenance of existing drainage systems – will be necessary to mitigate future flood risks.

Projected Economic and Infrastructure Impacts: Economic damages from flooding in Santa Clarita are expected to rise by 2050 due to the increasing frequency of severe storm events and continued development in canyon-adjacent areas. Roadway repair costs related to flood damage, particularly along major corridors such as Soledad Canyon Road, Sierra Highway, McBean Parkway, and Valencia Boulevard, could increase as recurring storm events degrade pavement conditions and drainage systems. Flood-related business disruptions – especially in commercial centers near the Santa Clara River and canyon mouths – may also escalate, contributing to increased economic losses and greater strain on emergency response and public works operations.

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3.3.8 Drought

3.3.8.1 Description

Drought is a prolonged period of below-average precipitation resulting in water shortages that impact people, agriculture, ecosystems, and industries. Unlike other natural hazards, droughts develop gradually and can persist for months or even years. Drought severity is often exacerbated by high temperatures, low humidity, and increased evaporation rates, further straining natural and human systems.

According to the National Weather Service (NWS), drought is defined as a deficiency of moisture severe enough to adversely affect people, animals, or vegetation over a sizable area. The U.S. Drought Monitor classifies drought conditions on a scale from "Abnormally Dry (D0)" to "Exceptional Drought (D4)," based on multiple indicators such as precipitation deficits, soil moisture levels, and reservoir storage.

Droughts are categorized into five primary types based on their causes and impacts:

Meteorological Drought: Occurs when precipitation levels fall significantly below the historical average for an extended period. In Southern California, including Santa Clarita, precipitation is highly variable from year to year, influenced by large-scale climate patterns such as La Niña and El Niño. The El Niño–Southern Oscillation (ENSO) cycle plays a crucial role in regional precipitation variability, with La Niña phases typically associated with drier winters across Los Angeles County. Santa Clarita receives an average of 15–18 inches of rainfall per year, but during severe drought periods annual totals have dropped below 6 inches, contributing to significant water deficits.

Agricultural Drought: Results from insufficient soil moisture to sustain healthy crop and pasture growth. While Santa Clarita is not a major agricultural production area, agricultural drought affects the broader Los Angeles region's reliance on imported food and contributes to higher water demands for landscaping, recreation areas, and local equestrian facilities. Prolonged droughts increase irrigation needs for parks, open spaces, and the extensive urban forest canopy, leading to elevated municipal water use and dry vegetation that heightens wildfire risk.

Hydrological Drought: Occurs when surface and groundwater supplies decline due to extended precipitation deficits, leading to reduced river flows, depleted reservoirs, and dropping groundwater tables. Santa Clarita relies on a combination of State Water Project (SWP) imports, groundwater from the Santa Clara River Valley East Subbasin, and recycled water supplies. Reduced Sierra Nevada snowpack – declining by approximately 20% over the past four decades

– and earlier snowmelt significantly limit SWP allocations during drought years. Groundwater levels in Santa Clarita's basin have historically fluctuated, with notable declines during the 2012–2016 and 2020–2022 droughts due to increased pumping and reduced natural recharge.

Socioeconomic Drought: Happens when water shortages disrupt economic activities, public infrastructure, and daily life. Drought conditions often result in stricter water use regulations, increased utility costs, and impacts on recreation areas such as the Santa Clara River, local lakes, and regional parks. The Santa Clarita Valley Water Agency (SCVWA) implements water conservation mandates during drought emergencies, including limits on outdoor irrigation and commercial water use[12]. Extended droughts also elevate wildfire risk across the wildland–urban interface – particularly in canyon communities such as Sand Canyon, Placerita Canyon, Bouquet Canyon, and Mint Canyon – leading to increased emergency response costs and insurance burdens.

Ecological Drought: Disrupts natural ecosystems by affecting wildlife, aquatic habitats, and vegetation. Reduced stream flows in the Santa Clara River – Southern California's last mostly free-flowing river – stress sensitive species such as the arroyo toad, unarmored threespine stickleback, and native riparian vegetation. Prolonged droughts contribute to tree mortality in oak woodlands and chaparral communities surrounding Santa Clarita, increasing susceptibility to pests including bark beetle infestations. Lower moisture content in vegetation also accelerates the transition from ecological drought to severe wildfire conditions, further impacting local habitats.

3.3.8.2 Location and Extent

Drought is a citywide hazard in Santa Clarita. Unlike hazards that are confined to a floodplain, fault zone, or fire perimeter, drought affects the entire planning area because all residents, businesses, public facilities, parks, landscapes, natural areas, and emergency services depend on reliable water supplies. Drought conditions may originate outside the City, particularly in the Sierra Nevada and Sacramento–San Joaquin Delta watersheds that support State Water Project deliveries, but their impacts are felt locally through reduced imported water allocations, increased groundwater reliance, outdoor watering restrictions, stressed vegetation, and heightened wildfire risk.

Residential neighborhoods with irrigated landscaping, parks and recreational facilities, landscaped medians, schools, commercial centers, and industrial areas may experience direct impacts from water-use restrictions and higher water costs. Areas with extensive turf, ornamental

[12] Santa Clarita Valley Water Agency. (2021). *2020 Urban Water Management Plan*. Santa Clarita Valley Water Agency. https://yourscvwater.com/sites/default/files/SCVWA/SCVWA-2020-UWMP-Volume-I_FINAL.pdf

landscaping, or mature tree canopy may face increased maintenance challenges during prolonged dry periods, including landscape die-off, tree stress, and reduced shade. These impacts can be especially visible in public spaces, homeowners' association landscapes, and older residential areas where landscaping may not have been designed for prolonged drought conditions.

Drought also affects the City's natural and open space areas. The Santa Clara River corridor, canyon drainages, riparian habitat, oak woodlands, chaparral, and hillside open spaces are vulnerable to reduced soil moisture, lower streamflow, vegetation stress, and habitat degradation during extended dry periods. These conditions can increase plant mortality, reduce habitat quality for sensitive species, and contribute to the accumulation of dry fuels. As a result, drought conditions can intensify wildfire risk across the wildland–urban interface, particularly in and near canyon and hillside communities.

The extent of drought in Santa Clarita can range from short-term dry conditions to multi-year extreme drought affecting regional water supply reliability. At the lower end of the scale, abnormally dry or moderate drought conditions may result in voluntary conservation measures, reduced soil moisture, and increased fire weather concerns. Severe to extreme drought can lead to mandatory outdoor watering limits, reduced imported water deliveries, increased groundwater pumping, stressed public landscapes, declining vegetation health, and elevated wildfire danger. Exceptional drought conditions may produce widespread water supply shortages, significant ecological stress, major landscape losses, and broader economic and operational impacts.

Because Santa Clarita relies on a combination of imported water, groundwater, recycled water, and conservation, the geographic extent of drought impacts depends not only on local precipitation but also on statewide hydrologic conditions. Reduced Sierra Nevada snowpack, low reservoir storage, and prolonged regional dry periods can limit imported supplies even when local conditions appear less severe. Conversely, local drought impacts may persist after a wet year if groundwater recharge, reservoir recovery, or imported supply allocations remain constrained.

3.3.8.3 Magnitude and Severity

Unlike sudden-onset hazards such as earthquakes or hurricanes, drought is a slow-developing phenomenon lacking a universally accepted severity scale. Instead, its magnitude and severity are evaluated using multiple indices that consider precipitation deficits, soil moisture levels, streamflow reductions, and socio-economic impacts.

Palmer Drought Severity Index (PDSI): The PDSI is a widely utilized metric that assesses long-term drought conditions by analyzing precipitation, temperature, and soil moisture data. It classifies drought severity on a scale from +4.0 (extremely wet) to –4.0 (extreme drought). This index is particularly pertinent to Southern California, where prolonged precipitation deficits, high heat, and rising evaporation rates contribute to persistent drought conditions. Santa Clarita's semi-arid climate and its dependence on imported water supplies and local groundwater make the PDSI a relevant indicator of regional drought severity.

Category	Description	Example Percentile Range for Most Indicators	Values for Standard Precipitation Index and Standardized Precipitation-Evapotranspiration Index
None	Normal or wet conditions	31 or above	-0.49 or above
D0	Abnormally Dry	21 to 30	-0.5 to -0.79
D1	Moderate Drought	11 to 20.99	-0.8 to -1.29
D2	Severe Drought	6 to 10.99	-1.3 to -1.59
D3	Extreme Drought	3 to 5.99	-1.6 to -1.99
D4	Exceptional Drought	0 to 2.99	-2.0 or less

US Drought Monitor Classification Scheme.
Source: https://droughtmonitor.unl.edu/About/AbouttheData/DroughtClassification

U.S. Drought Monitor Classification: The U.S. Drought Monitor categorizes drought severity into five levels, serving as a critical tool for emergency declarations, water conservation measures, and agricultural impact assessments:

- **D0 (Abnormally Dry):** Short-term dryness, slower crop growth, and increased fire risk.
- **D1 (Moderate Drought):** Some damage to crops, voluntary water restrictions implemented.
- **D2 (Severe Drought):** Likely crop losses, water shortages, and mandatory restrictions.
- **D3 (Extreme Drought):** Major crop losses, widespread water shortages, and heightened fire risk.
- **D4 (Exceptional Drought):** Widespread water emergencies, ecosystem degradation, and significant economic losses.

Standardized Precipitation Index (SPI): The SPI measures drought intensity over various timescales – from 1 month to multiple years – by quantifying deviations in precipitation from historical averages. This index is used by the California Department of Water Resources (DWR) and the National Oceanic and Atmospheric Administration (NOAA) to assess seasonal drought risks in Southern California. For Santa Clarita, SPI values are strongly influenced by highly variable winter rainfall, which averages 15–18 inches per year but can fall below 6 inches in drought years.

California Snow Water Equivalent (SWE) Index: A significant portion of Southern California's water supply depends on the Sierra Nevada snowpack. The SWE Index measures the amount of water stored in the snowpack; lower SWE levels indicate reduced runoff and heightened drought risk. Scientific projections indicate that by 2050, average SWE across the Sierra Nevada could decline by 40–65%, significantly reducing State Water Project deliveries that supply the Santa Clarita Valley.

Water Supply Vulnerabilities: Drought-prone areas within Santa Clarita are not defined by physical geography but rather by their dependence on vulnerable water sources. The community's primary drought-related challenges stem from three key supply systems:

- **Groundwater Basins:** Santa Clarita relies on the Santa Clara River Valley East Subbasin, which is managed under the Sustainable Groundwater Management Act (SGMA). Groundwater levels in the basin fluctuate with prolonged drought cycles and increased pumping demand. During the 2012–2016 drought, groundwater levels dropped significantly, prompting increased reliance on imported water. SGMA reports show that the East Subbasin stores an estimated 5–7 million acre-feet of groundwater, though only a portion is considered practically extractable. Recovery periods have followed major wet seasons, but long-term drought sensitivity remains high due to variable recharge in the Santa Clara River watershed.
- **Imported Water Supplies:** Santa Clarita receives more than half of its potable supply from imported water delivered by the State Water Project (SWP). SWP allocations have averaged 45–50% of contracted amounts since 2000, with allocations dropping to 5% in 2014 and 5% again in 2022 during extreme drought years. Reduced Sierra Nevada snowpack and regulatory restrictions to protect endangered species in the Sacramento–San Joaquin Delta contribute to long-term supply uncertainty. These fluctuations significantly influence Santa Clarita's drought severity and the frequency of mandatory conservation measures.
- **Surface Water Bodies:** While Santa Clarita lacks major reservoirs within City limits, it depends heavily on regional storage systems, including Castaic Lake, which serves as a critical SWP reservoir. Castaic Lake water levels dropped to near historic lows during the 2014–2016 drought, falling below 40% capacity, which triggered multiple rounds of mandatory water restrictions. Surface water reliability also depends on releases into the Santa Clara River and on groundwater recharge conditions, both of which are affected by prolonged drought and extreme heat.

Urban Development and Land Use Impacts on Drought Resilience: Urban development and land use patterns in Santa Clarita influence the City's vulnerability and resilience to drought. Several key sectors are particularly impacted:

- **Residential Areas:** Many residential neighborhoods in Santa Clarita rely heavily on outdoor irrigation for landscaping – including large turf areas common in suburban developments. Landscaping frequently comprises more than 50% of household water use, making it a primary target for mandatory water reductions during drought emergencies. Drought conditions can result in substantial limits on irrigation times and days, and prolonged water restrictions may contribute to landscape die-off and increased wildfire risk.
- **Commercial and Industrial Sectors:** Santa Clarita's expanding commercial centers – such as the Valencia Industrial Center and the Centre Pointe Business Park – depend on stable water supplies for cooling systems, manufacturing processes, and equipment operation. Water shortages may lead to increased operational costs and reduced efficiency for water-intensive businesses. As development continues across the Valencia and Canyon Country areas, cumulative demand will place additional stress on constrained water supplies during future drought cycles.
- **Parks and Green Spaces:** The City maintains more than 35 public parks and extensive recreational areas, including the Santa Clarita trail network and sports complexes that depend on irrigation. During severe drought, these facilities face increased water limitations, leading to stressed vegetation, reduced turf quality, and elevated temperatures due to loss of shade canopy. Tree mortality in open spaces and canyon areas also increases fuel loads that exacerbate wildfire hazards during extreme drought periods.

Changes in Land Use and Development: Land use and development patterns in Santa Clarita play a significant role in shaping the City's long-term drought vulnerability. As one of the fastest-growing communities in Los Angeles County – with a population increase from ≈176,000 in 2010 to more than 228,000 in 2024 – expanding residential, commercial, and industrial development has increased overall water demand. New master-planned communities in Valencia, Canyon Country, and Saugus incorporate modern water-efficient landscaping and building codes, but the cumulative effect of growth places sustained pressure on limited groundwater and imported water supplies during prolonged drought cycles. As housing density increases, especially in multi-family developments near transit-oriented districts, per-capita water use continues to decline; however, total system demand remains sensitive to regional drought conditions and SWP allocation reductions.

Commercial and industrial development in the Valencia Industrial Center, Rye Canyon, and Centre Pointe Business Park has expanded the City's economic base but also increased the demand for operational and cooling water in key industries, including manufacturing, biomedical facilities, data centers, and warehousing. Although many commercial developments include water-efficient systems, increased impervious surfaces associated with large commercial parking lots and industrial footprints reduce natural groundwater recharge, increasing dependence on imported water and engineered recharge programs. Redevelopment of older industrial sites presents opportunities to integrate modern water-saving technologies, but legacy infrastructure may still contribute to inefficient consumption patterns during drought periods.

Santa Clarita's significant investment in public parks, landscaped medians, and recreational facilities adds to overall irrigation demand, particularly during hot, dry years. While the City has implemented non-potable irrigation systems, drought-tolerant landscaping, and expanded recycled water use where feasible, limitations in the regional recycled water distribution network constrain the ability to offset potable irrigation demands Citywide. Future expansion of recycled water infrastructure, particularly in the Santa Clarita Valley Water Agency's (SCVWA) service area, will be critical to maintaining public green spaces under worsening drought conditions.

At the wildland–urban interface, development in hillside communities such as Fair Oaks Ranch, Sand Canyon, Plum Canyon, and areas bordering the Angeles National Forest increases drought-related wildfire risks due to stressed vegetation and reduced moisture levels. Prolonged drought accelerates fuel drying in surrounding chaparral ecosystems, raising ignition potential and intensifying fire behavior during Santa Ana wind events. As residential construction continues in or near these high-risk areas, land use planning and defensible space standards must increasingly account for the compounding effects of drought-driven vegetation mortality, heightened wildfire hazards, and the potential for extended water-use restrictions that limit irrigation available to maintain defensible landscapes.

3.3.8.4 Historical Occurrences of Drought

FEMA Disaster Declarations

Incident Subcategory	County	FEMA Declaration String	Calendar Year of Declaration	Date Month	Declaration Date	Declaration Title	State
None	None	None	None	None	None	None	None

California Governor-declared Declarations

Date of Disaster	Type of Disaster	Counties Involved
October 2021	Drought	All 58 counties (including Los Angeles County)

List of Governor-declared disasters for property tax purposes since 1991. Source: California State Board of Equalization

Drought is a recurrent hazard in California, and Santa Clarita has experienced multiple severe, statewide droughts in recent decades. These extended dry periods have strained the Santa Clarita Valley's water supplies, reduced allocations from the State Water Project (SWP), increased wildfire risk throughout the wildland–urban interface and led to mandatory conservation measures. Historical drought occurrences illustrate the increasing frequency and severity of drought episodes, intensified by climate change, rising temperatures, and continued regional population growth.

Between 2000 and 2023, the Santa Clarita Valley – served primarily by the Santa Clarita Valley Water Agency (SCVWA) – experienced drought conditions for over 75% of all weeks, according to U.S. Drought Monitor data for Los Angeles County. Approximately 16% of those weeks fell into the Extreme (D3) or Exceptional (D4) categories, representing severe impacts on imported water supplies, groundwater reliance, and wildfire conditions across the region.

- **2011–2017 California Drought:** The 2011–2017 drought was one of the most intense in California's recorded history. By 2014, most of Los Angeles County – including Santa Clarita – was under Severe Drought (D2) or worse. The drought caused significant reductions in SWP allocations (dropping to 5% of contracted amounts in 2014), straining Santa Clarita's water supply portfolio. In response, Governor Jerry Brown issued a statewide emergency declaration that required urban areas, including Santa Clarita, to reduce water consumption by at least 25%. SCVWA enacted mandatory outdoor irrigation limits, tiered water pricing, and conservation outreach. Conditions eased only after a series of major winter storms in 2017 temporarily boosted statewide reservoir storage.
- **2020–2022 Drought:** Another significant drought began in late 2020, and by mid-2022, 100% of Los Angeles County was classified in Extreme Drought (D3) or higher. Impacts included SWP allocations again dropping to 5% in 2022, historically low Colorado River Basin storage (a critical supplemental source for Southern California), and depleted local groundwater. Santa Clarita also experienced heightened wildfire danger as prolonged drought dried chaparral vegetation earlier in the fire season, contributing to more extreme fire behavior during Santa Ana wind events.

FEMA Disaster Declarations

Although droughts rarely trigger FEMA Major Disaster Declarations (DRs) on their own, the indirect impacts – particularly wildfire activity driven by prolonged drought – have led to several FEMA declarations affecting Los Angeles County and Santa Clarita:

- **FEMA DR-4329 (2017):** Southern California fires, linked to drought-stressed vegetation conditions.
- **FEMA DR-4558 (2020):** A response to intense wildfire activity exacerbated by the ongoing drought and extreme heat conditions.
- **FEMA DR-4699 (2023):** Although declared for winter storms, the preceding multi-year drought contributed to soil instability and watershed degradation, worsening post-storm flooding impacts in Los Angeles County.

State and federal drought emergency declarations were issued in 2014, 2015, 2021, and 2022, all of which included Los Angeles County and directly impacted Santa Clarita through water-use restrictions, reduced SWP deliveries, increased groundwater pumping, and heightened wildfire risk

3.3.8.5 Probability and Effects of Future Conditions

Overall probability over next five years: ***Likely.***

Drought conditions in Santa Clarita are anticipated to increase in frequency, duration, and severity due to climate change, rising temperatures, and shifting precipitation patterns. Climate models and historical data indicate that Los Angeles County and the Santa Clarita Valley will experience longer and more intense dry periods, punctuated by short, intense rainfall events. These changes are expected to lead to reduced water availability and inefficient groundwater recharge, compounding stress on the region's imported water supplies, local groundwater sources, and growing population.

More Frequent and Prolonged Droughts: Projections suggest that Santa Clarita and the broader Southern California region will experience increasing drought conditions nearly every decade – a significant shift from historical patterns in which major statewide droughts occurred approximately every 20 to 30 years. Rising temperatures will further exacerbate drought severity. By 2050, the Santa Clarita Valley is projected to experience a substantial increase in extreme heat days, with days above 100°F rising from an annual average of approximately 35 days to more than 60 days per year, according to Cal-Adapt climate projections. Higher temperatures will accelerate evaporation rates, reduce soil moisture, and increase water loss from reservoirs and local storage facilities, intensifying the severity and duration of drought events.

Declining Water Supplies and Increased Dependence on Imported Water: Santa Clarita relies on a combination of State Water Project (SWP) imports, local groundwater from the Santa Clara River Valley East Subbasin, recycled water, and water banking programs. SWP allocations have averaged around 45% of contracted amounts since 2000, with allocations dropping as low as 5%–10% during drought emergencies (2014, 2022). Groundwater production for the Santa Clarita Valley Water Agency (SCVWA) has ranged from approximately 25,000 to 35,000 acre-feet per year, depending on hydrologic conditions. Pumping restrictions, water quality treatment needs (e.g., PFAS treatment plants), and declining natural recharge during drought limit the system's reliability during extended dry periods. The Colorado River Basin, which indirectly supports Southern California through Metropolitan Water District supplies, has remained in persistent drought since 2000, with reservoirs such as Lake Mead and Lake Powell reaching historic lows, raising concerns about future regional import allocations during multi-year droughts.

Extreme Weather and Precipitation Variability ("Precipitation Whiplash"): Climate models indicate that Santa Clarita and Los Angeles County will experience more extreme transitions between drought and heavy rainfall, a phenomenon known as "precipitation whiplash." Prolonged dry periods will be interrupted by intense rainfall events, leading to rapid surface runoff, erosion in canyon drainage areas, and reduced natural groundwater recharge due to soil saturation limits and high-intensity storm sequences. Despite occasional major rainfall episodes, annual precipitation in Santa Clarita is expected to remain near its historical average of 15–18 inches per year, meaning that long-term water shortages will continue. The frequency of extreme atmospheric river storms – responsible for a large share of California's annual precipitation – is projected to increase by 20–30% by 2070, but these events will remain clustered in short bursts during winter months. As a result, they are less effective at restoring groundwater or sustaining long-term water storage, further underscoring the region's vulnerability to recurring drought conditions.

3.3.9 Hazardous Materials Release / Transportation Accidents

3.3.9.1 Description

Hazardous materials release and transportation-related accidents represent a significant and growing risk for Santa Clarita due to the City's strategic location along major freight, commuter rail, and roadway corridors. Santa Clarita is intersected by Interstate 5 (I-5) and State Route 14 (SR-14), two of the most heavily traveled goods-movement corridors in Southern California, with combined daily traffic volumes exceeding 250,000 vehicles, including a substantial proportion of heavy-duty trucks transporting hazardous cargo such as petroleum fuels, corrosive chemicals, industrial solvents, and pressurized gases. Accidents involving these materials can lead to spills, fires, explosions, roadway closures, and the need for large-scale evacuations, particularly in developed areas adjacent to the freeway system.

The City is also traversed by the Metrolink Antelope Valley Line and the Union Pacific (UP) Saugus Line, which together support daily freight and passenger operations. Metrolink runs over 20 trains per weekday, while freight traffic varies but includes routine transport of hazardous materials. Rail corridors run through or near densely populated neighborhoods in Newhall, Saugus, Canyon Country, and Via Princessa, raising the potential for widespread public safety impacts in the event of a derailment or chemical release. Although derailments are infrequent in Los Angeles County, national data indicate that 14% of rail accidents involving hazmat shipments result in spills, underscoring the importance of planning for low-frequency, high-impact rail incidents.

Beyond road and rail hazards, Santa Clarita is located beneath multiple general aviation flight paths connected to Van Nuys Airport, Whiteman Airport, and overflow routing for Los Angeles International Airport (LAX). Van Nuys Airport alone conducts over 300,000 flight operations annually, one of the highest totals for any general aviation airport in the United States. Aircraft accidents, midair emergencies, or fuel spills – though rare – can pose significant risks to residential neighborhoods and critical infrastructure, particularly during wildfire smoke events or severe weather that creates hazardous operating conditions. Santa Clarita has experienced several aviation-related emergency landings and small aircraft incidents in surrounding hillsides over the past two decades, highlighting the relevance of this risk.

Hazardous materials releases also originate from fixed facilities in Santa Clarita that store or utilize regulated chemicals. The City contains more than 150 CalEPA-registered hazardous materials users, including industrial manufacturers, waste management facilities, fuel storage sites, medical and biotechnology facilities, automotive service centers, and large commercial operations. Sites operating under the California Accidental Release Prevention (CalARP) Program maintain regulated quantities of substances such as anhydrous ammonia, chlorine, and flammable gases. Though facility-level accidents are uncommon, past regional incidents – including explosions at industrial plants elsewhere in Los Angeles County – demonstrate the potential for chemical releases, fire, or airborne toxic exposure affecting employees, adjacent businesses, and nearby residential areas.

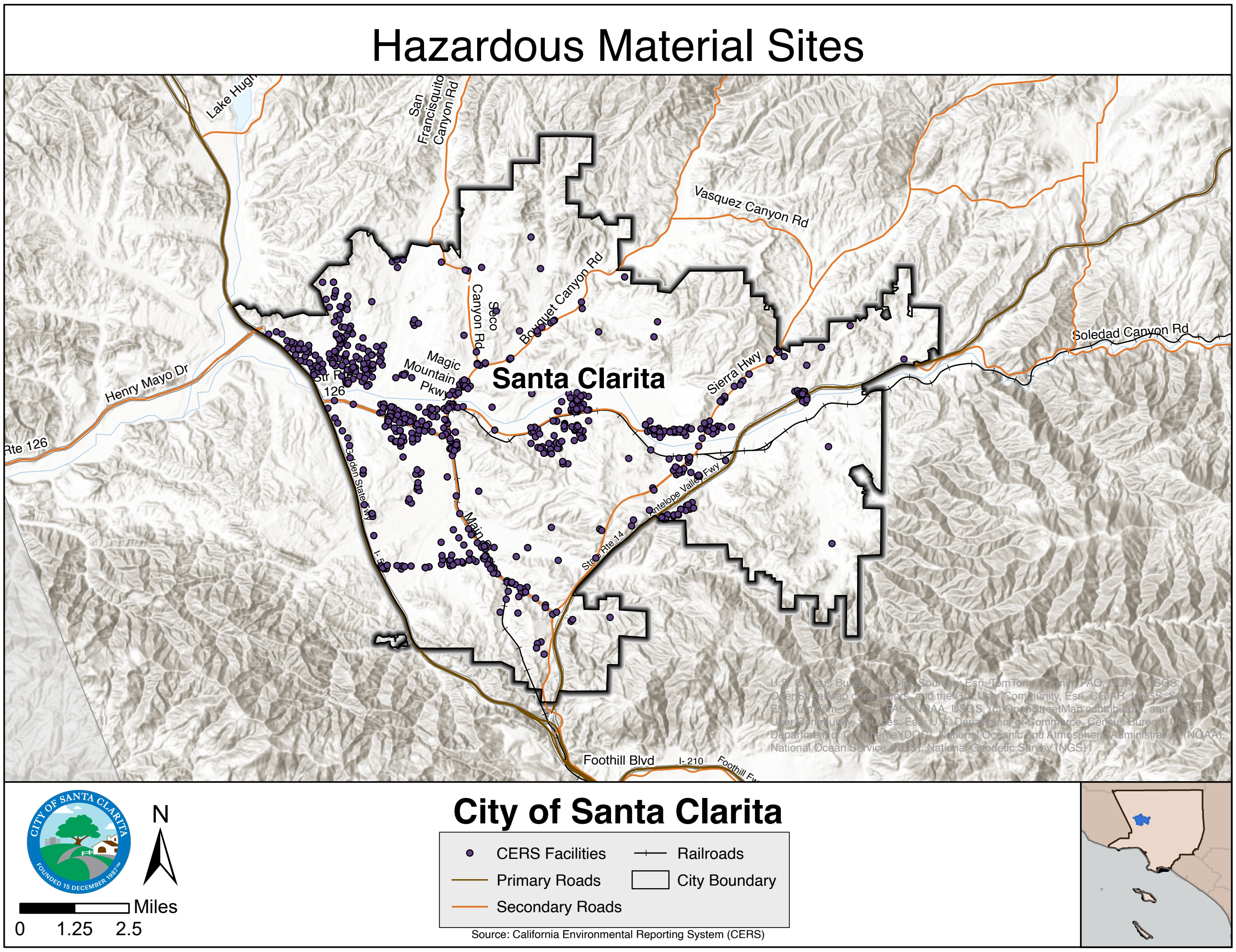
Transportation-related disruptions and hazardous materials incidents pose particular challenges for Santa Clarita's emergency response, evacuation planning, and continuity of operations. Neighborhoods with limited ingress and egress – such as Placerita Canyon, Fair Oaks Ranch, Stevenson Ranch, and parts of Saugus – may become isolated during freeway closures or a rail-related hazardous materials spill, delaying response times and hindering evacuation efforts. The region's topography, with steep canyons and narrow corridors, can amplify impacts by limiting detour capacity when major routes are blocked.

Future development, including expansions to I-5 under the North County Enhancements Project, proposed Metrolink signal modernization, and continued residential growth in northern and eastern Santa Clarita, will increase transportation usage and may elevate exposure to hazardous materials risks unless paired with mitigation planning. Incidents affecting any portion of Santa Clarita's multimodal system – roadways, rail lines, or airspace – have the potential to produce cascading impacts on mobility, public safety, goods movement, and regional economic stability, reinforcing the need for interagency coordination, advanced monitoring, and resilient transportation and emergency response systems.

3.3.9.2 Location and Extent

Hazardous materials release and transportation-related accidents in Santa Clarita occur primarily along the City's major transportation corridors and near industrial or commercial areas where regulated chemicals are stored or handled. The City's geography – characterized by steep canyon systems, river-adjacent development, and limited transportation redundancy – intensifies vulnerability along the I-5 corridor, SR-14, and the Metrolink/Union Pacific rail lines. These critical routes intersect near densely populated neighborhoods such as Newhall, Valencia, and Canyon Country, creating areas of elevated risk where large vehicle volumes and hazardous cargo shipments converge.

The Interstate 5 corridor, which carries more than 175,000 vehicles per day, including 15–20% heavy-duty truck traffic, is the most significant corridor for hazardous materials transport. The freeway passes directly adjacent to residential and commercial areas, including Valencia Town



Center, the Old Road corridor, and Six Flags Magic Mountain, meaning a spill or fire involving hazardous cargo could affect thousands of people within minutes. Likewise, SR-14, with daily traffic of more than 75,000 vehicles, runs through canyon terrain with steep embankments that complicate spill containment and emergency response. Segments such as the Newhall Pass Interchange – a known bottleneck and site of previous large-scale transportation accidents – represent high-risk locations due to complex merging patterns and limited emergency access routes.

Rail risks are concentrated along the Metrolink Antelope Valley Line and the Union Pacific Saugus Line, which run through Newhall and alongside the Santa Clara River. These railways are used for both passenger service and hazardous material freight transport. The proximity of the corridors to the Santa Clara River watershed, a sensitive environmental resource and wildlife corridor, creates the potential for significant ecological impacts if a derailment or chemical spill were to reach the riverbed. Rail-adjacent neighborhoods such as Railroad Avenue, Lyons Avenue, Vista Canyon, and Soledad Canyon Road are within the primary impact zones for a release involving airborne toxic substances or flammable materials.

Fixed-facility hazardous materials risks are distributed across Santa Clarita's industrial and commercial zones. More than 150 facilities registered under CalEPA's Hazardous Materials Business Plan program are located in business parks such as the Valencia Industrial Center, Rye Canyon, Centre Pointe Business Park, and Golden Valley. Several facilities fall under the California Accidental Release Prevention (CalARP) Program, indicating regulated quantities of higher-risk chemicals such as ammonia, chlorine, or large volumes of flammable substances. These industrial zones are often near major transportation corridors, meaning a single incident may involve both stationary and mobile hazards simultaneously.

Relationship to Land Use and Development: Land use patterns in Santa Clarita significantly influence the scale and distribution of hazardous materials release risks. The City's master-planned growth has concentrated industrial and commercial development in clusters along I-5, SR-14, and key arterials such as Bouquet Canyon Road, Golden Valley Road, and Rye Canyon Road. These areas contain many of the City's highest-risk hazardous materials facilities as well as heavy truck usage, increasing the likelihood that an industrial incident or transportation accident could occur close to densely developed commercial and residential areas.

Residential expansion into canyon and hillside communities – including Fair Oaks Ranch, Plum Canyon, Aliento, Tesoro del Valle, and Stevenson Ranch – has created neighborhoods that depend heavily on a limited number of arterial access points. In the event of a hazardous materials spill, freeway closure, rail accident, or truck rollover involving flammable or toxic substances, these areas may experience delayed evacuations or restricted emergency access. The presence of schools, senior facilities, and high-density housing near several major transportation routes further concentrates vulnerability.

Santa Clarita's ongoing development in areas such as Vista Canyon, Needham Ranch, and the River District places new residential and commercial construction in closer proximity to the rail corridor and major arterials. As these projects expand, increased traffic volumes, greater goods-movement activity, and more mixed-use development near transit hubs may heighten the potential consequences of hazardous materials incidents without accompanying mitigation measures. Additionally, future industrial growth in Valencia and Rye Canyon – particularly in sectors such as manufacturing, biotechnology, distribution, and e-commerce logistics – will increase on-site storage and movement of hazardous materials through the community.

The City's location along the Santa Clara River also intersects with hazardous materials concerns. Industrial zones, rail facilities, and major transportation corridors situated near the river can create environmental risks if spills enter the floodplain or infiltrate groundwater systems. As climate change increases the likelihood of extreme rainfall events, the potential for hazardous materials to migrate from impacted sites into natural drainage or the river system may rise, requiring updated land use considerations, enhanced containment requirements, and improved emergency response planning.

3.3.9.3 Magnitude and Severity

The magnitude and severity of hazardous materials releases and transportation-related accidents in Santa Clarita are influenced by the volume of hazardous materials transported through the City, the density of development near major transportation corridors, and the presence of industrial facilities storing regulated chemicals. Severity is measured by the type of material released, quantity, release mechanism, proximity to sensitive receptors, and the potential for cascading impacts such as fire, explosion, or contamination of the Santa Clara River. Incidents may range from minor spills requiring localized cleanup to major events capable of triggering large-scale evacuations, transportation shutdowns, environmental damage, and long-term public health impacts.

Transportation Corridor Vulnerability: Interstate 5 and State Route 14 are among the highest-risk corridors in the region due to high traffic volumes and heavy truck activity. I-5 carries more than 175,000 vehicles per day, including 20,000–30,000 heavy trucks, many of which transport flammable liquids, corrosives, or pressurized gases. A tanker truck rollover, fuel spill, or collision involving hazardous cargo could generate immediate fire or explosion hazards with thermal impacts extending hundreds of feet from the incident site. At the Newhall Pass Interchange, where I-5 and SR-14 converge, multi-vehicle collisions occur more frequently due to complex geometry and steep grade transitions, increasing the severity potential for hazardous materials releases. Past fires in the pass have created hazardous air quality conditions extending over multiple jurisdictions, underscoring the corridor's potential for multi-county impacts.

Rail-Related Incident Severity: The Metrolink Antelope Valley Line and Union Pacific Saugus Line transport hazardous materials, including ethanol, petroleum distillates, industrial chemicals, and pressurized gases. A derailment involving tank cars can create severe risks, including large-scale flammable vapor cloud explosions or toxic releases. The proximity of the tracks to residential neighborhoods in Newhall and Canyon Country, as well as to the Santa Clara River floodplain, increases severity because a release could affect populated areas and sensitive habitats simultaneously. A single ruptured tank car can contain 20,000 to 30,000 gallons of hazardous material, and a multi-car derailment could require mass evacuation zones extending a quarter mile to over a mile depending on chemical type and wind conditions.

Fixed Facility Hazard Severity: Santa Clarita contains more than 150 Hazardous Materials Business Plan (HMBP) facilities and several regulated under the CalARP program due to their storage of acutely hazardous materials. These include facilities storing ammonia-based refrigerants, chlorine compounds, large volumes of flammable liquids, and industrial solvents. A release at a CalARP facility could produce high-concentration toxic plumes or significant fire loads. For example, a major ammonia release can create a toxic inhalation hazard capable of causing health impacts within minutes, with plume travel distances extending several thousand feet depending on atmospheric stability and wind conditions. Facilities near commercial centers, schools, or transportation corridors create the highest severity potential due to population density and limited evacuation routes.

Environmental and Public Health Impacts: The Santa Clara River, one of the last free-flowing river systems in Southern California, represents a significant environmental receptor. A hazardous materials release entering the river could affect endangered species habitat, groundwater recharge zones, and downstream communities. Severe incidents have the potential to cause long-term ecological damage and require extensive remediation. Airborne releases – such as smoke, particulate matter from chemical fires, or toxic vapor clouds – may elevate AQI levels to “Unhealthy” (151–200) or “Very Unhealthy” (201–300), particularly in canyon areas where atmospheric inversion layers trap pollutants. Sensitive populations – including children, seniors, and individuals with respiratory conditions – are especially susceptible to health impacts during such events.

Severity Classification:

- **Minor Incidents** typically involve small spills (less than 50 gallons), localized fuel leaks, or non-hazardous releases at industrial sites. These events generally result in short-term lane closures or minimal shelter-in-place measures.
- **Moderate Incidents** may include tanker truck fires, spills exceeding 100 gallons, rail car mechanical failures releasing limited quantities of hazardous material, or chemical releases requiring temporary evacuations. Impacts may involve multi-hour highway closures, localized evacuations within a few blocks, or moderate air quality effects.
- **Major Incidents** involve large-scale spills, multi-car rail derailments, hazardous vapor cloud releases, or industrial site explosions. These events can necessitate evacuations of 500–5,000+ residents, full freeway closures for extended periods, long-term environmental remediation, and regional air quality impacts.

- **Catastrophic Incidents**, though rare, could include mass-casualty rail derailments involving multiple tank cars, flammable vapor cloud explosions in the Newhall Pass, or a CalARP facility release causing long-duration toxic exposure. Cascading impacts could include wildfires, river contamination, multi-day freeway closures, or disruption of regional supply chains.

3.3.9.4 Historical Occurrences

FEMA Disaster Declarations

Incident Subcategory	County	FEMA Declaration String	Calendar Year of Declaration	Date Month	Declaration Date	Declaration Title	State
None	None	None	None	None	None	None	None

California Governor-declared Declarations

Date of Disaster	Type of Disaster	Counties Involved
None	None	None

List of Governor-declared disasters for property tax purposes since 1991. Source: California State Board of Equalization

Hazardous materials releases and transportation-related accidents have occurred periodically in Santa Clarita, largely associated with major transportation corridors such as Interstate 5, State Route 14, and the Metrolink/Union Pacific rail lines. While catastrophic incidents are rare, several events over the past three decades demonstrate the City's exposure to fuel spills, chemical releases, transportation crashes involving hazardous cargo, and fires with air quality impacts. These occurrences highlight the potential for disruptions to mobility, environmental contamination, and long-term public health effects.

One of the most significant historical hazardous materials incidents affecting Santa Clarita was the 2007 Metrolink Chatsworth collision, which occurred just south of the City limits but produced regional transportation impacts that extended into Santa Clarita. The crash involved a Metrolink passenger train and a Union Pacific freight train carrying mixed cargo, including hazardous materials. While no hazardous materials were released, the incident caused major regional rail shutdowns affecting Santa Clarita’s commuters for multiple days and demonstrated the severity potential of hazardous cargo derailments along the corridor serving the City.

In 2013, a tanker truck crash on Interstate 5 near Rye Canyon Road resulted in a spill of more than 2,000 gallons of diesel fuel, requiring multi-hour full freeway closures and large-scale hazardous materials cleanup operations. The spill infiltrated storm drains, prompting environmental monitoring along tributaries feeding the Santa Clara River. The incident caused hours-long delays for thousands of motorists and highlighted the vulnerability of the I-5 corridor to major hazmat-related transportation disruptions.

A major regional incident with direct air quality impacts occurred during the 2016 Calgrove Fire, which ignited near the I-5/Calgrove Boulevard interchange. While the fire itself was not a hazardous materials release, burning vehicles, roadside equipment, tires, and petroleum-based materials created thick smoke and hazardous particulates. Air quality in Santa Clarita reached AQI levels above 200 ("Very Unhealthy"), and the freeway shutdown stranded thousands of motorists. The event underscored the potential for fire-related hazardous air pollutants to accompany transportation corridor incidents.

Another severe incident occurred in 2019, when a tanker truck overturned on SR-14 near Sand Canyon Road, spilling several hundred gallons of flammable fuel and prompting a large-scale hazmat response. The crash forced the closure of all southbound lanes for several hours and required foam suppression operations due to ignition risk. Nearby residential neighborhoods experienced shelter-in-place advisories due to concerns over vapor migration and potential ignition.

In 2022, a freight train mechanical failure on the Union Pacific Saugus Line resulted in a minor release of lubricating oil and a small brush fire near the tracks in Canyon Country. Although the spill volume was limited, the incident highlighted the proximity of rail corridors to residential areas and environmentally sensitive portions of the Santa Clara River corridor. Cleanup took several hours, and Metrolink service experienced delays due to the incident.

Hazardous materials incidents have also occurred at fixed facilities in Santa Clarita. For example, a 2020 ammonia leak at an industrial refrigeration facility in Valencia resulted in the evacuation of employees and shelter-in-place advisories for nearby businesses. Although the release was contained before it spread offsite, the event demonstrated the relevance of CalARP-regulated facilities and the importance of emergency response capacity for toxic gas releases.

3.3.9.5 Probability and Effects of Future Conditions

Overall probability over next five years: ***Moderate.***

The probability of future hazardous materials releases and transportation-related accidents in Santa Clarita is expected to remain moderate due to increasing regional freight movement, population growth, and expanding industrial activity. Santa Clarita's transportation network – including Interstate 5 (I-5), State Route 14 (SR-14), and the Union Pacific/Metrolink rail corridors – plays a critical role in statewide goods movement, and these corridors carry substantial volumes of hazardous materials. As traffic volumes, freight shipments, and industrial development continue to increase, the likelihood of hazardous materials incidents, transportation crashes, and secondary air quality impacts will rise correspondingly.

Transportation system projections indicate continued growth in freight and commuter activity affecting Santa Clarita. According to the Southern California Association of Governments (SCAG), truck traffic along I-5 through Santa Clarita is projected to increase by approximately 25–30% by 2030, with hazardous materials shipments (including fuels, industrial gases, corrosives, and flammable liquids) making up a consistent portion of commercial cargo. Rail activity is also expected to increase. Union Pacific has reported steady freight demand along the Saugus Line and Mojave Subdivision, and Metrolink anticipates service increases to meet regional commuter growth. These trends heighten the probability of rail-related incidents, including derailments, mechanical failures, or hazardous materials leaks.

Climate change is projected to indirectly increase the risk of hazardous materials releases and transportation disruptions. Extreme heat events – expected to rise significantly in Santa Clarita – can increase the likelihood of mechanical failures in trucks and trains, weaken roadway pavement, and elevate the risk of chemical volatilization or container failure in industrial settings. High wind events, especially during Santa Ana conditions, also increase risks by contributing to vehicle overturns, powerline failures, and wildfire ignitions that can interact with transportation corridors. The City's history of wind-driven wildfires demonstrates that transportation infrastructure and hazardous cargo are especially vulnerable during extreme fire weather.

Future development in Santa Clarita, particularly in the Valencia, Saugus, and Canyon Country areas, will also contribute to increased transportation volumes and higher risks of hazardous materials exposure. As new business parks, logistics centers, and industrial facilities expand, the movement of flammable liquids, compressed gases, and hazardous industrial chemicals is expected to increase. Industrial growth near the I-5/SR-126 and SR-14 corridors may introduce new fixed-facility risks, including additional CalARP-regulated operations, battery storage facilities, and chemical processing or storage sites.

Public safety agencies project that multi-vehicle collisions involving hazardous materials will remain a recurring concern, particularly along steep grades such as the I-5 Grapevine approach and the SR-14 freeway through the Newhall Pass, where brake failures, mechanical overheating, and high-speed impacts historically occur. The probability of fuel tank ruptures, chemical spills, or fires is further amplified in areas with limited emergency detour options, such as the constricted freeway segments near the I-5/I-210 interchange and the SR-14 truck bypass lanes.

Rail-related risks are also expected to increase modestly. Federal PHMSA data show that although major hazardous materials train derailments remain rare, minor spills, mechanical failures, and track-related incidents are more common. With rail traffic projected to increase through Santa Clarita due to regional growth and anticipated freight demand, the potential for incidents involving hazardous cargo, fire ignition along tracks, or mechanical failure affecting nearby neighborhoods will remain a persistent concern.

3.3.10 Landslides

3.3.10.1 Description

Landslides are the downslope movement of rock, soil, or debris due to gravity, often triggered by factors such as seismic activity, heavy rainfall, or human-induced alterations to the landscape. In Santa Clarita, landslide hazards are primarily associated with seismically induced slope instability, rockfalls, and debris flows, particularly in areas of steep terrain such as the Santa Susana Mountains, San Gabriel Mountains, and the canyons and ridgelines surrounding Saugus, Canyon Country, and Newhall.

Landslides present a significant hazard to transportation infrastructure, buildings, and utilities, particularly where development has expanded into hillside and canyon areas with high susceptibility. The effects of landslides can be exacerbated by earthquakes, intense precipitation, and wildfires, which reduce soil cohesion and increase runoff. Santa Clarita's history of major wildfires – including the 2016 Sand Fire, 2019 Tick Fire, and 2022 Route Fire – has further increased risks in burn-scarred slopes prone to post-fire debris flows.

Local Susceptibility and Risk Factors: Santa Clarita is situated within a geologically complex region, with multiple active faults capable of generating strong ground shaking. Seismically induced slope instability is a concern in the steep slopes of the Santa Susana and San Gabriel Mountains, where fractured sedimentary rock and deep alluvial soils create conditions favorable for slope failure. The City of Santa Clarita General Plan identifies moderate to very high landslide susceptibility in numerous areas, including the slopes along Soledad Canyon, Placerita Canyon, San Francisquito Canyon, and the ridgelines north of Valencia and Saugus.

Natural drainage features such as San Francisquito Creek, the South Fork Santa Clarita River, and Bouquet Creek provide some degree of separation between steep slopes and urbanized areas, but neighborhoods situated at the base of canyons – such as Sand Canyon, Mint Canyon, and parts of Canyon Country – remain vulnerable to rockfalls and debris flows during severe rainfall or seismic events.

Soils in the region vary widely in their susceptibility to slope failure. Loose, unconsolidated sediments found on alluvial fans in Canyon Country and Newhall are susceptible to erosion and shallow slides, while highly fractured sandstone and shale formations in the Santa Susana Mountains can fail along existing bedding planes or joints. These risks increase when slopes are subjected to prolonged rainfall, weathering, or ground shaking.

Seismically Induced Landslides: Strong earthquakes can trigger landslides in steeply sloped areas by causing rapid ground shaking that reduces soil cohesion and destabilizes slopes. A peak ground acceleration of 0.10g or greater is typically required to induce earthquake-related slope failures. Given Santa Clarita's proximity to the San Gabriel Fault, Santa Susana Fault, San Andreas Fault, and San Fernando Fault, the City is at notable risk for seismically induced landslides in areas with steep or unstable topography.

Intense shaking can also lead to rockfalls, particularly along steep canyon walls and road cuts such as those along SR-14 through the Newhall Pass, where historical rockfall incidents have periodically blocked travel lanes. Rockfalls occur when weathered or fractured rock becomes dislodged and falls downslope due to gravity. Areas with significant boulder fields or exposed sedimentary cliffs – such as in Placerita Canyon and Pico Canyon – are especially at risk.

Rainfall-Induced Landslides and Debris Flows: Heavy precipitation can saturate soils, reducing cohesion and triggering slope failure. This is especially concerning in post-wildfire areas, where vegetation loss increases the potential for soil erosion and rapid runoff. Burn scars from the Sand Fire (38,000 acres), Tick Fire (4,600 acres), and Route Fire (5,200 acres) contain multiple slopes identified by USGS as having high to extreme susceptibility to debris flows during intense rainfall.

Climate change projections suggest that extreme rainfall events may become more frequent and intense in Southern California, increasing the likelihood of rain-triggered landslides in Santa Clarita. Areas with loose or poorly compacted soils – including portions of Sand Canyon, Mint Canyon, and the slopes above Soledad Canyon Road – are particularly vulnerable during high-intensity storm events.

3.3.10.2 Location and Geographic Extent

Landslides in Santa Clarita are primarily associated with the steep slopes of the Santa Susana Mountains, the San Gabriel Mountains, and the Sierra Pelona foothills, which exhibit moderate to high susceptibility to rockfalls, debris flows, and slope failures due to their fractured sedimentary bedrock, steep gradients, and history of seismic activity. The sandstone and shale formations common in these ranges contain planes of weakness – including bedding planes, joints, and fault-related fractures – that contribute to slope instability, particularly during earthquakes or periods of intense rainfall.

The areas most at risk for landslides are those adjacent to steep canyons, ridgelines, and wildfire burn scars, where rockfalls and debris flows may impact developed and undeveloped lands. The highest-risk locations include Sand Canyon, Placerita Canyon, Mint Canyon, Vasquez Canyon, and portions of Newhall Pass, where repeated cycles of wildfire and winter storms have historically triggered debris flows and slope failures. Road corridors such as Sierra Highway, Sand Canyon Road, Vasquez Canyon Road, and segments of State Route 14 are particularly susceptible, as recurring slope instability has caused previous closures, roadway deformation, and emergency repairs.

Santa Clarita's vulnerability is amplified by the region's proximity to active faults, including the Santa Susana Fault, San Gabriel Fault, and the Del Valle Fault, all capable of generating strong ground shaking. Earthquake-induced landslides are of particular concern in steeply sloped areas, where projected peak ground accelerations above 0.10g can trigger significant slope failures. Additionally, areas impacted by recent wildfires – such as the 2019 Tick Fire, 2017 Rye Fire, and 2016 Sand Fire – experience elevated post-fire debris flow risks, as burned vegetation and hydrophobic soils reduce surface stability and dramatically increase runoff during storm events.

Engineered slopes, cut-and-fill construction pads, and graded hillsides within the City's expanding suburban developments may also be vulnerable if not designed and maintained to withstand seismic shaking and high-intensity rainfall. Areas with older grading standards or deferred maintenance – such as portions of Canyon Country and older hillside neighborhoods – face higher potential for localized slope failures, especially during prolonged rainfall typical of atmospheric river events.

3.3.10.3 Magnitude and Severity

The magnitude of a landslide's impact depends on its size, location, and the proximity of vulnerable structures or infrastructure. In Santa Clarita, areas at the base of steep slopes – particularly along the Santa Susana Mountains, San Gabriel Mountains, and the foothill areas of Sand Canyon, Placerita Canyon, Soledad Canyon, and the Angeles National Forest boundary – are susceptible to rockfall and debris flow hazards. These hazards pose risks to roadways, utility lines, and hillside residential neighborhoods, especially those situated on or near older cut-and-fill slopes constructed during earlier phases of the City's suburban growth. The Placerita Canyon Wash, San Francisquito Creek, and smaller tributary drainages function as natural sediment and debris transport channels and can absorb limited debris from slope failures, offering partial protection to adjacent areas during moderate events.

The Santa Susana and San Gabriel Mountain foothills contain zones with moderate to high landslide susceptibility, particularly where metasedimentary units, weathered granitic rock, and highly fractured sedimentary formations are exposed. The severity of slope failure events in Santa

Clarita is influenced by both natural and human-induced factors, including earthquake ground shaking, intense or prolonged rainfall, wildfire burn scars, and grading on unstable terrain.

Seismically induced landslides and rockfalls are a key concern given the City's proximity to multiple active faults. The San Gabriel Fault, Santa Susana Fault, Sierra Madre Fault Zone, and the more distant but powerful San Andreas Fault are capable of producing earthquakes exceeding magnitude 7.0. USGS peak horizontal ground acceleration (PGA) estimates for Santa Clarita range from 0.30g to 0.70g, depending on the neighborhood and underlying geologic conditions. Ground shaking at these levels could dislodge unconsolidated slope materials and fractured rock along canyon walls and ridgelines throughout the northern and eastern portions of the City. Additionally, areas underlain by older alluvium or poorly compacted artificial fill may be subject to seismically induced ground failure, including lateral spreading or settlement.

Rainfall-triggered landslides are also a concern, particularly during extreme precipitation events associated with atmospheric rivers or prolonged winter storm systems. Santa Clarita receives an annual average of approximately 18 inches of rainfall, but individual storm events can generate several inches within a short period, saturating loose soils – especially on steep, burned, or previously disturbed slopes. These conditions increase the probability of debris flows or shallow landslides, especially in areas with high erosion susceptibility.

Of growing significance is the risk of post-wildfire mudflow and debris transport. Santa Clarita has experienced multiple large wildfires in the past decade – including the 2016 Sand Fire (41,432 acres) and the 2019 Tick Fire (4,615 acres) – which stripped vegetation across large slopes in the Angeles National Forest and surrounding canyons. Post-fire debris flows can transport sediment, rocks, and mud far downstream, overwhelming drainage infrastructure and affecting developed areas miles from the burn perimeter. These risks are projected to increase under climate-driven changes to wildfire frequency, storm intensity, and vegetation recovery rates.

3.3.10.4 Historical Occurrences

FEMA Disaster Declarations

Incident Subcategory	County	FEMA Declaration String	Calendar Year of Declaration	Date Month	Declaration Date	Declaration Title	State
None	None	None	None	None	None	None	None

California Governor-declared Declarations

Date of Disaster	Type of Disaster	Counties Involved
None	None	None

List of Governor-declared disasters for property tax purposes since 1991. Source: California State Board of Equalization

While there are no records of large catastrophic landslides directly within Santa Clarita's developed areas, documented incidents of rockfalls, slope instability, and localized debris movement have occurred along the City's steep canyon roads and foothill corridors, particularly following major rainfall events or seismic shaking. The Santa Susana Mountains, Sierra Pelona foothills, and San Gabriel Mountain front contain numerous steep, fractured slopes where rockfalls have historically occurred along transportation routes such as State Route 14 (SR-14), Sand Canyon Road, Bouquet Canyon Road, and San Francisquito Canyon Road. Rockfall events on SR-14 have periodically caused traffic disruptions, particularly near the Soledad Canyon and Agua Dulce segments, where Caltrans routinely installs netting and slope-stabilization measures.

Historically, intense seismic events in the broader Los Angeles County region – such as the 1994 Northridge earthquake, which produced peak ground accelerations exceeding 0.5g in parts of the Santa Clarita Valley – triggered scattered rockfalls, slumps, and minor landslides on canyon slopes. USGS post-earthquake investigations documented multiple instances of rockfall and shallow slope failures in the Santa Susana Mountains and along Bouquet Canyon Road and San Francisquito Canyon, where steep geology and fractured sedimentary rock units contributed to localized failures. These events underscore the region's susceptibility to earthquake-induced slope movement.

Rainfall-driven slope failures have also affected Santa Clarita. During the 2005 and 2010 winter storms, small landslides and debris flows were reported in canyons north and east of the City, resulting in temporary closures of Placerita Canyon Road and Sand Canyon Road. Heavy precipitation during Tropical Storm Hilary (August 2023) triggered widespread soil saturation and isolated debris movement across Los Angeles County. Although Santa Clarita did not experience large debris flows, localized slope washouts and minor road impacts occurred in Tick Canyon, Soledad Canyon, and foothill neighborhoods bordering burn scars from the 2016 Sand Fire and 2019 Tick Fire – areas known to be at increased risk for post-wildfire erosion and debris flow.

3.3.10.5 Probability and Effects of Future Conditions

Overall probability over next five years: ***Moderate.***

The probability of future landslides in Santa Clarita is influenced by a combination of natural and human-induced factors, including seismic activity, extreme precipitation events, post-wildfire conditions, and slope instability. While much of the City is built on relatively stable valley floor alluvium, extensive hillside and canyon development – particularly in neighborhoods such as Canyon Country, Sand Canyon, Newhall Pass, Placerita Canyon, Saugus, and Stevenson Ranch – lies adjacent to slopes mapped by the California Geological Survey (CGS) as having moderate to high landslide susceptibility, especially during seismic shaking or following heavy rainfall.

Seismically induced landslides are a significant concern due to Santa Clarita's proximity to multiple active and capable fault zones, including the San Gabriel Fault, Santa Susana Fault, San Andreas Fault (10–15 miles northeast), and the Oak Ridge Fault. Ground accelerations exceeding 0.10g in steep terrain can trigger slope failures, rockfalls, and debris slides. CGS and USGS studies show that several canyon systems – particularly Placerita Canyon, Sand Canyon, and the ridgelines of Pico Canyon and Towsley Canyon – contain fractured or jointed sedimentary and metamorphic bedrock prone to failure during strong shaking. Historical earthquake events affecting the region (including the 1971 Sylmar, 1994 Northridge, and more recent Southern California seismic sequences) resulted in numerous local rockfalls, blocked roadways, and minor slope failures in and near Santa Clarita.

Climate change is also expected to influence landslide probability in Santa Clarita. Although the region receives an average of 15–18 inches of rainfall annually, the increasing intensity of atmospheric river events and Pacific storm systems can produce short-duration, high-intensity rainfall that saturates soils, increasing the likelihood of debris flows and shallow landslides. Periods of prolonged drought followed by high-intensity rain cause soil desiccation, cracking, and hydrophobic burn scars, reducing soil cohesion and increasing the risk of slope failure. Santa Clarita's proximity to fire-prone wildland areas – such as the Tick Fire (2019), Sand Fire (2016), Pico Fire (2021), and Lake Fire (2024) – elevates the potential for post-fire debris flows, which can occur even during moderate rainstorms and pose significant hazards along canyon roads and at the mouths of steep drainages.

The potential effects of future landslides include roadway blockages, property damage, and disruptions to essential services. Areas near the foothills of the San Gabriel Mountains and Santa Susana Mountains – such as Soledad Canyon Road, Sand Canyon Road, Sierra Highway, The Old Road, and Highway 14 through Newhall Pass – may experience temporary closures due to rockfalls, debris flows, or slope failures. Landslides in these areas could also affect water infrastructure, gas transmission lines, fiber-optic corridors, and Southern California Edison/SoCalGas facilities running through canyon systems, amplifying the regional impacts of slope instability.

3.3.11 Dam Failure

3.3.11.1 Description

A dam failure involves the partial or complete structural collapse of a dam, resulting in the sudden, uncontrolled release of stored water. The severity of such an event depends on factors like the volume of water released, the dam's structural integrity, and the downstream area's topography. Dam failures can occur due to various mechanisms:

- **Overtopping Failure:** This occurs when water levels exceed the dam's capacity due to extreme rainfall, rapid snowmelt, or inadequate spillway discharge, leading to erosion and potential collapse.
- **Structural Failure:** Resulting from aging infrastructure, foundation instability, or seismic activity, this type leads to cracking, excessive seepage, or sudden collapse.
- **Seepage Failure:** Caused by internal erosion from persistent water infiltration, gradually weakening the structure and increasing breach likelihood.
- **Earthquake-Induced Failure:** In seismically active regions, dams may experience cracking, liquefaction, or complete collapse during major earthquakes.

Dam failure, while a low-probability event, poses high-consequence risks, including uncontrolled water release leading to downstream flooding, infrastructure damage, and potential loss of life. Santa Clarita contains and is downstream of several major dams and flood-control facilities, making dam-related flooding a significant regional hazard – especially during extreme storm events, seismic activity, or structural failures[13].

Castaic Dam: Located immediately northwest of Santa Clarita, Castaic Dam impounds Castaic Lake, with a storage capacity of approximately 323,700 acre-feet. A catastrophic failure could rapidly discharge large volumes of water into Castaic Creek, flowing directly toward the Santa Clarita Valley. Inundation modeling from the California Division of Safety of Dams (DSOD) indicates that major portions of Valencia, Saugus, and Newhall could experience significant flooding depths during a worst-case breach scenario. Although no formal coordination occurred during this plan cycle, publicly available DSOD and Los Angeles County Flood Control District assessments were reviewed.

[13] California Department of Water Resources. (n.d.). Dam breach inundation map web publisher. Retrieved June 5, 2026, from https://fmds.water.ca.gov/webgis/?appid=dam_prototype_v2

Bouquet Canyon Dam: Located roughly 10 miles north of Santa Clarita, Bouquet Canyon Dam forms Bouquet Reservoir, with a capacity of approximately 36,500 acre-feet. While smaller than Castaic Dam, a failure could send fast-moving floodwaters along Bouquet Creek into the Santa Clarita Valley, affecting communities in Saugus and adjacent areas. Past DSOD evaluations have identified Bouquet Canyon Dam as a jurisdictional facility requiring continued monitoring and seismic performance review.

Pacoima Dam: Although outside the City limits and situated approximately 12 miles southeast in the San Gabriel Mountains, Pacoima Dam is a high-hazard structure with a 3,750 acre-foot storage capacity. A dam failure would primarily follow the Pacoima Wash, but extreme scenarios or compounded failures could strain downstream channels that connect to flood-control infrastructure serving northern Los Angeles County, indirectly affecting Santa Clarita's stormwater conveyance capacity.

Dry Dams and Debris Basins: Numerous smaller flood-control dams and debris basins within Los Angeles County – such as those in Mint Canyon, Sand Canyon, and Placerita Canyon – provide protection during major storm events but also present localized inundation risks should they fail or become overtopped during high-intensity rainfall.

3.3.11.2 Location and Geographic Extent

Santa Clarita is situated downstream of multiple major dams and flood control structures operated by the Los Angeles County Flood Control District (LACFCD), the California Department of Water Resources (DWR), and the U.S. Army Corps of Engineers (USACE). While the City is not located immediately adjacent to large reservoirs, it lies within downstream inundation areas for several regional dams, most notably Bouquet Canyon Dam, Castaic Dam, and to a lesser extent Pacoima Dam and Pyramid Dam, which collectively manage significant volumes of stored water in northern Los Angeles County.

Bouquet Canyon Dam, located northwest of Santa Clarita and operated by LADWP, has a storage capacity of approximately 37,500 acre-feet. Although the dam has undergone safety reviews and spillway improvements, its age – constructed in 1934 – necessitates ongoing monitoring. A catastrophic failure could send a rapid flood surge downstream via Bouquet Creek, impacting northern Santa Clarita communities.

Castaic Dam, one of the region's largest dams, has a storage capacity of 323,700 acre-feet and provides water supply and emergency storage for the State Water Project. While the dam is situated further northwest of urbanized Santa Clarita, failure would release flow into Castaic Creek and subsequently into the Santa Clara River, with potential inundation of western and central Santa Clarita

The Santa Clara River Floodplain is a significant geographic feature influencing potential dam-related flood pathways. Although typically dry for much of the year, the river channel serves as the primary drainage conveyance for northern Los Angeles County. Should reservoir outflows exceed downstream channel capacity, floodwaters could impact neighborhoods and transportation corridors along the river, including Soledad Canyon Road, Bouquet Canyon Road, and the Metrolink Antelope Valley Line right-of-way.

Roadways and Transportation Corridors Prone to Flooding: If dam-related flooding were to exceed river channel or drainage system capacity, the following Santa Clarita corridors could experience temporary flooding or access disruption:

- **Bouquet Canyon Road and Soledad Canyon Road**: Located immediately adjacent to flood-prone tributaries, these major east-west corridors are vulnerable to overtopping or storm drain capacity exceedance during an extreme discharge event.
- **Railroad Avenue and Magic Mountain Parkway**: Portions lie within the Santa Clara River's secondary floodplain and could experience inundation under worst-case dam release conditions.
- **Interstate 5**: Although largely elevated, specific underpasses and drainage-dependent segments, including the I-5/Highway 126 interchange, may experience temporary flooding if stormwater infrastructure becomes overwhelmed.

Industrial and Commercial Areas with Increased Runoff Risks: Santa Clarita's industrial districts – particularly those in Valencia Industrial Center and Centre Pointe Business Park – contain extensive impervious surfaces that exacerbate runoff volumes during high-flow events. In an extreme discharge scenario:

- Businesses located along Avenue Scott, Avenue Stanford, and Rye Canyon Road could experience storm drain backflow and localized flooding
- Facilities storing hazardous materials in industrial zones near the Santa Clara River may face secondary risks if floodwaters compromise storage systems or access points.
- Commercial developments near Valencia Town Center and adjacent retail corridors may experience parking lot flooding or temporary closures as water accumulates faster than drainage systems can manage.

Relationship to Land Use and Development: Land use and development patterns in Santa Clarita significantly influence exposure to potential dam-related flood hazards. Much of the City's recent development has occurred near the Santa Clara River corridor or in areas historically used for gravel mining and agricultural uses, where soils are more susceptible to erosion and require engineered flood management solutions. Although FEMA floodplain maps show most urbanized Santa Clarita in Zone X (minimal risk), dam failure scenarios exceed typical stormwater modeling and are not fully reflected in standard floodplain designations.

Residential expansion into formerly rural areas of Bouquet Canyon, Castaic, and Soledad Canyon increases the number of structures located within hypothetical inundation zones. The Bouquet Canyon Road Realignment Project improves conditions along the Bouquet Creek corridor by realigning portions of the roadway and incorporating channel improvements. These improvements support localized flood conveyance, roadway reliability, and public safety along a drainage corridor that is relevant to both stormwater and dam-related flood planning.

Continued commercial and industrial growth in the Valencia Commerce Center and Santa Clarita Technology Park also heighten the potential economic impacts of dam failure–related flooding. Because stormwater systems are designed primarily for seasonal rainfall – not catastrophic release events – Santa Clarita relies heavily on dam operator coordination, regional emergency planning, and public notification systems to mitigate risks associated with extreme dam scenarios.

3.3.11.3 Magnitude and Severity

Dam failures, though very rare, pose significant risks due to the potential for catastrophic flooding, infrastructure damage, and loss of life. The severity of such events depends on factors including the volume of water released, failure mechanisms, topography, and the capacity of downstream flood control systems. Santa Clarita is located downstream of several major dams – most notably Castaic Dam, Bouquet Canyon Dam, and to a lesser extent, the Terminal and Dry Canyon Debris Dams – making dam failure a low-probability but high-consequence hazard for the City.

Castaic Dam, located approximately 7 miles northwest of central Santa Clarita, impounds Castaic Lake, which can store 323,700 acre-feet of water as part of the State Water Project. In a worst-case failure scenario, floodwaters could move rapidly south through Castaic Creek and the Santa Clara River, potentially impacting highly populated areas including Valencia, Saugus, and parts of Newhall. Bouquet Canyon Dam, located roughly 13 miles north of the City, has a smaller capacity (36,500 acre-feet) but is also classified as a high-hazard dam by the California Division of Safety of Dams (DSOD). Terminal Dam is located in the Newhall area, in the hills/drainage area above Newhall, and is a smaller, older flood-control facility compared with Castaic Dam and Bouquet Canyon Dam.

Assessing the magnitude and severity of a dam failure involves hydrologic, structural, and hazard classification systems that help determine potential downstream impacts and guide emergency response planning.

FEMA Dam Hazard Potential Classification System: FEMA classifies dams based on the consequences of failure, focusing on loss of life, economic effects, and impacts to lifeline infrastructure:

- **Low Hazard Potential:** Failure results in no probable loss of human life and minimal economic or environmental damage.
- **Significant Hazard Potential:** Failure results in no probable loss of life but could cause economic loss or environmental harm.
- **High Hazard Potential:** Failure will likely cause loss of human life.

Castaic Dam, Bouquet Canyon Dam, and Terminal Dam are all designated “High Hazard Potential” dams due to the high downstream population and concentration of critical facilities, including schools, roadways, and major utility corridors. Although engineering and emergency preparedness efforts significantly reduce risk, dam classification underscores the potential for severe downstream impacts.

U.S. Army Corps of Engineers (USACE) Dam Failure Impact Rating: The USACE evaluates potential dam failure consequences based on flood wave characteristics and infrastructure exposure:

- **Category I (Catastrophic):** Complete failure causing an uncontrolled release of water, widespread flooding, and high casualties.
- **Category II (Severe):** Major breach leading to significant flooding, infrastructure damage, and potential fatalities.
- **Category III (Moderate):** Partial failure or emergency release causing localized flooding and property damage.
- **Category IV (Minimal):** Minor or controlled releases unlikely to cause substantial downstream impacts.

A full or partial breach of Castaic Dam could generate a fast-moving flood wave through Castaic Creek and into portions of the Santa Clara River corridor. Potential impacts would depend on breach conditions, reservoir level, timing, and mapped inundation limits, and may include low-lying river-adjacent areas, selected transportation corridors, utilities, and other infrastructure located within official dam-inundation areas.

A controlled emergency release, such as those historically performed at Bouquet Canyon, would primarily increase flow within existing channels but could still cause localized flooding in low-lying portions of the Santa Clara River corridor, including sections of Saugus and Canyon Country, particularly where storm drains discharge to the river.

Predicting the Magnitude of Flooding: Hydrologic analyses rely on several key metrics:

- **Peak Discharge Volume:** Castaic Dam's hypothetical worst-case peak discharge exceeds 300,000 cubic feet per second (CFS), depending on breach size and speed.
- **Flood Inundation Depth:** Depths in urbanized areas of Santa Clarita could range from 2 to more than 15 feet, depending on location and channel conveyance.
- **Flood Wave Travel Time:** Downstream communities could receive little advance warning in a sudden breach scenario, underscoring the importance of early-warning systems and emergency communication.

Severity of Potential Dam Failure Impacts: The severity of dam failure impacts in Santa Clarita would depend on the extent of failure, performance of flood control systems, and effectiveness of emergency response measures:

- **Minor Dam Failure or Controlled Release (Low to Moderate Impact):** A minor structural issue or scheduled release would increase flows within the Santa Clara River but is unlikely to cause significant flooding. Localized ponding could occur near outfalls along Railroad Avenue, Wiley Canyon Road, and Bouquet Canyon Road, especially during concurrent storm events. Emergency operations would focus on managing storm drain capacity and notifying residents in river-adjacent neighborhoods.
- **Partial Dam Breach (Moderate to High Impact):** A partial dam breach could quickly raise water levels along Castaic Creek, Bouquet Creek, or the Santa Clara River, depending on the facility involved and the breach scenario. Potential flooding would be concentrated in low-lying areas and infrastructure corridors identified in official inundation mapping, particularly locations near drainage channels, river crossings, storm drain outfalls, and flood-control facilities.
- **Full Dam Failure (Catastrophic Impact):** A complete failure of Castaic Dam would produce large-scale, fast-moving flooding extending through much of the Santa Clarita Valley. Impacts could include widespread street flooding, damage to residential and

commercial structures, flooding of industrial complexes near the river corridor, and hazardous material releases from inundated industrial storage facilities. Major transportation corridors – including I-5 and SR-126 – could be rendered impassable. Floodwaters could take several days to recede, resulting in prolonged business interruptions, infrastructure repair needs, and significant economic losses.

3.3.11.4 Historical Occurrences

Although Santa Clarita has not experienced a dam failure within its City boundaries, multiple historical dam-related flood events in Los Angeles County demonstrate the region's vulnerability to extreme inflow, structural concerns, and emergency releases from upstream reservoirs that influence downstream flood behavior.

- **1928 St. Francis Dam Failure:** The collapse of the St. Francis Dam on March 12, 1928 – located in present-day Valencia within Santa Clarita – remains one of the deadliest engineering disasters in U.S. history. More than 430 people were killed, and an estimated 12.4 billion gallons of water surged through the Santa Clarita Valley before continuing toward Ventura County. The failure devastated communities along the San Francisquito Canyon corridor, destroyed homes, railroads, and agricultural lands, and reshaped state and national dam safety policy. This event directly informs modern dam safety engineering and remains the most significant dam-related hazard in Santa Clarita's history.
- **1969 Winter Storms and Emergency Releases:** During the powerful winter storms of February 1969, upstream reservoirs in Los Angeles County – including Castaic Lake's forerunner facilities and regional flood control basins – performed emergency releases to maintain structural safety. These high-flow discharges significantly increased water levels in the Santa Clara River and tributaries crossing Santa Clarita. Localized flooding occurred in low-lying portions of the Santa Clarita Valley, particularly near river crossings and unlined channel sections, underscoring the City's reliance on regional flood control operations during extreme weather.
- **1998 El Niño Winter Storms:** The strong 1997–1998 El Niño brought intense rainfall, leading to elevated flows along the Santa Clara River and its tributaries. While no dam failures occurred, increased inflows required heightened monitoring at Castaic Dam, and downstream areas in Santa Clarita experienced roadway flooding, bank erosion, and sediment movement. This event reinforced the City's need to evaluate downstream impacts of emergency reservoir operations during unusually wet years.
- **2005 Severe Winter Storms:** Record-breaking rainfall across Los Angeles County prompted additional emergency releases from regional flood control dams to maintain

storage capacity. Elevated river flows affected portions of the Santa Clara River corridor in Santa Clarita, causing temporary road closures and flooding near low-water crossings and unarmored channel banks. The storm highlighted ongoing vulnerabilities related to stormwater conveyance and downstream sediment transport.

- **2017 Atmospheric River Storms and Reservoir Evaluations:** The winter storms of early 2017 triggered increased inflows into upstream reservoirs, including Castaic Lake. Although no structural issues occurred, the Los Angeles County Flood Control District and California DSOD implemented enhanced monitoring to ensure spillway performance remained within safe operating limits. The resulting high flows within the Santa Clara River and tributaries caused urban flooding in low-lying areas of Santa Clarita, emphasizing the importance of continuous investment in drainage and channel protection infrastructure.
- **2023 Winter Storms and Atmospheric Rivers:** The 2023 winter storm season brought repeated atmospheric river events to Southern California, producing elevated flows, localized flooding, slope instability, and increased operational demands on regional drainage and flood-control systems. Although no dam failure occurred in Santa Clarita, the event demonstrated the importance of coordinated stormwater management, reservoir operations, public notification, and emergency response during prolonged wet-weather periods.

FEMA Disaster Declarations Related to Dam-Influenced Flooding

While no FEMA declaration has been issued specifically due to a dam failure affecting Santa Clarita, multiple federal declarations have included storm-induced reservoir releases and downstream flood management activities in Los Angeles County:

- **FEMA DR-1203 (1998 El Niño Flooding):** Declared due to major flooding across Southern California. High stormwater inflows required emergency operations at regional dams, contributing to elevated flows in the Santa Clara River through Santa Clarita.
- **FEMA DR-1577 (2005 Severe Winter Storms):** Issued following widespread flooding and high-intensity rainfall. Reservoir releases increased downstream flow rates, affecting low-lying sections of Santa Clarita’s river corridor.
- **FEMA DR-4301 (2017 Winter Storm Flooding):** Declared in response to multiple atmospheric river events. Upstream dam managers coordinated controlled releases to prevent overtopping, contributing to temporary urban flooding in Santa Clarita.

- **FEMA DR-4683 and DR-4699 (2023 Atmospheric River Storms):** Declared after a series of severe storms in early 2023. High inflows required ongoing monitoring of regional dams, including Castaic Dam, with increased releases elevating downstream flood risk along the Santa Clara River.

3.3.11.5 Probability and Effects of Future Conditions

Overall probability over next five years: ***Unlikely.***

Although Santa Clarita is not located immediately below a single dominant flood-control dam, the City is located downstream of two major high-hazard dams – Castaic Dam and Bouquet Canyon Reservoir – as well as multiple debris basins, detention facilities, and sections of the Santa Clara River flood-control system. While the overall probability of catastrophic dam failure remains low due to modern engineering standards, regulatory oversight, and ongoing monitoring by the California Department of Water Resources (DWR), the U.S. Army Corps of Engineers (USACE), and the Los Angeles County Flood Control District, Santa Clarita remains exposed to indirect and cascading flood impacts should a structural failure, seismic event, or emergency release occur at any upstream dam. Increasing climate variability, aging dam infrastructure, and seismic activity present evolving risks that must be incorporated into the City's Hazard Mitigation Plan.

Castaic Dam, located approximately 7 miles northwest of Santa Clarita, is a major component of the State Water Project and impounds Castaic Lake, with a storage capacity of over 323,700 acre-feet. The dam is classified as a High Hazard Potential Dam, indicating that failure would likely result in significant downstream loss of life and widespread infrastructure damage. Failure or emergency releases would transmit floodwaters down Castaic Creek into the Santa Clara River, impacting communities in Valencia, Saugus, Canyon Country, and downstream jurisdictions.

Bouquet Canyon Reservoir, located roughly 10 miles north of Santa Clarita, is also classified as a High Hazard Potential Dam and is historically significant because its predecessor – the 1934 Bouquet Dam – failed during construction, causing 45 fatalities. The modern dam is seismically vulnerable due to steep canyon walls and its age (constructed in 1934 and modified thereafter).

Key Emerging Risk Factors

- **Seismic Activity**: Seismic risk remains a primary concern for all three dams serving the Santa Clarita Valley. The region contains several active faults, including the San Gabriel Fault, Santa Susana Fault, Oak Ridge Fault, and the nearby San Andreas Fault, which

USGS estimates has a 60–70% probability of producing a magnitude 6.7+ earthquake in the next 30 years. Ground shaking of this magnitude could compromise dam embankments, spillways, or outlet works, necessitating emergency releases to prevent structural failure. The steep canyon topography surrounding Bouquet Canyon Reservoir increases susceptibility to earthquake-induced cracking, landslides, or spillway damage.

- **Extreme Precipitation and Climate Change**: According to the Fifth National Climate Assessment, the frequency of extreme precipitation events exceeding 4 inches in 24 hours in Southern California is projected to increase by 40–60% by 2050. Atmospheric river events may produce rapid inflows into Castaic Lake and Bouquet Canyon Reservoir, increasing the likelihood of emergency discharges to prevent overtopping. The Santa Clara River watershed is highly responsive to short-duration, high-intensity rainfall, creating potential for rapid, high-velocity flood surges to travel downstream toward Santa Clarita.
- **Aging Infrastructure**: Castaic Dam was completed in 1973 and Bouquet Canyon Reservoir in 1934. Although each facility undergoes regular safety inspections, structural aging – including concrete weathering, spillway erosion, and seismic retrofitting delays – requires continual investment to maintain resilience under both seismic and hydrologic stressors. DWR's Division of Safety of Dams has identified spillway and outlet vulnerabilities at multiple dams statewide, increasing concerns about long-term reliability.

Hydrologic and Flood Risk Modeling: Hydrologic modeling indicates that in the event of a partial breach, full breach, or emergency discharge, Santa Clarita could experience a range of flood impacts depending on dam location, breach severity, and watershed saturation:

- **Castaic Dam:** Modeling conducted by the State Water Project indicates that a sudden failure could generate a catastrophic flood wave exceeding 200,000 cubic feet per second (cfs), reaching Valencia and Saugus within 1–2 hours, then continuing down the Santa Clara River at high velocities.
- **Bouquet Canyon Reservoir:** A breach would send intense flood flows into Bouquet Creek, impacting Plum Canyon, Haskell Canyon, Saugus, and Canyon Country, with arrival times of 30–60 minutes in some areas.

In areas of steep gradients – such as Bouquet Canyon, Castaic Creek, and upper Santa Clara River tributaries – flood wave travel speeds may exceed 10–15 feet per second, placing extreme pressure on stormwater infrastructure, road networks, utilities, and bridge structures.

Future Flood and Infrastructure Impacts: A dam failure affecting Santa Clarita would likely produce rapid, high-velocity flooding with severe consequences for people, property, and critical infrastructure downstream. Inundation could affect low-lying areas of Valencia, Saugus, Canyon Country, and Newhall, particularly where floodwaters move beyond channelized corridors and into developed areas. Roads, bridges, utilities, and drainage facilities near the Santa Clara River, Castaic Creek, and other major conveyance corridors could sustain significant damage from erosion, scour, debris impact, and prolonged inundation. Major transportation routes, including Interstate 5, State Route 126, Soledad Canyon Road, and Magic Mountain Parkway, could experience closures or loss of access, disrupting evacuation, emergency response, and regional mobility.

Dam failure could also trigger a range of secondary impacts that extend beyond the initial flood wave. These may include debris accumulation at crossings and channel constrictions, sediment deposition that reduces drainage capacity, hazardous material releases from industrial or commercial sites in inundation areas, and slope instability or localized landslides in areas already vulnerable to erosion. In broader floodplain areas, standing water and residual debris could delay reentry, prolong service interruptions, and complicate recovery operations for several days after the event.

Long-Term Trends: Over the long term, changing hydrologic conditions, more extreme storm events, and post-wildfire watershed instability may increase the consequences associated with dam-related flooding in the Santa Clarita area. More intense runoff could increase reservoir inflows and place greater stress on spillway and outlet systems during extreme events, while wildfire-driven debris flows may threaten dam access roads, outlet works, and spillways and reduce the reliability of associated infrastructure. Continued urban development in portions of the watershed may also increase runoff volumes and downstream exposure, raising the number of people, structures, and facilities that could be affected if a dam failure or related emergency release were to occur.

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3.3.12 Epidemic/Pandemic

3.3.12.1 Description

Infectious diseases and pandemics pose significant risks to public health, economic stability, and societal function. These hazards can spread rapidly, overwhelm healthcare systems, and disrupt essential services. An infectious disease outbreak occurs when a pathogen spreads within a community, region, or globally, potentially leading to widespread illness and fatalities.

A pandemic is a large-scale infectious disease outbreak that extends across multiple countries or continents, affecting a significant portion of the global population. Pandemics often arise from novel or highly transmissible pathogens with little to no preexisting immunity, such as influenza viruses, coronaviruses (e.g., SARS-CoV-2), or emerging zoonotic diseases. The World Health Organization (WHO) and the Centers for Disease Control and Prevention (CDC) define pandemics as global epidemics requiring coordinated international response efforts.

The spread and severity of an infectious disease outbreak depend on its mode of transmission, human behavior, and the effectiveness of public health interventions.

Modes of Transmission: Understanding how a disease spreads is critical for developing mitigation strategies:

- **Airborne Transmission** – Pathogens spread through respiratory droplets or aerosolized particles (e.g., COVID-19, tuberculosis, measles).
- **Direct Contact Transmission** – Infection occurs through physical contact with an infected person, contaminated surfaces, or bodily fluids (e.g., Ebola, norovirus, MRSA).
- **Vector-Borne Transmission** – Carriers such as mosquitoes and ticks spread disease (e.g., West Nile virus, Zika virus, Lyme disease).
- **Foodborne and Waterborne Transmission** – Contaminated food or water supplies contribute to outbreaks (e.g., Salmonella, cholera).

The interaction of these transmission pathways with climate change and urban development increases the complexity of predicting and mitigating infectious disease risks.

Characteristics of Pandemic-Capable Diseases: Not all infectious diseases result in pandemics. Pathogens with pandemic potential typically share the following characteristics:

- **High transmissibility** – The ability to spread efficiently from person to person, often before symptoms appear (e.g., influenza, COVID-19).
- **Global impact potential** – The capacity to move beyond a single region and affect multiple countries (e.g., H1N1, SARS).
- **Limited preexisting immunity** – A lack of natural or vaccine-induced immunity within the population, increasing infection susceptibility (e.g., novel coronaviruses, emerging zoonotic diseases).
- **Severe healthcare strain** – A high rate of infections overwhelming hospitals, leading to resource shortages and increased mortality.

3.3.12.2 Location and Geographic Extent

Infectious diseases and pandemics differ from natural hazards in that they do not adhere to physical geographic boundaries. Instead, their spread is influenced by human mobility, population density, infrastructure resilience, and the effectiveness of containment measures. The geographic extent of an outbreak can range from localized clusters to global pandemics, with transmission pathways dictated by factors such as travel patterns, workplace interactions, and healthcare access.

Santa Clarita does not possess unique geographic attributes that inherently increase the likelihood of infectious disease outbreaks. However, as a suburban City with a rapidly growing population of more than 228,000 residents, a significant commuting workforce, and strong connectivity to Los Angeles County's regional economy, its integration with major transportation corridors increases potential pathways for disease transmission. The City's economic and social linkages with the broader Southern California region necessitate a preparedness framework that accounts for emerging infectious disease threats and pandemic response capabilities.

In Santa Clarita, several factors influence the likelihood and severity of disease transmission in specific areas:

- **Industrial and Commercial Zones:** Santa Clarita's economy includes major employment hubs such as the Valencia Industrial Center, Centre Pointe Business Park, and the Saugus Industrial District, which collectively employ tens of thousands of workers in manufacturing, logistics, aerospace, biomedical, and film production support industries. Many of these facilities require employees to work indoors in close proximity, increasing the risk of airborne disease transmission – particularly for respiratory pathogens such as influenza, RSV, and COVID-19. Similar to statewide trends observed during the COVID-19 pandemic, indoor production, warehouse, and processing facilities in Santa Clarita face elevated transmission potential due to shared machinery, shift-based work, and high personnel turnover. Enhanced ventilation, hygiene protocols, and flexible sick-leave practices remain central to workplace resilience.

- **High-Traffic Transportation Corridors:** Santa Clarita lies at the convergence of Interstate 5, State Route 14, State Route 126, and multiple high-volume arterials such as Magic Mountain Parkway and Valencia Boulevard. These corridors support heavy commuter traffic to Los Angeles and regional employment centers. Additionally, the Metrolink Antelope Valley Line, with stations at Santa Clarita, Newhall, and Via Princessa, facilitates daily passenger movement between the City and Downtown Los Angeles. These transportation networks can accelerate infectious disease spread due to close contact among commuters, transit riders, and workers in the goods-movement sector. Public transit users, particularly those who rely on Metrolink, Santa Clarita Transit buses, and rideshare services, are at heightened exposure risk during peak periods.
- **Healthcare Facilities and Long-Term Care Centers:** Santa Clarita is served by Henry Mayo Newhall Hospital, multiple urgent care centers, outpatient medical offices, and more than a dozen assisted living and skilled nursing facilities. These facilities serve aging adults and individuals with chronic health conditions who face the highest risks from infectious diseases. Historical patterns from the COVID-19 pandemic demonstrated increased vulnerability in long-term care and congregate living facilities throughout Los Angeles County, emphasizing the importance of robust infection-control systems, staff training, vaccination outreach, and PPE access within Santa Clarita's care facilities.
- **Schools and Childcare Facilities:** Santa Clarita contains more than 60 public schools across the William S. Hart Union High School District, Saugus Union School District, Newhall School District, and Sulphur Springs Union School District, in addition to private schools, preschools, and childcare centers. Schools are high-contact environments where respiratory and gastrointestinal diseases spread rapidly due to dense interactions, shared surfaces, and lower immunity levels among younger children. Historical influenza and COVID-19 absenteeism patterns in Santa Clarita schools demonstrate that disease outbreaks can significantly disrupt learning, childcare availability, and household routines, highlighting the importance of coordinated school-based health protocols.
- **Public Gathering Spaces and Retail Centers:** Santa Clarita includes numerous high-traffic destinations such as the Westfield Valencia Town Center, Old Town Newhall, the Santa Clarita Sports Complex, community centers, gyms, theaters, and large retail corridors along Bouquet Canyon Road, Soledad Canyon Road, and Golden Valley Road. These venues attract residents and visitors, increasing the potential for airborne and surface-contact disease transmission, especially during events, holiday periods, or recreational activities. Crowded indoor environments – such as fitness facilities,

restaurants, and entertainment venues – remain areas of elevated exposure risk during infectious disease outbreaks.

3.3.12.3 Magnitude and Severity

Infectious disease outbreaks and pandemics pose significant risks to public health, the economy, and societal stability. The severity of an outbreak is determined by multiple factors, including the pathogen's transmissibility, morbidity and mortality rates, impact on healthcare systems, and economic disruption. Unlike natural hazards with standardized intensity scales, infectious disease severity is assessed using epidemiological and clinical metrics, such as the basic reproduction number (R_0), case fatality rate (CFR), and excess mortality.

Pandemic classification and response levels are guided by international and national health agencies, including the World Health Organization (WHO), the Centers for Disease Control and Prevention (CDC), and state and local public health departments. The impact of a pandemic also depends on the availability and effectiveness of medical countermeasures, including vaccines, antiviral treatments, and healthcare surge capacity. Pandemic severity is evaluated using epidemiological models, hospital capacity assessments, and economic impact studies. The following frameworks provide a structured approach to measuring and understanding pandemic severity:

- **Basic Reproduction Number (R_0):** The Basic Reproduction Number (R_0) is a fundamental metric indicating the average number of secondary infections caused by a single infected individual in a fully susceptible population. Higher R_0 values correlate with greater transmission potential, necessitating stronger mitigation measures such as vaccination, social distancing, and quarantine protocols.
    - **$R_0 < 1$** – The disease is expected to decline over time.
    - **$R_0 = 1$** – The disease maintains a steady presence without significant outbreaks.
    - **$R_0 > 1$** – The disease spreads exponentially, increasing the risk of a pandemic.

  Past pandemics have exhibited different R_0 values, influencing their severity and response measures:
    - **Seasonal Influenza:** $R_0 \approx 1.3$
    - **COVID-19 (original strain):** $R_0 \approx 2.5$
    - **Measles:** $R_0 \approx 12–18$ (one of the most highly contagious diseases known)

- **Case Fatality Rate (CFR):** CFR measures the proportion of deaths among confirmed cases and is a key indicator of pandemic severity. Higher CFR values indicate greater strain on public health infrastructure and higher mortality risk:
    - **Low-Severity Disease (CFR < 0.1%)** – Includes common seasonal influenza strains.
    - **Moderate-Severity Disease (CFR 0.1% – 5%)** – Includes pandemic influenza (H1N1) and certain COVID-19 strains.
    - **High-Severity Disease (CFR > 10%)** – Includes Ebola (CFR ~50%), SARS (CFR ~11%), and MERS (CFR ~34%)

- **Hospitalization and Healthcare System Strain:** A pandemic's severity is also measured by the burden it places on healthcare systems. High hospitalization rates can overwhelm medical facilities, necessitating emergency expansion measures and surge staffing. Metrics include:
    - **Hospitalization Rate** – Percentage of infected individuals requiring hospital care.
    - **ICU Admission Rate** – Proportion of hospitalized patients requiring intensive medical intervention.
    - **Bed Occupancy Rate** – Percentage of available hospital beds occupied by pandemic patients.

- **Pandemic Severity Assessment Framework (PSAF):** The CDC's Pandemic Severity Assessment Framework (PSAF) categorizes pandemics based on transmissibility and clinical severity:
    - **Category 1 (Mild Pandemic):** CFR < 0.1% (e.g., seasonal flu).
    - **Category 2–3 (Moderate Pandemic):** CFR between 0.1% and 1.0% (e.g., 2009 H1N1 pandemic).
    - **Category 4–5 (Severe Pandemic):** CFR > 1.0% (e.g., 1918 Influenza Pandemic, early COVID-19 waves).

Severity of Potential Infectious Disease Outbreaks

Impact on Workforce and Industrial Sector: Santa Clarita has a diverse employment base that includes retail, education, healthcare, hospitality, logistics, film production support, and light industrial operations. Many of these sectors require in-person labor and shared indoor environments, which can increase disease transmission risk. Key considerations include:

- High absenteeism during pandemics leading to service disruptions and reduced staffing across essential sectors, particularly in retail, emergency services, and logistics.
- Increased risk of workplace outbreaks in densely staffed environments such as distribution centers near the Rye Canyon and Center Pointe industrial areas.
- The need for enhanced workplace safety policies, including PPE, remote work accommodations where feasible, upgraded ventilation, and staggered shifts to reduce contact rates.

Healthcare System and Emergency Response Challenges: Santa Clarita relies heavily on Henry Mayo Newhall Hospital, which serves as the primary acute-care facility for the Santa Clarita Valley. During high-severity pandemics, regional hospitals across Los Angeles County may experience capacity strain. Key risks include:

- ICU bed shortages and increased emergency department congestion, similar to conditions experienced during COVID-19 surges when Henry Mayo reached or neared capacity on multiple occasions.
- Supply chain challenges for critical medical equipment, including ventilators, testing supplies, antiviral medications, and personal protective equipment (PPE).
- Increased call volumes for emergency medical services (EMS), placing operational strain on the Los Angeles County Fire Department and sheriff's dispatch as call loads rise during peak outbreak periods.

Public Health Infrastructure and Vulnerable Populations: Certain populations within Santa Clarita face heightened risks due to age, preexisting health conditions, or economic constraints. Key vulnerabilities include:

- Older adults and immunocompromised individuals at higher risk of severe disease, particularly in neighborhoods with concentrated senior housing such as areas near Valencia and Canyon Country.
- Long-term care and assisted living facilities – of which Santa Clarita has more than a dozen – requiring stringent infection control measures to prevent rapid disease spread among residents.
- Low-income and uninsured populations, including individuals in multifamily housing areas of Canyon Country and Newhall, who may face barriers to healthcare access, resulting in delayed treatment and increased community transmission.

3.3.12.4 Historical Occurrences

Throughout history, infectious disease outbreaks and pandemics have had profound public health, economic, and societal impacts. While Santa Clarita has not been the epicenter of a pandemic, the City has been affected by past regional, national, and global infectious disease events. These outbreaks have shaped public health policies, emergency response planning, and business continuity strategies.

- **1918 Influenza Pandemic (H1N1, "Spanish Flu"):** The 1918 influenza pandemic was one of the deadliest global disease outbreaks, infecting approximately one-third of the world's population and causing an estimated 50 million deaths worldwide. Los Angeles County experienced high infection rates, with over 30,000 reported cases in a single month. Local governments imposed quarantine measures, business closures, and mask mandates, similar to later pandemics.
- **1957–1958 Influenza Pandemic (H2N2, "Asian Flu"):** This pandemic resulted in an estimated 1–2 million deaths worldwide and caused severe economic disruptions due to workforce absenteeism. California's healthcare system was heavily burdened, prompting public health authorities to implement vaccination programs.
- **2009 H1N1 Influenza Pandemic ("Swine Flu"):** The H1N1 pandemic caused an estimated 274,000 hospitalizations and 12,500 deaths in the U.S. Los Angeles County reported thousands of confirmed cases, leading to school closures, vaccination campaigns, and emergency health declarations. FEMA provided funding to local governments for pandemic response, including testing, treatment, and public education efforts.
- **2014–2016 West Africa Ebola Outbreak:** While the Ebola virus did not spread widely in the U.S., Los Angeles County health officials implemented emergency response protocols due to the risk of imported cases. Local hospitals and emergency services in Southern California conducted Ebola preparedness drills and enhanced biosecurity protocols.
- **2019–2023 COVID-19 Pandemic:** The COVID-19 pandemic was the most significant infectious disease event affecting Santa Fe Springs in modern history. Over 36,000 fatalities occurred in Los Angeles County alone. Business closures, workforce disruptions, and supply chain delays affected the industrial, manufacturing, and logistics sectors. School closures and remote learning transitions impacted students, educators, and working parents.

FEMA Disaster Declarations Related to Infectious Disease Events

FEMA issues disaster declarations for pandemics when they cause widespread infrastructure strain, economic damage, or require large-scale federal assistance. Santa Clarita has benefited from federal emergency support during national and statewide pandemic responses.

- **FEMA DR-4482 (COVID-19 Pandemic, March 2020 – Ongoing):** Provided funding for emergency medical response, PPE distribution, and economic relief programs in California. Los Angeles County and Santa Clarita received funding for vaccination sites, hospital support, and small business assistance. Remains one of the most extensive public health emergency responses in FEMA history.
- **FEMA H1N1 Emergency Response Funding (2009–2010):** Federal assistance helped provide flu vaccines, public health messaging, and antiviral medication stockpiles for state and local governments. Santa Clarita's healthcare providers benefited from county-level allocations of medical resources.

3.3.12.5 Probability and Effects of Future Conditions

Overall probability over next five years: ***Unlikely.***

Public health agencies, including the Centers for Disease Control and Prevention (CDC), the World Health Organization (WHO), and the Los Angeles County Department of Public Health, use predictive modeling to assess disease transmission patterns and outbreak probabilities. These models integrate a range of factors, including pathogen characteristics, environmental influences, and human movement patterns, to estimate the probability of future pandemics and emerging infectious diseases.

The WHO and CDC have identified that novel infectious diseases are emerging at an increasing rate, with zoonotic viruses – pathogens transmitted from animals to humans – accounting for approximately 75% of new diseases. The probability of another pandemic occurring within the next few decades is considered high, with respiratory viruses such as influenza and coronaviruses being the most likely causative agents. Additionally, climate change is altering disease transmission patterns by increasing the spread of vector-borne illnesses like West Nile virus, which is already established in Los Angeles County and is regularly detected in mosquito pools in the Santa Clarita Valley. Santa Clarita must incorporate these projections into emergency response planning, considering both airborne diseases and the expansion of vector-borne threats driven by rising temperatures.

Public health models, including the SEIR (Susceptible-Exposed-Infectious-Recovered) model and computational agent-based simulations, provide insights into how infectious diseases spread through different population groups. In suburban, commuter-oriented communities like Santa Clarita, several key factors influence transmission dynamics. Workplace transmission risks are relevant in schools, retail centers, film-industry production spaces, medical offices, and logistics facilities located along major employment corridors such as Valencia Industrial Center and Rye Canyon. The City's proximity to major freeways – Interstate 5, State Route 14, and SR-126 – and intercity commuting routes connecting Santa Clarita with Los Angeles, Burbank, and the San Fernando Valley increases potential exposure during regional outbreaks. Population movement patterns, including the congregation of individuals in large school districts (with approximately 42,000 K–12 students enrolled), senior communities, and high-traffic retail centers such as Westfield Valencia Town Center, also play a role in determining the likelihood and severity of an outbreak.

The impact of a future pandemic will also depend on the strain placed on the healthcare system and the capacity for medical response. During the COVID-19 pandemic, hospitals serving Santa Clarita – including Henry Mayo Newhall Hospital – experienced severe strain, with ICU occupancy rates exceeding 90% during peak periods and the facility at times operating under surge conditions. Future pandemics with high hospitalization rates could similarly overwhelm emergency medical services and necessitate expanded surge capacity and mutual-aid support from neighboring jurisdictions.

Although the exact timing of future pandemics cannot be predicted, global epidemiological trends indicate that severe infectious disease outbreaks are likely to occur more frequently due to increased international travel, environmental changes, and microbial evolution. Several key factors shape projections for disease severity and frequency in Santa Clarita. Historical patterns suggest that large-scale pandemics have occurred approximately every 30 to 50 years, but modern factors, including increased human-animal interactions and climate shifts, may accelerate this timeline. The CDC and WHO have identified multiple viral families, including coronaviruses, influenza viruses, and paramyxoviruses, with pandemic potential. Los Angeles County's role as a global transportation hub – via LAX, Hollywood Burbank Airport, Santa Clarita's Metrolink Antelope Valley Line, I-5, and SR-14 – further increases the likelihood of early exposure to emerging diseases, which could affect Santa Clarita before containment measures are widely implemented. As a result, Santa Clarita must maintain an adaptive public health framework that allows for rapid adjustments to emerging disease threats and changing transmission patterns.

Future pandemics could vary widely in severity. Some may cause widespread illness with low mortality rates, similar to the 2009 H1N1 influenza pandemic, while others could result in high fatality rates and healthcare system breakdowns, resembling the early waves of COVID-19 or historical outbreaks such as the 1918 influenza pandemic. WHO and CDC models suggest that a pandemic with a case fatality rate (CFR) between 1% and 3% could lead to significant social and economic disruptions, while a CFR exceeding 5% could trigger global instability. Additional concerns, such as antibiotic resistance and novel pathogen evolution, could further increase the severity of future outbreaks and complicate containment efforts.

Climate change is expected to play a growing role in the emergence and spread of infectious diseases. Rising temperatures and shifting precipitation patterns are expanding the range of vector-borne diseases, such as West Nile virus and potentially dengue fever, into new geographic areas. Santa Clarita's hotter summer climate – regularly exceeding 100°F, with projected increases in extreme heat days – may create microenvironments conducive to more frequent mosquito breeding and disease transmission, particularly near river corridors like the Santa Clara River and areas with seasonal standing water. Additionally, worsening air pollution and wildfire smoke – both of which regularly affect Santa Clarita due to regional wildfire activity – can exacerbate respiratory infections and make populations more vulnerable to airborne diseases.

SECTION 4 – VULNERABILITY ASSESSMENT

Element B: Risk Assessment Requirements
B2. Does the plan include a summary of the jurisdiction's vulnerability and the impacts on the community from the identified hazards? Does this summary also address NFIP insured structures that have been repetitively damaged by floods? (Requirement 44 CFR § 201.6(c)(2)(ii))

This section evaluates how the hazards identified in Section 3 may affect Santa Clarita's people, property, infrastructure, critical facilities, and overall community functioning. While the hazard profiles describe the nature, location, and future probability of each hazard, this section focuses on consequences: who and what are most exposed, where losses or disruptions are most likely to occur, and which community characteristics may increase or reduce vulnerability. In this way, the vulnerability assessment translates hazard information into a clearer understanding of potential impacts across the city.

The vulnerability assessment is intended to support a more targeted and practical mitigation strategy by identifying the populations, assets, and systems that face the greatest risk from natural and human-caused hazards. It considers not only physical exposure, but also broader community factors such as demographics, land use patterns, critical infrastructure, access and mobility constraints, and environmental conditions that may influence the severity of impacts. Consistent with FEMA requirements, this section provides a summary of Santa Clarita's vulnerability to the identified hazards and establishes the basis for prioritizing mitigation actions that will best reduce future losses and strengthen community resilience.

4.1 Introduction

Vulnerability assessments are critical tools for identifying the people, infrastructure, and assets most at risk from natural and human-caused hazards. By systematically analyzing how hazards interact with community characteristics such as demographics, land use, critical facilities, and environmental conditions, the assessment helps determine who and what are most vulnerable to disasters.

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4.2 Hazard-Specific Vulnerability Analysis

4.2.1 Wildfire

4.2.1.1 Overall Vulnerability and Impact

Santa Clarita faces one of the highest wildfire risks in Los Angeles County, with extensive wildland–urban interface (WUI) areas along the City's outer perimeter and within canyon communities such as Placerita Canyon, Sand Canyon, Soledad Canyon, San Francisquito Canyon, and Bouquet Canyon. Approximately 68 percent of the City's land area lies within CAL FIRE–designated Very High Fire Hazard Severity Zones, and more than 36,000 parcels are classified as having severe wildfire risk under First Street Foundation (2025) modeling. Severe fire-weather conditions – characterized by single-digit humidity, temperatures exceeding 100°F, and Santa Ana wind gusts above 60 mph – regularly produce rapid fire spread and substantial ember cast. Recent major fires, including the 2016 Sand Fire (41,432 acres), 2017 Rye Fire (6,049 acres), 2019 Tick Fire (4,615 acres), and 2021 Route Fire (5,208 acres), demonstrate the City's exposure to direct structure loss, smoke impacts, mass evacuations, and transportation disruptions on I-5, SR-14, and Soledad Canyon Road. Climate projections indicate that continued warming, declining fuel moisture, and precipitation variability will lengthen the fire season and intensify the likelihood of fast-moving, high-intensity wildfires.

4.2.1.2 Population Exposure

An estimated 110,000 to 125,000 residents – approximately 48 to 54 percent of the City's population using the California Department of Finance 2026 population estimate of 232,833 residents – live within or immediately adjacent to WUI areas. Exposure is greatest in Canyon Country east of Sierra Highway, the Sand Canyon and Placerita Canyon communities, hillside neighborhoods in Saugus north of Copper Hill Drive, Newhall Pass and Wiley Canyon, and the Valencia foothill areas near open space preserves. Population risk is heightened by steep terrain, limited ingress and egress in canyon communities, and the dependence on high-volume evacuation corridors that intersect major state highways.

4.2.1.3 Critical Facilities

Several essential facilities are located within or adjacent to Very High Fire Hazard Severity Zones. These include three Los Angeles County Fire Department stations serving WUI-adjacent areas (Stations 107, 108, and 123); multiple Southern California Edison transmission lines that traverse high-risk canyon corridors; SCV Water infrastructure, including tanks, booster stations, and major transmission pipelines identified as vulnerable in the 2023 SCV Water LHMP; and the Metrolink Antelope Valley Line, which has experienced service interruptions due to fire and smoke conditions. Communication towers on ridge lines are also exposed to direct fire impacts and to power disruption.

4.2.1.4 Non-Critical Facilities

Schools, parks, commercial centers, and recreational amenities near WUI zones remain highly exposed to wildfire smoke, ash fall, and potential evacuation needs. Saugus High School, Golden Valley High School, and Canyon High School have experienced wildfire-related closures. Trail networks in Placerita Canyon, Iron Canyon, Elsmere Canyon, and East Walker Ranch are routinely closed during Red Flag events. Many residential HOA recreation facilities in high-fire-risk neighborhoods lack backup power for filtration systems, increasing exposure to poor air quality during major fire events, when PM2.5 concentrations can exceed 150 to 300 $\mu g/m^3$.

4.2.1.5 Environmental Impacts

Wildfire impacts extend significantly into ecological and watershed systems. Loss of native chaparral, oak woodland, and riparian habitat increases ecological stress and enables invasive grasses such as cheatgrass and mustard to spread, thereby elevating fuel continuity. Burn scars in San Francisquito, Placerita, and Bouquet Canyons create elevated post-fire erosion and sedimentation risks, which affect the Santa Clara River and its tributaries. Debris flows become more likely during intense rainfall, particularly atmospheric river events that follow large fires. Wildfire also disrupts wildlife corridors in the Santa Susana Mountains and Sierra Pelona foothills and contributes to declines in water quality due to ash and sediment loading in downstream areas.

4.2.1.6 Changes in Development Since Last Approved Plan

Development Trends: Since adoption of the 2021 LHMP, new residential and mixed-use construction has continued in and around the Santa Clarita Valley near WUI areas, including Vista Canyon, Skyline Ranch, the Plum Canyon corridor, and nearby Valencia expansion areas associated with FivePoint. While portions of the Valencia expansion area are outside City limits, growth in these areas remains relevant to Santa Clarita because it can influence regional evacuation routes, traffic demand, emergency response coordination, infrastructure interdependencies, and wildfire exposure along shared open space and transportation corridors. These communities incorporate modern fire measures, yet their proximity to high-risk open space increases overall exposure. Industrial and energy-storage development in Canyon Country has also expanded in areas with elevated fire risk and potential smoke-related power disruptions.

Land Use and Zoning: The General Plan Safety Element identifies extensive Very High Fire Hazard Severity Zones across the City's perimeter and canyon regions. Development in hillside areas requires compliance with the Hillside Development Ordinance, which mandates geotechnical review, emergency access standards, and ongoing fuel modification. The Open Space Preservation District maintains more than 9,000 acres of buffer land, much of which lies within high-risk fire ecology zones and requires active vegetation management. Although zoning in many WUI-adjacent areas emphasizes low- and medium-density residential uses, cumulative exposure and evacuation capacity remain concerns as development progresses.

Population Shifts: Overall population growth in Santa Clarita has stabilized at approximately 229,000 residents, but exposure has increased as residential development expands into foothill and canyon locations. Higher housing densities in portions of Canyon Country and Newhall have increased the number of residents living in areas with elevated smoke and evacuation vulnerability. Recreational use of canyon open spaces has also increased, exposing more individuals to ignition hazards and fast-changing fire conditions.

4.2.1.7 Impacts on Vulnerable Populations

Low-Income Residents: Low-income households, representing approximately 7.4 percent of residents, face disproportionate wildfire impacts due to limited financial means for evacuation, temporary lodging, home hardening, or recovery. Older housing stock in Newhall and portions of Canyon Country may lack ignition-resistant construction or adequate defensible space.

Elderly Individuals: Older adults, comprising roughly 13.1 percent of the population, face mobility constraints during rapid evacuation and may rely on electric-powered medical devices that are vulnerable to PSPS events or wildfire-related outages. Exposure to PM2.5 from smoke significantly increases cardiopulmonary health risks.

Minority Communities: Minority and linguistically isolated residents – including approximately 36 percent Hispanic or Latino and 11 percent Asian communities – may encounter barriers accessing evacuation and emergency information unless alerts are multilingual and culturally accessible. This means providing timely warnings in plain language, using Spanish and other commonly spoken languages where appropriate, avoiding technical terminology, and distributing information through trusted channels such as Alert LA County, ReadyLA, City communication platforms, schools, community-serving organizations, faith-based partners, neighborhood groups, and business associations.

Unhoused Individuals: The 2023 point-in-time count documented 287 unhoused individuals, many of whom shelter in the Santa Clara River corridor or in open spaces near SR-14, Railroad Avenue, and Magic Mountain Parkway. These locations are exposed to fire ignition sources and dense smoke. Unhoused residents often lack transportation for evacuation, quick access to clean-air shelters, and medical services to mitigate severe respiratory impacts.

4.2.2 Power Outage

4.2.2.1 Overall Vulnerability and Impact

Santa Clarita is highly vulnerable to both planned and unplanned power outages due to its dependence on a regional electrical grid that is regularly stressed by extreme heat, wildfire conditions, and aging transmission infrastructure. Southern California Edison (SCE) operates multiple overhead distribution and transmission lines that traverse high-fire-risk canyons, meaning Public Safety Power Shutoff (PSPS) events are increasingly common during Red Flag conditions. Outages can last from several hours to multiple days, particularly in high-wind corridors such as Sand Canyon, Placerita Canyon, and the Newhall Pass. Extreme heat events, which have doubled in frequency across Los Angeles County since the mid-20th century, place substantial demands on the grid and increase the likelihood of load-shedding or equipment failure. Power outages disrupt essential services, hinder communication, increase heat-related health risks, and can delay emergency response. For residents who rely on electrically powered medical or life-support equipment, power outages can create immediate life-safety risks. Extended outages may also disrupt communication with caregivers, access to telehealth, elevator access in multi-story buildings, and transportation to medical facilities.

4.2.2.2 Population

Virtually all residents are exposed to the potential for electrical outages; however, risk is highest in neighborhoods located near WUI areas and in hillside communities where SCE infrastructure is more likely to be de-energized during fire-weather events. Canyon Country, Sand Canyon, Placerita Canyon, and portions of Saugus and Newhall experience more frequent PSPS events as they lie within circuits classified as elevated wildfire threat zones. Residents in multi-story apartment buildings and older housing are particularly affected due to reliance on electric cooling systems and limited access to backup power. During the September 2022 heatwave, parts of Santa Clarita experienced rolling outages and grid strain that coincided with temperatures exceeding 110°F, demonstrating the compounding nature of heat and electrical system demand.

Southern California Edison has continued grid-hardening efforts in and around high-fire-threat areas, including vegetation management, covered conductor installation, sectionalizing equipment, targeted undergrounding or system upgrades where feasible, and other measures intended to reduce ignition risk and improve reliability. These improvements reduce some outage and wildfire-ignition risks, but they do not eliminate the potential for Public Safety Power Shutoffs, equipment failures, or service disruptions during extreme weather

4.2.2.3 Critical Facilities

Critical facilities throughout Santa Clarita depend on uninterrupted electrical service to maintain emergency operations. Fire stations, law enforcement facilities, emergency operations centers, and 9-1-1 communication systems rely on backup generators but remain vulnerable to fuel shortages or mechanical failure during extended outages. SCV Water facilities – including treatment plants, booster stations, and storage tanks – require stable power to maintain system pressure, fire flow, and water quality. While most sites have backup generation capacity, prolonged PSPS events can reduce redundancy and increase operational strain. Hospitals, urgent care centers, and skilled nursing facilities also depend on continuous power for life-support systems and refrigeration of medical supplies. Telecommunications towers positioned on ridgelines are particularly exposed to outages because backup batteries may last only four to eight hours without generator support.

4.2.2.4 Non-Critical Facilities

Schools, commercial centers, community centers, and residential complexes are heavily impacted by outages, especially during extreme heat or wildfire smoke events when indoor cooling and air filtration are essential. Schools across Santa Clarita, including Hart District campuses, have temporarily closed or shifted operations during outage events or grid strain periods. Retail centers and neighborhood-serving businesses experience loss of operations, spoiled inventory, and service disruptions. Multi-family residences lose elevator access, indoor cooling, and lighting, which disproportionately impacts seniors and individuals with mobility impairments. Traffic signals without battery backup create congestion and safety hazards on major corridors such as McBean Parkway, Bouquet Canyon Road, Soledad Canyon Road, and Sierra Highway.

4.2.2.5 Environment

Power outages indirectly affect environmental systems by limiting the ability to manage water distribution, groundwater pumps, and air-quality filtration systems. During wildfire smoke events, indoor air quality deteriorates quickly without powered filtration, exacerbating health impacts. Extended outages at SCV Water facilities may impact water pressure, which can hinder firefighting if outages coincide with wildfire events. Increased reliance on portable generators during outages contributes to local air pollution and greenhouse gas emissions. Wastewater and stormwater systems, while generally gravity-fed, may experience localized challenges if pump stations lose power for prolonged periods.

4.2.2.6 Changes in Development Since Last Approved Plan

Development Trends: Residential growth has continued in WUI-adjacent areas where PSPS events are most frequent, including Vista Canyon, Skyline Ranch, and the FivePoint Valencia developments. These communities incorporate modern electrical systems but remain tied to the same transmission corridors serving canyon regions. Commercial and light industrial development in Canyon Country and along the SR-14 corridor has increased power demand, particularly for facilities requiring climate control, refrigeration, or continuous operations. The expansion of home-based work since the COVID-19 pandemic has also increased the consequences of outages on economic productivity and service access.

Land Use and Zoning: Santa Clarita's land use pattern includes substantial hillside and open space areas that overlap with SCE's high wildfire threat circuits. Zoning in these areas restricts density but does not eliminate exposure to de-energization during Red Flag events. The General Plan's emphasis on mixed-use development and increased density near transit corridors supports resilience in some respects, but many of these areas still rely on electrified cooling and transportation systems that are vulnerable during power interruptions. The City continues to encourage solar and battery storage adoption; however, penetration rates remain uneven across neighborhoods and housing types.

Population Shifts: While overall population growth has stabilized, more residents now live in newer developments at the urban fringe where wildfire-weather-related outages are more common. There has also been growth in multi-family housing in Newhall and Canyon Country, where residents may have limited access to backup power or cooling alternatives during outages. The City's aging population, coupled with increased prevalence of medically vulnerable individuals, heightens overall sensitivity to electrical disruptions.

4.2.2.7 Impacts on Vulnerable Populations

Low-Income Residents: Low-income households, many of whom reside in older multi-family buildings in Newhall and Canyon Country, experience greater hardship during outages because they often lack access to air conditioning alternatives, independent power supplies, or temporary relocation options. Food spoilage, loss of income, and the inability to charge phones or access online services compound recovery challenges.

Elderly Individuals: Elderly adults face significant risks during electrical outages due to heat sensitivity, reliance on electrically powered medical equipment, and limited mobility during evacuation or access to cooling centers. Assisted living facilities typically possess backup generators, but outages lasting more than 24 to 48 hours strain operations and require continuous fuel resupply.

Minority Communities: Minority and linguistically isolated communities, particularly Hispanic and Asian populations in Canyon Country and Newhall, may experience challenges accessing outage notifications, PSPS alerts, and emergency cooling resources unless messaging is provided in multiple languages. Many residents work in occupations that lack the flexibility to adjust to outage-related disruptions, increasing household and economic vulnerability.

Unhoused Individuals: Unhoused residents, concentrated in the Santa Clara River corridor and areas adjacent to transit and commercial zones, face extreme exposure during power outages, particularly during heatwaves when cooling and hydration resources rely on electrical supply. Access to information regarding shelter availability, cooling centers, and health risks becomes more difficult without functioning public lighting, charging stations, or transportation services. Outreach teams play a critical role in connecting individuals to services during outage events.

4.2.3 Extreme Heat

4.2.3.1 Overall Vulnerability and Impact

Extreme heat is an increasingly significant hazard for Santa Clarita, which experiences some of the highest inland temperatures in Los Angeles County. The City regularly exceeds 100°F during summer, and heatwaves have grown more frequent, longer in duration, and more intense. According to California's Fourth Climate Change Assessment, inland Southern California could experience 3–5 times more extreme heat days by mid-century, and Santa Clarita already recorded temperatures above 110°F during the September 2022 heatwave. Heat contributes to elevated energy demand, worsened air quality, and heightened public health impacts, particularly for residents without reliable cooling. The Santa Clarita Valley's topography – surrounded by the Santa Susana Mountains and Sierra Pelona – creates reduced coastal influence and nighttime heat relief, extending heat stress risk. Extreme heat exacerbates wildfire risk, reduces water supply reliability, and strains electrical and transportation infrastructure, making it a multi-system hazard with cascading impacts.

4.2.3.2 Population

All 229,000 residents of Santa Clarita are exposed to extreme heat, but exposure is disproportionately higher in neighborhoods with limited shade, older housing stock, or high-density development. Canyon Country, Newhall, and portions of Saugus experience higher urban heat island effects due to expanses of asphalt, limited tree canopy, and smaller dwelling units that heat rapidly. Children, outdoor workers, and individuals with health conditions experience higher physiological stress during prolonged heat events. School closures, suspended outdoor activities, and increased medical calls rise significantly during heat emergencies. Residents who rely on air conditioning experience financial strain due to increased utility costs, while those without adequate cooling face heightened health risks.

4.2.3.3 Critical Facilities

Emergency services, hospitals, SCV Water facilities, and cooling centers all require reliable power to operate effectively during extreme heat conditions. Henry Mayo Newhall Hospital experiences increased heat-related medical visits, particularly among older adults and individuals with cardiovascular issues. SCV Water's treatment and distribution systems require additional energy for pumping during hot periods, increasing operational costs and straining backup systems. Fire stations and law enforcement facilities rely on sustained power and the ability to maintain indoor temperatures for staff readiness. Schools and community centers serving as cooling locations depend on HVAC systems that may be vulnerable during power outages or grid strain.

4.2.3.4 Non-Critical Facilities

Schools, parks, transit stops, and residential complexes experience significant impacts during extreme heat. Many playgrounds and athletic fields become unusable during high-temperature periods, reducing outdoor recreational opportunities and increasing indoor occupancy. Transit users along corridors such as Soledad Canyon Road, Railroad Avenue, and McBean Parkway often wait in unshaded locations, elevating risk for heat exhaustion. Older multifamily buildings in Newhall and portions of Canyon Country may lack modern insulation or efficient air conditioning, causing indoor temperatures to rise to unsafe levels. Community-serving businesses experience increased cooling costs, and outdoor labor sectors – including landscaping, construction, and service work – face rising occupational safety challenges.

4.2.3.5 Environment

Extreme heat stresses local ecosystems, accelerates vegetation drying, and increases the probability of wildfire ignition and spread. Prolonged heatwave conditions reduce soil moisture, weaken drought-sensitive trees, and intensify pest activity such as bark beetle infestations. High temperatures degrade air quality by increasing ozone formation, particularly during stagnant atmospheric conditions. Heat amplifies water demand across residential, commercial, and agricultural sectors, placing pressure on SCV Water supply during periods of low precipitation. Aquatic habitats in the Santa Clara River and adjacent tributaries experience temperature increases that reduce native species resilience. Heat also accelerates evaporation in local reservoirs and detention basins, reducing water retention capacity over time.

4.2.3.6 Changes in Development Since Last Approved Plan

Development Trends: Growth in and around the Santa Clarita Valley, including Tesoro Highlands and other hillside or master-planned development areas, may increase overall demand for cooling, emergency services, transportation capacity, and utility reliability during extreme heat and outage events. Even where development occurs outside City limits, regional growth can affect Santa Clarita through shared roadways, utility systems, air quality conditions, and emergency response coordination. While newer housing is generally more energy efficient, these developments often include extensive hardscape surfaces that elevate localized heat retention unless offset by shade trees or reflective materials. Commercial development in Canyon Country and along the SR-14 corridor has expanded building footprints and increased cooling demand, placing additional stress on the electrical grid during peak periods. Growth in home-based work has also increased dependence on indoor cooling and electricity during daytime hours

Land Use and Zoning: Santa Clarita's zoning structure continues to support mixed-use and medium-density development near transit corridors, which can reduce vehicle miles traveled but may increase exposure for residents living in heat-prone areas with limited shade cover. Industrial zones in Canyon Country and the northern Saugus foothills often have minimal vegetation, intensifying heat island effects. The Open Space Preservation District and hillside ordinances help protect natural lands that can offer cooling benefits; however, as development advances toward WUI areas, shade and cooling elements must be intentionally integrated into site designs. The General Plan's Sustainability goals promote tree canopy expansion and reflective roofing, but implementation varies by neighborhood.

Population Trends: Low-income households often live in older apartments or single-family homes lacking efficient cooling systems, making indoor temperatures dangerously high during heatwaves. Higher utility costs during extreme heat disproportionately burden these households, and many cannot afford to run air conditioning consistently. Households without reliable transportation face additional challenges accessing cooling centers. During the 2022 heatwave, emergency call volumes increased in several low-income neighborhoods where indoor temperatures exceeded 90°F.

4.2.3.7 Impacts on Vulnerable Populations

Low-Income Residents: Low-income households often live in older apartments or single-family homes lacking efficient cooling systems, making indoor temperatures dangerously high during heatwaves. Higher utility costs during extreme heat disproportionately burden these households, and many cannot afford to run air conditioning consistently. Households without reliable transportation face additional challenges accessing cooling centers. During the 2022 heatwave, emergency call volumes increased in several low-income neighborhoods where indoor temperatures exceeded 90°F.

Elderly Individuals: Older adults face heightened physiological vulnerability to extreme heat, including increased risk of dehydration, cardiovascular stress, and heat stroke. Many rely on air conditioning, medical equipment, and medications that are affected by temperature fluctuations. Mobility limitations reduce their ability to travel to cooling centers or seek medical assistance during emergencies. Prolonged nighttime heat, increasingly common in the region, prevents adequate cooling and increases mortality risk among elderly residents.

Minority Communities: Minority communities, including Santa Clarita's Hispanic and Asian populations, often reside in areas where tree canopy coverage is lower and multifamily housing is more common. Occupational exposure is higher among workers in landscaping, outdoor maintenance, construction, and service industries. Linguistically isolated households may also face delays accessing heat emergency notifications and information about available cooling centers or health risks. Cultural norms regarding energy use may influence reliance on cooling systems during high-cost periods.

Unhoused Individuals: Unhoused individuals – primarily located within the Santa Clara River corridor, along Railroad Avenue, and near commercial districts – experience severe exposure during extreme heat events, often without access to shade, hydration, or medical care. Heat-related illness among unhoused populations increases sharply during prolonged heatwaves. Limited access to water, sanitation, and transportation prevents individuals from reaching cooling centers, while the lack of nighttime shelter during warm nights significantly increases health risks. Outreach teams provide hydration and wellness checks, but service demand typically exceeds available capacity during peak heat periods.

4.2.4 Earthquake

4.2.4.1 Overall Vulnerability and Impact

Santa Clarita is highly vulnerable to earthquake hazards due to its proximity to several major regional faults, including the San Andreas Fault (approximately 12 miles northeast), the Santa Susana Fault, the Sierra Madre Fault system, the San Gabriel Fault, and the Ridge Basin Fault, all of which are capable of generating strong ground shaking. The San Andreas Fault remains the most significant seismic threat, with the USGS estimating a ~19% probability of a magnitude 7.5 or greater event on the southern segment within the next 30 years. Santa Clarita's basin geometry and underlying alluvium can amplify shaking intensity in areas such as the Santa Clara River Valley and lower-lying neighborhoods of Canyon Country and Newhall. A major regional earthquake could cause widespread structural damage, utility disruption, road closures, landslides, and long-term displacement. Secondary hazards including liquefaction, surface fault rupture, rockfall, and fire following earthquake further increase the City's vulnerability. Given the density of housing, schools, and commercial development across the valley, a significant earthquake event has the potential to affect every sector of the community simultaneously.

4.2.4.2 Population

All 232,833 residents of Santa Clarita are exposed to strong ground shaking. The highest concentrations of at-risk populations reside in older neighborhoods in Newhall, portions of Saugus, and Canyon Country where pre-1980 housing stock may not fully meet current seismic standards. Multi-story apartment buildings, mobile home parks, and older commercial structures are particularly vulnerable to damage. Neighborhoods situated on soft soils or alluvial deposits – especially in the Santa Clara River corridor – may experience amplified shaking and possible liquefaction. Residents living in hillside areas are susceptible to rockfall and slope failure, especially along Placerita Canyon Road, Sand Canyon, and the slopes bordering SR-14.

4.2.4.3 Critical Facilities

Essential services throughout the City depend on maintaining structural integrity and operational capacity during and after an earthquake. Henry Mayo Newhall Hospital plays a central role in disaster response and must remain functional despite strong shaking; while retrofitted to meet seismic compliance, it remains highly dependent on continued power, water, and transportation access. SCV Water facilities – including treatment plants, pump stations, and major transmission lines – are highly vulnerable to pipeline rupture, tank damage, and system depressurization. SCV Water operates several critical crossings of the Santa Clara River, where liquefaction and lateral spreading may occur during a large event. Fire stations, sheriff's substations, and the Emergency Operations Center must withstand shaking to coordinate emergency response; however, localized structural damage or access road failure could temporarily isolate some facilities. Power transmission lines, substations, and communication towers in hillside areas may sustain significant damage due to shaking, rockfall, or ground displacement.

4.2.4.4 Non-Critical Facilities

Schools, libraries, parks, residential complexes, and commercial buildings are all susceptible to earthquake damage. While most structures built after the mid-1990s adhere to strict seismic codes, older unreinforced masonry buildings (URMs), soft-story residential complexes, and older tilt-up commercial structures represent ongoing vulnerabilities. School campuses may sustain nonstructural damage – such as ceiling collapses, broken windows, or equipment displacement – that can force closures for days or weeks following an event. Retail corridors along Lyons Avenue, Soledad Canyon Road, and Bouquet Canyon Road contain structures of varying ages and construction types, resulting in different damage profiles. Multi-family housing, especially in older Newhall and Canyon Country neighborhoods, may experience significant habitability issues following moderate shaking, increasing displacement risks.

4.2.4.5 Environment

Earthquakes have the potential to trigger landslides in hillside areas, including the slopes above Placerita Canyon, Soledad Canyon, and the San Francisquito Canyon watershed. Landslides and rockfall can block roadways, disrupt emergency access, and damage water and power infrastructure. Ground rupture or shaking near the Santa Clara River may destabilize banks, damage bridges, and compromise habitat areas. A major earthquake could also lead to hazardous materials releases from industrial sites in the Valencia Industrial Center and along Railroad Avenue. Wildfires ignited by ruptured gas lines or electrical failures represent a significant secondary hazard, especially during dry and windy weather conditions. Post-earthquake debris, dust, and sedimentation may affect water quality in the Santa Clara River and tributaries.

4.2.4.6 Changes in Development Since Last Approved Plan

Development Trends: Recent and planned development in and around the Santa Clarita Valley, including Tesoro Highlands and other hillside or master-planned growth areas, increases the number of residents, structures, roads, and utility connections that may be exposed to seismic shaking. Newer development is generally constructed to current building and seismic standards, which reduces structural vulnerability compared with older buildings; however, regional growth can still increase post-earthquake demands on evacuation routes, emergency response, water systems, power infrastructure, and mutual aid resources.

Land Use and Zoning: The City's land use patterns place significant residential and commercial development within areas subject to amplified ground shaking, particularly near the Santa Clara River Valley. The Hillside Development Ordinance regulates construction on steep slopes but does not eliminate earthquake-induced landslide risk. Industrial areas in Valencia contain older structures built prior to current seismic standards, presenting retrofit challenges. The zoning framework encourages infill near transit corridors and mixed-use development, which can enhance resilience if constructed to modern standards; however, increased density also raises the stakes for potential casualties and displacement. The Safety Element requires geotechnical studies for developments in liquefaction or landslide-prone areas, but ongoing redevelopment of older neighborhoods may still face seismic vulnerabilities.

Population Shifts: Although Santa Clarita's population growth has slowed, demographic shifts influence seismic vulnerability. A rising number of older adults increases medical and mobility-related challenges during post-earthquake evacuation and recovery. Older multifamily housing and rental properties in portions of Newhall and Canyon Country may increase displacement risk after a major earthquake, particularly where buildings predate current seismic standards or where residents have limited resources to secure temporary housing. Newer multifamily development constructed to current code may be less structurally vulnerable, but higher residential density can increase the number of residents requiring shelter, transportation assistance, or recovery support following a damaging earthquake.

4.2.4.7 Impacts on Vulnerable Populations

Low-Income Residents: Low-income households, many of which occupy older apartments and mobile homes, are among the most vulnerable to earthquake damage. Older buildings may lack seismic retrofits, increasing the likelihood of structural failure and prolonged displacement. Limited financial resources hinder the ability to repair damage, replace lost belongings, or secure temporary housing. Access to earthquake insurance is also lower in these communities, prolonging recovery timelines.

Elderly Individuals: Elderly residents face heightened risk due to mobility limitations, dependence on medical equipment, and increased likelihood of injury from falling objects or structural collapse. Many older adults live alone in older housing units where unsecured furniture, inadequate bracing, and outdated structural systems elevate risk. Disruptions to power, water, and transportation services disproportionately affect this population, especially if shelters or assistance sites are difficult to reach.

Minority Communities: Minority and linguistically isolated communities may experience challenges receiving and understanding emergency information immediately following an earthquake, particularly if electronic communication systems fail. Many work in occupations or live in housing types with elevated seismic risk. Cultural or linguistic barriers can delay access to emergency aid, damage assessments, or recovery assistance. Concentrations of minority households in older portions of Newhall and Canyon Country also increase exposure to buildings with lower seismic resistance.

Unhoused Individuals: Unhoused individuals, who reside primarily in the Santa Clara River corridor and transitional areas near Railroad Avenue and SR-14, face direct threats from falling debris, bridge damage, and loss of encampment stability during strong shaking. They also face heightened risk from secondary hazards such as fires, hazardous materials releases, and landslides. Lack of reliable communication, transportation, or shelter access makes it difficult for unhoused residents to receive assistance, and debris-blocked areas may further isolate encampments. Post-earthquake shelter capacity challenges may limit available resources for individuals already experiencing homelessness.

4.2.5 High Wind/Storms

4.2.5.1 Overall Vulnerability and Impact

Santa Clarita is highly vulnerable to high wind events – particularly Santa Ana winds, which can exceed 60 to 80 mph in canyon areas – and to winter storms capable of producing heavy rainfall, localized flooding, and storm-related damage. The region's topography channels strong winds through Newhall Pass, Soledad Canyon, and Bouquet Canyon, creating hazardous conditions for transportation, utilities, and structures. High winds frequently topple trees, damage roofs, down power lines, and ignite or accelerate wildfires when conditions are dry. Winter storms associated with atmospheric rivers can deliver significant short-duration rainfall, producing roadway flooding, slope failures, and increased runoff, especially following wildfire burn scars. These events cause widespread service disruptions, impede emergency response, and pose substantial risks to residents in hillside neighborhoods, travelers on major highways, and communities located downstream of steep drainage basins.

4.2.5.2 Population

All residents of Santa Clarita are exposed to high wind and storm hazards, though impacts vary considerably based on location and housing type. Communities situated along canyon corridors – including Placerita Canyon, Sand Canyon, Soledad Canyon, and areas near the Newhall Pass, as well as communities just outside of City limits such as Tesoro Highlands – experience some of the strongest gusts and the highest frequency of wind-related outages. Residents in older homes or manufactured housing units face greater risk of structural damage, while households in dense urban areas experience more frequent treefall and debris hazards during storms. Winter storms can also affect mobility for tens of thousands of commuters who rely on Interstate 5, State Route 14, Newhall Ranch Road, and Soledad Canyon Road, as heavy rain and wind often slow traffic or close lanes.

4.2.5.3 Critical Facilities

High winds and storms pose serious risks to the City's critical infrastructure. Power lines and transmission towers operated by Southern California Edison are particularly susceptible to damage during windstorms, which can trigger extended outages or PSPS events. SCV Water relies on electric-powered pump stations and treatment plants that may be disrupted by wind-related outages or storm-related debris flows. Henry Mayo Newhall Hospital must maintain uninterrupted operations despite wind or storm damage to surrounding infrastructure, and ambulance and fire response can be slowed when fallen trees or flooded roads block access.

Communication towers on elevated ridgelines are vulnerable to both wind damage and power interruption, potentially affecting public communication and emergency notification systems.

4.2.5.4 Non-Critical Facilities

Schools, parks, libraries, shopping centers, and residential complexes are routinely affected by high winds and storms. Strong gusts can damage roofing materials, awnings, solar panels, and outdoor equipment, while storm events often lead to temporary closures of sports fields, trails, and playgrounds. Many schools in Santa Clarita have experienced wind-related safety concerns or early dismissals when strong winds down trees or power lines near campuses. Multi-family buildings and aging commercial properties may sustain façade damage or leak during intense rainfall. Roadway flooding in low-lying areas such as sections of Soledad Canyon Road, Bouquet Canyon Road, and McBean Parkway increases traffic hazards, and intersections without functioning signals during storms elevate collision risk.

4.2.5.5 Environment

High winds can accelerate soil erosion, spread debris, and cause significant tree loss across open space areas and urban canopies. Storms, especially those following wildfire burn scars, increase sedimentation in the Santa Clara River and its tributaries, reducing water quality and stressing aquatic habitats. Post-fire drainages such as San Francisquito Canyon, Placerita Canyon, and Bouquet Canyon are particularly prone to debris flows during intense rainfall, which can damage habitat, impact wildlife corridors, and overwhelm culverts and stormwater infrastructure. Strong winds also disperse dust and particulate matter, degrading air quality and contributing to respiratory health issues.

4.2.5.6 Changes in Development Since Last Approved Plan

Development Trends: Recent residential and commercial development in foothill and canyon-adjacent areas – including Skyline Ranch, Plum Canyon, and several Valencia expansion projects – has increased the number of structures and residents exposed to strong winds and storm runoff. While modern codes incorporate enhanced wind resistance, overall exposure has expanded as more homes are built along ridges and open space interfaces. New commercial development along Magic Mountain Parkway and Newhall Ranch Road increases impervious surface area, thereby raising stormwater runoff during major rainfall events. The growing use of rooftop solar panels and shade structures across residential communities also introduces new vulnerabilities during high-wind events if installations are not adequately anchored.

Land Use and Zoning: Santa Clarita's zoning includes extensive hillside development areas where steep slopes and ridgelines amplify wind speeds and increase slope instability during storms. The City's Hillside Development Ordinance includes requirements for grading, drainage, slope protection, and site design in hillside areas. These requirements help reduce hazard exposure in steep terrain, although intense storms, high winds, and post-fire conditions can still exceed localized drainage or slope-stability assumptions. Industrial and commercial zones with large flat-roof buildings are susceptible to wind uplift and localized flooding around loading bays or expansive parking areas. Open space preservation requirements help maintain natural buffers, but ongoing development near canyon mouths and alluvial fans continues to place new structures in areas where wind and storm impacts are historically concentrated.

Population Shifts: Shifts toward higher-density housing in Newhall and Canyon Country mean more residents now live-in areas where wind-related outages and storm-driven flooding are recurrent issues. As the population ages, more individuals require uninterrupted power for medical equipment or climate control, increasing vulnerability during windstorms that cause extended power interruptions. Growth in outdoor recreation and trail use has also placed more people in open space areas during high-wind seasons, increasing exposure to falling branches and debris.

4.2.5.7 Impacts on Vulnerable Populations

Low-Income Residents: Low-income households are disproportionately affected by high wind and storm events due to the prevalence of older housing, limited resources for home maintenance, and constrained ability to repair storm or wind damage. Roof leaks, damaged carports, and temporary loss of power or heat have greater financial implications for households with limited savings. Many low-income renters also lack control over structural improvements that could reduce damage from wind or water intrusion.

Elderly Individuals: Older adults face heightened vulnerability due to mobility limitations during storm-related outages, reduced ability to clear debris or secure outdoor property, and increased health risks associated with cold indoor temperatures during winter storms. Those reliant on powered medical devices face life-safety risks when winds cause extended power interruptions. Limited transportation options may delay access to medical services or warming centers.

Minority Communities: Minority and linguistically isolated residents may experience challenges accessing emergency information when winds or storms disrupt communication networks, especially if alerts are issued only in English or require digital access. Many individuals in these communities work in outdoor or transportation-related jobs that face heightened danger during high-wind events. Housing inequities also mean minority communities are more likely to live in older multifamily buildings that are vulnerable to water intrusion or roof damage during storms.

Unhoused Individuals: Unhoused residents face severe exposure during high-wind and storm events, particularly those living in the Santa Clara River corridor, near bus stops, or on vacant parcels. High winds can destroy temporary shelters, uproot encampments, and increase the risk of falling branches or debris. Storms create hazardous, fast-moving runoff in riverbeds and culverts, often requiring emergency evacuations of encampments.

4.2.6 Air Quality

4.2.6.1 Overall Vulnerability and Impact

Santa Clarita faces persistent and episodic air quality challenges driven by regional pollution, transportation emissions, and increasingly severe wildfire smoke events. The City is located within the South Coast Air Basin, one of the most polluted air basins in the United States and routinely exceeds federal and state standards for ozone and PM2.5. Hot, stagnant summer conditions accelerate ozone formation, while wildfire smoke has become a dominant driver of hazardous particulate matter levels. During major fires in the Santa Clarita Valley or surrounding counties – such as the 2016 Sand Fire, the 2019 Tick Fire, and the 2020 Southern California wildfire complex – PM2.5 concentrations have exceeded 150–300 $\mu g/m^3$, well above the "hazardous" threshold. Poor air quality reduces visibility, increases respiratory and cardiovascular hospitalizations, limits outdoor activity, and disproportionately affects sensitive populations. With climate change increasing the frequency of extreme heat, drought, and wildfire conditions, Santa Clarita's long-term exposure to degraded air quality is expected to worsen.

4.2.6.2 Population

All Santa Clarita residents are exposed to air quality hazards, but exposure levels vary by season, topography, and neighborhood characteristics. During wildfire events, smoke travels along canyon corridors such as Soledad Canyon, Placerita Canyon, and San Francisquito Canyon, concentrating particulate matter in adjacent residential areas and across the Santa Clarita River Valley. Communities situated near major transportation corridors – including I-5, SR-14, Railroad Avenue, and Soledad Canyon Road – experience higher chronic exposure to vehicle-related pollutants such as NO_2 and diesel particulates. Children, individuals with asthma, and older adults are particularly susceptible to health impacts. Schools and parks located in lower elevation zones within the valley may accumulate stagnant air during high-pressure heat events, exacerbating exposure.

4.2.6.3 Critical Facilities

Healthcare, emergency response, and utility infrastructure are heavily impacted by poor air quality. Henry Mayo Newhall Hospital typically reports increased respiratory cases during wildfire smoke episodes, placing strain on emergency and urgent care operations. Fire stations and sheriff's substations must continue operating outdoors despite harmful particulate levels, exposing staff to prolonged inhalation risks. SCV Water treatment facilities can experience reduced operational comfort and increased staff exposure during smoky conditions, and air intake systems must filter smoke to maintain indoor air quality. Communication towers, electrical

substations, and transportation facilities remain vulnerable to visibility reductions and smoke infiltration that can affect sensitive equipment.

4.2.6.4 Non-Critical Facilities

Schools, parks, libraries, and commercial centers experience operational disruptions during poor air quality events. Outdoor school activities are frequently cancelled during wildfire smoke episodes, and some campuses may temporarily close when PM2.5 levels exceed health thresholds. Retail centers and workplaces experience reduced foot traffic during prolonged smoke events. Multi-family housing complexes lacking modern HVAC filtration systems may see indoor PM levels approaching outdoor PM levels, reducing habitability for vulnerable residents. Recreational facilities – particularly those along the Santa Clara River corridor – often close during high-smoke periods, restricting community access to outdoor spaces.

4.2.6.5 Environment

Air quality degradation has significant ecological effects, including deposition of ash and particulate matter on vegetation, soil, and water bodies. Wildfire smoke contributes to acidification and nutrient loading in the Santa Clara River, which can affect aquatic species and riparian vegetation. Ozone stress weakens trees and shrubs in open space preserves, contributing to reduced growth and increased susceptibility to pests such as bark beetles. Fine particulates settle on soil surfaces, altering infiltration rates and reducing soil health. Periods of low visibility caused by heavy smoke affect wildlife movement and disrupt natural behaviors.

4.2.6.6 Changes in Development Since Last Approved Plan

Development Trends: New residential growth in Skyline Ranch, Plum Canyon, Vista Canyon, and FivePoint Valencia, as well as developments such as Tesoro Highlands outside of City limits, has increased the number of people living near canyon corridors where wildfire smoke tends to accumulate. Even where development occurs outside City limits, regional growth can affect Santa Clarita through shared transportation corridors, air basin conditions, emergency access routes, and increased demand for clean-air messaging and sheltering resources. Although newer homes often include energy-efficient HVAC systems, not all incorporate high-grade filtration capable of removing fine particulates. Increased commercial development near I-5 and SR-14 has expanded exposure to traffic-related emissions for workers and customers. Growth in outdoor-oriented amenities has also placed more residents into environments where air quality risks are heightened during wildfire season.

Land Use and Zoning: Santa Clarita's land use framework places a significant portion of residential and commercial development within the valley floor, where atmospheric inversion layers can trap ozone and particulate matter during summer and wildfire season. Zoning patterns near major transportation corridors contribute to persistent air quality exposure for residents in multifamily housing, senior complexes, and mobile home parks. Open space preservation supports natural buffers that improve long-term air quality, but wildfire risk in these areas increases episodic smoke exposure. Industrial zones are generally located away from dense residential neighborhoods, but emissions from freight corridors and commercial delivery fleets remain an ongoing concern.

Population Shifts: Recent demographic trends include growth in families with young children, older adults, and residents with preexisting health conditions who face heighted sensitivity to ozone and PM2.5. Increasing density in Newhall, Canyon Country, and central Santa Clarita places more people in older housing stock with less effective air filtration. Economic shifts since 2020 have led to more residents working from home, increasing prolonged daily exposure to indoor air quality conditions tied to outdoor pollution levels. As temperatures rise due to climate change, ozone formation is expected to intensify, expanding the number of days per year when air quality poses health risks.

4.2.6.7 Impacts on Vulnerable Populations

Low-Income Residents: Low-income households frequently lack access to high-grade air filtration, indoor cooling, or the ability to remain indoors for prolonged periods during smoke or ozone events. Many reside in older buildings with leaky windows or limited HVAC capacity, allowing particulate matter to infiltrate. Economic constraints may limit their ability to purchase air purifiers, replace filters, or temporarily relocate during severe smoke events. Outdoor workers in low-wage positions experience heightened exposure and may lack employer-provided protective equipment.

Elderly Individuals: Older adults experience the highest rates of hospitalization and mortality during poor air quality episodes due to cardiovascular and respiratory vulnerabilities. Many depend on medications or oxygen concentrators that require stable indoor air quality, and prolonged exposure to particulate matter increases risks of complications. Elderly residents living alone may be unaware of air quality advisories or unable to reach clean-air shelters without assistance.

Minority Communities: Minority communities – particularly Hispanic and Asian residents in Canyon Country and Newhall – are disproportionately exposed due to higher rates of residence near transportation corridors and in older multifamily buildings. Language barriers may reduce timely access to air quality alerts, and cultural norms around outdoor work or household ventilation can increase exposure. Many individuals in these communities hold jobs in warehousing, construction, landscaping, and service sectors – occupations with elevated outdoor exposure during smoky or high-ozone conditions.

Unhoused Individuals: Unhoused individuals experience the most direct exposure to poor air quality because they lack indoor environments with filtration. Those living in the Santa Clara River corridor and open spaces near SR-14 experience prolonged inhalation of smoke and particulates during wildfire season, often without access to masks, indoor shelter, or hydration.

4.2.7 Flooding

4.2.7.1 Overall Vulnerability and Impact

Santa Clarita's flooding vulnerability stems from a combination of steep watershed basins, rapidly responding canyon drainages, post-wildfire debris flow potential, and development located adjacent to the Santa Clara River and its tributaries. Although much of the City's developed core lies outside FEMA 100-year floodplains, significant portions of Canyon Country, Newhall, and Saugus remain susceptible to localized flooding during high-intensity precipitation events. Atmospheric river storms – such as those experienced in 2017, 2019, and 2023 – can deliver several inches of rainfall within short time periods, overwhelming storm drain systems and causing roadway closures, slope failures, and sediment deposition. Post-fire conditions drastically increase flood and debris-flow potential in San Francisquito Canyon, Placerita Canyon, Bouquet Canyon, and Soledad Canyon, where hydrophobic soils and burned vegetation accelerate runoff. Climate projections indicate that extreme rainfall events may become more intense, increasing the risk of flash flooding and erosion even in areas not historically prone to flood hazards.)

4.2.7.2 Population

Flood exposure affects residents throughout Santa Clarita, but risk is highest in neighborhoods located near canyon mouths, alluvial fans, and low-lying portions of the Santa Clara River Valley. Several thousand residents live within flood-prone areas identified by FEMA FIRMs or by Los Angeles County flood control modeling, particularly in Canyon Country along the Santa Clara River corridor and in older neighborhoods near Sierra Highway and Soledad Canyon Road. Residents in hillside communities face additional risks from slope saturation, shallow landslides, and debris flows triggered by intense storms. Disruptions from roadway flooding can affect tens of thousands of commuters, as closures on Soledad Canyon Road, Bouquet Canyon Road, and McBean Parkway are common during heavy rainfall.

4.2.7.3 Critical Facilities

Several critical facilities lie within areas susceptible to flooding or debris flow hazards. SCV Water's river-adjacent infrastructure – including pipeline crossings, well fields, and treatment facilities – can be affected by bank erosion, sedimentation, and high flows in the Santa Clara River. Access routes to fire stations and sheriff substations in canyon areas may be temporarily blocked by floodwaters or debris, delaying emergency response. Bridges and underpasses along Railroad Avenue, Magic Mountain Parkway, and Sierra Highway may accumulate runoff or storm-related debris, causing closures that hinder emergency vehicle circulation. Storm-related power outages can affect communication systems, water pumping, and hospital operations, compounding flood impacts.

4.2.7.4 Non-Critical Facilities

Schools, parks, commercial districts, and residential complexes experience frequent disruptions during moderate to heavy rainfall. School campuses in lower-lying areas, including portions of Canyon Country and Newhall, may experience flooded parking lots, temporary closures, or restrictions on outdoor activity. Commercial centers along Soledad Canyon Road, Bouquet Canyon Road, and Sierra Highway may face accessibility issues during roadway flooding. Parks and trail systems along the Santa Clara River – such as the Iron Horse Trail and River Village paths – are particularly vulnerable to inundation, sediment deposition, and damage to recreational infrastructure. In many older neighborhoods, backyards, driveways, and local streets experience nuisance flooding due to undersized storm drains or poor drainage patterns.

4.2.7.5 Environment

Flooding and storm events significantly influence ecological systems within Santa Clarita. High flows in the Santa Clara River transport large volumes of sediment, debris, and pollutants downstream, affecting water quality and aquatic habitats. Debris flows sourced from post-fire drainages can introduce excessive sediment loads that alter channel morphology and disrupt riparian vegetation. Flooding may also mobilize contaminated soils or materials from industrial or commercial properties situated near floodplains. While periodic flooding supports natural sediment transport and habitat processes in the Santa Clara River, extreme events can damage sensitive species, disrupt wildlife corridors, and erode trails and recreational areas.

4.2.7.6 Changes in Development Since Last Approved Plan

Development Trends: Growth in and around the Santa Clarita Valley, including Tesoro Highlands and other nearby master-planned development areas, can affect watershed conditions, drainage demand, and regional emergency access. New development is generally required to incorporate drainage controls, detention, and water-quality features, but additional impervious surface, grading, and roadway extensions can still influence stormwater runoff patterns during high-intensity rainfall events.

The Bouquet Canyon Road Realignment Project includes roadway improvements and Bouquet Creek channel improvements in the northern portion of the City. These improvements support localized flood conveyance, roadway reliability, and public safety along the Bouquet Creek corridor. While the project improves conditions in this area, intense rainfall, debris, and downstream capacity constraints may still produce localized flooding or maintenance needs during major storm events.

Land Use and Zoning: The City's land use designations place substantial residential and commercial development within alluvial valleys and adjacent to canyon drainages, where storm flows concentrate. Zoning within the Santa Clara River corridor includes floodplain-compatible uses such as open space and recreation, but adjacent development remains vulnerable to localized flooding during extreme rainfall. Hillside zoning requires drainage and slope stability measures, yet steep terrain in canyon communities continues to generate rapid runoff and landslide potential. Industrial zones near the river or on flatter basins face risks related to sedimentation, storm drain surcharging, and potential hazardous material mobilization.

Population Shifts: While overall population growth has slowed, concentrations of residents in Canyon Country, Newhall, and Saugus have increased exposure in flood-prone areas. Growth in multi-family housing has placed more residents in areas where parking lots and access routes flood during heavy storms. As more older adults and medically vulnerable individuals move into the City or age in place, storm-related power outages, mobility challenges, and emergency access constraints increase the potential severity of flood impacts.

4.2.7.7 Impacts on Vulnerable Populations

Low-Income Residents: Low-income households, many of whom reside in older housing stock in Newhall and Canyon Country, experience disproportionate impacts from flooding due to limited access to resources for home repairs, floodproofing, or temporary relocation. Older homes may lack adequate drainage or grading, increasing susceptibility to interior water damage. Renters face additional barriers, as they may rely on landlords for structural improvements and may have limited capacity to replace damaged belongings.

Elderly Individuals: Older adults face elevated risks during flood events because mobility limitations impede their ability to evacuate or navigate flooded streets. Storm-related power outages can disrupt medical equipment, refrigeration for medications, and heating or cooling systems. Elderly residents may also be more isolated and less likely to receive timely warnings or assistance, especially during nighttime or rapidly evolving flood situations.

Minority Communities: Minority and linguistically isolated communities may experience barriers in accessing flood warnings, preparedness information, or post-disaster assistance if messaging is not available in multiple languages or through accessible channels. Many residents in these communities work in service, transportation, or outdoor labor sectors, making them more vulnerable to travel disruptions or unsafe conditions during storm events. Minority households concentrated in older multifamily buildings may also face increased exposure due to inadequate drainage systems or aging infrastructure.

Unhoused Individuals: Unhoused individuals, particularly those living in the Santa Clara River corridor, are among the most at-risk populations during flood and storm events. Sudden increases in river flow can rapidly inundate encampments, creating life-threatening conditions. Debris-laden flows, cold water exposure, and limited access to dry shelter significantly increase the risk of injury or hypothermia. Outreach teams frequently conduct emergency evacuations during intense storms, but encampments may become isolated when culverts flood or trails become inaccessible.

4.2.8 Drought

4.2.8.1 Overall Vulnerability and Impact

Santa Clarita is highly vulnerable to drought due to its location within a semi-arid region and dependence on variable imported and local water supplies. Prolonged drought conditions – such as those in 2014–2016 and 2020–2022 – reduce groundwater recharge, diminish surface water flows in the Santa Clara River, and constrain deliveries from the State Water Project, which provides a significant share of the region's total water portfolio. Drought increases wildfire risk, strains local ecosystems, elevates water treatment costs, and forces mandatory conservation measures that affect households, businesses, and public facilities. The City's combination of rapid urban development, hot summers, and climate-driven reductions in snowpack produce long-term water supply stress, making drought one of Santa Clarita's most consequential hazards.

4.2.8.2 Population

All residents are exposed to drought impacts, although exposure levels differ based on water use patterns, housing type, and economic resources. Households with large, irrigated landscapes or aging plumbing experience heightened impacts during mandatory water restrictions. Multifamily residents – representing thousands of households – often lack direct control over water-saving measures or leak repairs, increasing the likelihood of service disruptions or higher shared costs. Drought also exacerbates extreme heat impacts, reducing landscape cooling and increasing reliance on air conditioning, which places a secondary burden on vulnerable populations.

4.2.8.3 Critical Facilities

Drought affects critical infrastructure through water supply reductions, increased groundwater pumping needs, and heightened operational stress on SCV Water's treatment and distribution systems. Reduced water availability constrains fire suppression capacity, especially during peak wildfire season when drought and extreme heat coincide. Hospitals, schools, and public safety facilities rely on continuous water service for sanitation, cooling, and medical operations; drought can increase service interruptions or require alternate cooling strategies. Pump stations, wells, and surface water intakes may require additional monitoring or treatment when flows diminish or water quality declines due to higher pollutant concentrations during dry years.

4.2.8.4 Non-Critical Facilities

Parks, athletic fields, landscaped medians, and recreational facilities are among the most visibly affected assets during drought, as mandatory irrigation reductions lead to dry turf, increased soil erosion, and potential facility closures. Commercial properties – especially restaurants, car washes, hotels, and landscaping businesses – face operational restrictions and increased costs. Homeowners' associations may experience conflicts around landscaping requirements and compliance with drought ordinances. Schools may adjust outdoor programming or maintenance routines during extreme drought periods, particularly as play surfaces deteriorate under restricted irrigation.

4.2.8.5 Environment

Drought significantly stresses ecosystems in and around the Santa Clara River, reducing habitat availability for sensitive species, including the unarmored three-spined stickleback and southwestern willow flycatcher. Reduced river flows and groundwater levels degrade riparian vegetation, diminish shade canopy, and increase water temperatures. Dry conditions contribute to increased tree mortality, expansion of invasive grasses, and heightened ignition potential for wildfires. Drought also reduces soil moisture, increasing erosion and dust generation across open space areas and construction sites. Prolonged drought alters the timing of natural processes, such as flowering and migration patterns, disrupting ecological balance in the Santa Clarita Valley.

4.2.8.6 Changes in Development Since Last Approved Plan

Development Trends: Recent and planned residential, commercial, and industrial growth in and around the Santa Clarita Valley, including Tesoro Highlands and Needham Ranch, may increase long-term water demand and drought-planning needs. New development is subject to current water-efficiency, landscaping, and stormwater requirements, and regional water suppliers account for planned growth in water-supply planning. However, drought conditions may still increase pressure on imported water supplies, groundwater management, recycled water investments, and conservation programs.

Land Use and Zoning: Santa Clarita's land use patterns include substantial areas of outdoor landscaping, parks, and open space buffers that require irrigation during normal conditions. Zoning for large-lot residential properties in Saugus, Canyon Country, and Placerita Canyon often results in high landscaping water use, which becomes difficult to sustain under drought restrictions. Industrial zones with cooling needs or water-dependent operations may experience increased operational costs. Open space zoning reduces development pressure but contributes to wildfire vulnerability when drought accelerates vegetation drying.

Population Shifts: Growth in family-oriented neighborhoods and aging-in-place trends influence drought-related vulnerabilities. Families may face higher impacts from rising utility bills or landscaping requirements, while older adults may struggle to adapt to xeriscaping changes or water restriction guidelines. Population growth in canyon communities places additional reliance on groundwater and imported water systems that are strained during multi-year droughts. Increasing numbers of medically vulnerable residents also heighten concerns around indoor cooling needs when drought and extreme heat coincide.

4.2.8.7 Impacts on Vulnerable Populations

Low-Income Residents: Low-income households experience disproportionate drought impacts due to limited flexibility in managing utility costs and fewer resources to retrofit homes with efficient appliances or drought-tolerant landscaping. Renters – who comprise a substantial share of lower-income households in Newhall and Canyon Country – often have little control over leak repairs or irrigation systems. Rising water rates or penalties associated with consumption may further strain household budgets during prolonged drought periods.

Elderly Individuals: Elderly residents face increased health risks when drought coincides with extreme heat, as dry landscapes reduce cooling benefits and indoor temperatures rise more rapidly. Mobility and income limitations may restrict their ability to implement water-saving measures or modify landscaping. Seniors dependent on home health services or cooling systems may be more vulnerable if drought-related rate increases affect their ability to maintain adequate indoor environments.

Minority Communities: Minority communities often reside in older housing with less efficient plumbing systems and limited ability to finance water-saving upgrades. Many members of these communities work in outdoor or service-related occupations that suffer during drought-related business slowdowns. Linguistic isolation may reduce access to drought communication campaigns or rebate programs designed to support conservation. Multifamily housing units in these areas may also experience reduced landscaping maintenance, contributing to urban heat effects.

Unhoused Individuals: Unhoused individuals face heightened exposure to hazards associated with drought, including extreme heat, limited access to potable water, and reduced availability of shaded areas as vegetation dies back. Water station closures or reductions during drought can limit hydration options. Dry conditions also increase dust and allergen levels in encampments, worsening respiratory conditions. As wildfire conditions worsen during drought, individuals living in open space areas face significant evacuation and health risks.

4.2.9 Hazardous Materials Release / Transportation Accidents

4.2.9.1 Overall Vulnerability and Impact

Santa Clarita is vulnerable to hazardous materials releases stemming from transportation accidents, fixed-facility incidents, pipeline failures, and illegal dumping. The City is bisected by major transportation corridors – including Interstate 5, State Route 14, and the Metrolink/Union Pacific rail line – that carry significant quantities of hazardous cargo such as fuel, industrial chemicals, solvents, and pressurized gases. Accidents along these corridors have the potential to trigger large-scale evacuations, roadway closures, and environmental contamination. Fixed-facility sites, including industrial businesses in Valencia Industrial Center and along Railroad Avenue, store or use hazardous materials that, if compromised, could affect workers, nearby residents, and adjacent infrastructure. Although major incidents are infrequent, the consequences of a significant release could be severe, especially in densely populated areas or near sensitive receptors such as schools, hospitals, or the Santa Clara River. Increasing transportation volume and continued growth in industrial activity may elevate long-term risk.

4.2.9.2 Population

A large portion of Santa Clarita's population lives, works, or travels within proximity to hazardous materials transportation routes. More than 200,000 vehicle trips occur daily along I-5 and SR-14 through areas where tanker trucks and commercial carriers routinely travel. Several thousand residents live within one mile of the Metrolink rail corridor, where trains may haul flammable liquids or other regulated materials. Schools, multifamily housing, and commercial centers are commonly located near high-volume roadways, increasing exposure during an accidental release. Populations living in Newhall, Canyon Country, and Saugus – particularly those near Railroad Avenue, Soledad Canyon Road, and Bouquet Canyon Road – experience elevated exposure due to corridor density and mixed land uses. Regular commuter volume means that at any given time, tens of thousands of people could be affected by roadway closures, shelter-in-place orders, or smoke or vapor plumes from a release.

4.2.9.3 Critical Facilities

Critical facilities including Henry Mayo Newhall Hospital, sheriff stations, fire stations, schools, and SCV Water infrastructure may be directly or indirectly impacted. The hospital lies near major roadways and must maintain operations during hazardous materials releases. Fire stations located near I-5, SR-14, and the rail corridor may experience access restrictions during an incident, slowing response times. SCV Water facilities situated near industrial areas or the Santa

Clara River could be affected by chemical runoff or spills migrating into river channels or groundwater pathways. Communication towers and power infrastructure may also be affected during an evacuation or extended shutdown, complicating emergency coordination.

4.2.9.4 Non-Critical Facilities

Industrial and commercial facilities located within Valencia Industrial Center, Rye Canyon Business Park, and along Railroad Avenue house materials that may contribute to or be affected by hazardous releases. Retail centers near major transportation corridors may experience temporary closures, shelter-in-place orders, or reduced accessibility during an incident. Schools, parks, and faith-based institutions located near high-traffic routes or industrial zones face evacuation or indoor air quality risks if nearby releases generate fumes or particulate exposure. Residential complexes adjacent to industrial land uses may experience disproportionate disruption during response operations.

4.2.9.5 Environment

Hazardous materials releases pose significant risks to the Santa Clara River watershed, open space preserves, and sensitive wildlife habitat. Spills or runoff from transportation accidents can contaminate surface water, soil, and riparian vegetation, harming aquatic species and degrading habitat quality. Chemical vapors may cause localized vegetation stress or wildlife mortality. A release involving petroleum products or solvents could persist in sediment layers, requiring long-term remediation. Wildfire risk may also increase when flammable materials ignite during an accident. Cleanup efforts themselves may disturb habitat or require temporary closures of trails, river access points, or open space areas.

4.2.9.6 Changes in Development Since Last Approved Plan

Development Trends: Industrial and business-park growth, including Needham Ranch and other employment centers near major transportation corridors, may increase the movement and storage of fuels, chemicals, batteries, cleaning agents, compressed gases, and other regulated materials. These uses are subject to applicable hazardous materials disclosure, fire code, transportation, and emergency response requirements; however, increased commercial and industrial activity can raise the importance of coordinated inspections, route planning, spill response, and communication among businesses, the City, Los Angeles County Fire Department, and regional response partners.

Land Use and Zoning: Industrial zoning districts, including the Valencia Industrial Center, Rye Canyon, and areas along Railroad Avenue, continue to permit uses involving hazardous materials storage and processing. While the City's zoning separates heavy industrial uses from most residential areas, mixed-use corridors and older commercial corridors near the rail line create closer proximity between populations and hazardous materials routes. Open space zoning along the Santa Clara River reduces development pressure but increases environmental vulnerability if a spill reaches the watershed. Newer developments must comply with strict hazardous materials disclosure and storage requirements, but legacy facilities may contain older systems that are more susceptible to failure.

Population Shifts: Population growth in Newhall, Valencia, and Canyon Country has increased the number of residents living near high-volume truck and rail routes. Multi-family developments near Railroad Avenue and Soledad Canyon Road place more residents within the potential impact radius of a transportation-related release. The increasing number of children and older adults living in these areas heightens sensitivity to chemical exposures and complicates evacuation or shelter-in-place operations. Growth in the City's workforce also increases daytime exposure in commercial and industrial areas.

4.2.9.7 Impacts on Vulnerable Populations

Low-Income Residents: Low-income residents are disproportionately affected by hazardous materials incidents because many live in older multifamily housing near transportation corridors or industrial uses. These units often lack modern HVAC systems capable of filtering airborne contaminants, increasing exposure during shelter-in-place conditions. Limited access to personal vehicles can hinder evacuation, and low-wage workers may be employed in facilities where exposure risk is higher.

Elderly Individuals: Elderly adults are highly vulnerable to inhalation of toxic fumes or particulate matter. Mobility challenges may impede evacuation, and many rely on in-home medical devices requiring stable power and clean air. Older residents in long-term care facilities near major corridors face heightened risk if air quality deteriorates or if rapid relocation is needed during a release.

People with Disabilities: Minority communities – particularly Hispanic and Asian populations concentrated in Newhall and Canyon Country – may face elevated exposure due to residential patterns near transportation and industrial corridors. Language barriers may delay access to emergency instructions during fast-moving incidents. Workers in transportation, warehousing, and industrial sectors may have increased occupational exposure to hazardous materials or accident risks.

Unhoused Individuals: Unhoused individuals living near the Santa Clara River corridor, underpasses, or open space areas adjacent to roadways and rail lines face heightened vulnerability during spills or chemical releases. They may lack timely access to warnings, transportation, or shelter.

4.2.10 Landslides

4.2.10.1 Overall Vulnerability and Impact

Santa Clarita is vulnerable to landslides, slope failures, and debris flows due to its extensive hillside development, steep canyon walls, and geologic formations prone to instability. Areas with weak sedimentary rock, highly erodible soils, and steep gradients – including Placerita Canyon, San Francisquito Canyon, Bouquet Canyon, Mint Canyon, and Soledad Canyon – are particularly susceptible. Landslide risk increases significantly during intense winter storms, especially following wildfire events that reduce vegetation cover and create hydrophobic soils. Even moderate rainfall can trigger shallow slope failures, rockfall, and debris slides that block roads, damage infrastructure, and isolate neighborhoods. Larger, deep-seated landslides – though less frequent – remain a concern in historically active terrain along canyon slopes. Climate change is projected to increase the frequency of high-intensity rain events, exacerbating landslide and debris-flow hazards across the wildland–urban interface.

4.2.10.2 Population

Residents living in hillside neighborhoods and canyon communities are most exposed to landslide and debris-flow hazards. Several thousand residents in Canyon Country, Placerita Canyon, Sand Canyon, Saugus, and Newhall live near slopes with documented instability or within areas where post-fire debris flows are likely during heavy rainfall. Homes located at the base of steep slopes or along narrow canyon roads face the highest risk of direct impact or loss of access. Commuters traveling on Soledad Canyon Road, Sierra Highway, San Francisquito Canyon Road, and Bouquet Canyon Road are also exposed, as these routes frequently experience slope movement, rockfall, or debris during storms. Although the majority of residents live outside high-hazard zones, road closures or debris-flow events can disrupt mobility and emergency response for the broader community.

4.2.10.3 Critical Facilities

Landslide hazards may affect access routes to fire stations, sheriff's substations, and critical SCV Water infrastructure. Roads serving canyon-area fire stations, pump stations, and transmission corridors can be temporarily impassable during slope failures or debris flows. Water pipelines located along hillsides or within canyon corridors may be damaged by slope movement. Communication towers on ridgelines may experience reduced accessibility following slope instability events. While few critical facilities lie directly in mapped landslide zones, the impairment of access roads or supporting lifelines can significantly disrupt emergency response operations.

4.2.10.4 Non-Critical Facilities

schools, parks, and recreational facilities near canyon interfaces may experience temporary closures or access disruptions during slope movement or major rainfall events. Trails and open space areas – particularly in the Angeles National Forest foothills – are routinely affected by rockfall or debris flows after storms, impacting public safety and maintenance costs. Residential properties in hillside developments, including portions of Saugus, Canyon Country, Placerita Canyon, and Newhall, may suffer retaining wall damage, backyard slope erosion, or structural impacts during slope instability. Commercial properties located below steep cuts or slopes near older transportation corridors may be exposed to rockfall or localized slippage.

4.2.10.5 Environment

Landslides and debris flows reshape stream channels, transport sediment into the Santa Clara River, and damage riparian ecosystems. Excess sedimentation reduces water quality, impairs aquatic habitat, and increases treatment needs for downstream water systems. Vegetation loss on unstable slopes diminishes habitat, accelerates erosion, and alters wildlife movement patterns. Debris flows following wildfire events often carry ash, organic debris, and contaminants into waterways, increasing nutrient loads and degrading water chemistry. Repeated slope failures may further destabilize terrain and contribute to long-term landscape change in hillside and canyon environments.

4.2.10.6 Changes in Development Since Last Approved Plan

Development Trends: Growth in hillside and canyon-adjacent areas in and around the Santa Clarita Valley, including Skyline Ranch, Plum Canyon, Tesoro Highlands, and portions of nearby Valencia expansion areas, has increased the number of structures, roads, and utility connections near slopes with potential instability. New development standards require geotechnical evaluations, engineered grading, drainage controls, and slope stabilization, but extreme rainfall, post-fire debris-flow conditions, or long-term erosion may still exceed localized design assumptions.

Land Use and Zoning: The City's Hillside Development Ordinance includes requirements for grading, drainage, slope stability, and site design in hillside areas; however, steep terrain and geologic conditions continue to pose inherent risk. Open space zoning helps preserve natural buffers, but extensive slopes in preserved areas can generate debris flows that affect adjacent neighborhoods, roads, and utilities.

Population Shifts: Population increases in canyon-adjacent communities and hillside neighborhoods have placed more residents in locations where access routes may be compromised during slope failures or debris-flow events. The City's aging population also increases sensitivity to disruptions caused by road closures or evacuation barriers. As infill development concentrates more people in older neighborhoods near steep terrain – particularly in Newhall and Canyon Country – exposure to localized slope hazards may rise, even as new construction follows improved geotechnical standards.

4.2.10.7 Impacts on Vulnerable Populations

Low-Income Residents: Low-income residents may live in older hillside housing or rental properties with aging retaining walls, inadequate drainage, or deferred maintenance that increase landslide vulnerability. Limited financial resources hinder their ability to address slope erosion, foundation issues, or temporary relocation following a storm-related slope failure. Many rely on transportation routes that may be closed during debris-flow events, affecting access to employment or services.

Elderly Individuals: Older adults face significant challenges during landslide or debris-flow incidents due to mobility constraints and the potential need for rapid evacuation. Road closures can delay medical appointments or in-home care services, particularly in canyon communities where alternative routes are limited. Structural damage to homes or loss of access can disproportionately affect elderly residents who rely on stable environments and consistent utilities.

Minority Communities: Minority residents – particularly those in Canyon Country and Newhall – may live in older multifamily buildings or near transportation corridors adjacent to steep slopes where localized slope failures occur during strong storms. Language barriers may impede timely access to emergency alerts or evacuation information. Workers in outdoor or service sectors may face increased transportation disruption when landslides block major roads.

Unhoused Individuals: Unhoused individuals living in the Santa Clara River corridor, near steep slopes, or within open space areas face severe risks during storms that trigger slope failures or debris flows. They often lack access to safe shelter or timely notification of hazardous conditions. Rapid-onset debris flows can inundate encampments, while saturated soils increase the likelihood of bank collapse or slope slippage near informal living areas.

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4.2.11 Dam Failure

4.2.11.1 Overall Vulnerability and Impact

Santa Clarita faces dam failure risk primarily from Castaic Dam, Bouquet Canyon Dam, and a network of smaller flood-control and water-storage structures managed by Los Angeles County and SCV Water. While catastrophic dam failures are unlikely due to stringent inspection requirements under the California Division of Safety of Dams (DSOD), the consequences of a major breach would be severe. Castaic Dam, with a storage capacity exceeding 320,000 acre-feet, represents the most significant potential threat; a failure could produce a large and fast-moving inundation wave traveling down Castaic Creek into the Santa Clara River, affecting communities in Saugus, Valencia, and central Santa Clarita. Bouquet Canyon Dam, though smaller, has a history of safety concerns due to past structural issues and sedimentation, and a sudden release could impact canyon residents and downstream neighborhoods. Potential impacts include loss of life, extensive property damage, major transportation disruption, and long-term effects on water supply infrastructure. Although probability is low, the magnitude of consequences makes dam failure a critical hazard.

4.2.11.2 Population

Tens of thousands of residents live within areas that could be inundated in a major Castaic Dam failure scenario. Inundation mapping indicates that portions of Saugus, Valencia, Newhall, and the Santa Clara River corridor would be exposed to deep flooding, with arrival times varying from minutes in upstream neighborhoods to over an hour downstream. Residents living in low-lying areas along the Santa Clara River – including those near Decoro Drive, Copper Hill Drive, Railroad Avenue, and McBean Parkway – would face the highest exposure. Bouquet Canyon communities and rural properties along the canyon road are directly downstream of Bouquet Canyon Dam and may experience rapid flooding in a breach scenario. The daytime population in commercial centers near Valencia Town Center, office areas along Tourney Road, and schools located near the river corridor further elevates total exposure.

4.2.11.3 Critical Facilities

Key critical facilities lie within or near potential inundation areas and may face compromised access or operational disruption during a dam failure. SCV Water infrastructure – including pipelines, well fields, and river-adjacent facilities – could be damaged or rendered inaccessible. Several fire stations and sheriff's facilities rely on roadways that may flood or become impassable, delaying emergency response. Henry Mayo Newhall Hospital, although not directly located in the deepest predicted flood zone, could experience difficulty receiving patients or maintaining access if surrounding roadways flood. Power substations and communication facilities situated near the Santa Clara River may suffer water damage, leading to extended outages.

4.2.11.4 Non-Critical Facilities

Numerous schools, parks, and commercial centers lie within areas that could experience inundation. Schools in the Saugus and Valencia areas, particularly those near river-adjacent corridors, may require rapid evacuation or shelter-in-place actions. Commercial corridors along Valencia Boulevard, McBean Parkway, and Magic Mountain Parkway could sustain flooding, structural damage, or loss of utilities. Parks and recreational amenities along the river corridor – including trails, sports fields, and open-space areas – would experience extensive damage from scouring, sediment deposition, and debris. Residential properties, especially multifamily complexes located on lower terrain, may face structural flooding and loss of habitability.

4.2.11.5 Environment

A dam failure would cause significant environmental damage, including large-scale scouring of the Santa Clara River channel, destruction of riparian habitat, and widespread sediment and debris deposition. High-velocity flood flows could erode banks, displace aquatic species, and alter long-term channel morphology. Contaminants from industrial areas, roadways, and residential zones may enter the river system, degrading water quality and harming downstream ecosystems. Habitat corridors for wildlife could be severely disrupted. Recovery would require extensive sediment removal, habitat restoration, and long-term monitoring of water quality and species health.

4.2.11.6 Changes in Development Since Last Approved Plan

Development Trends: Recent residential and commercial growth in Saugus, Valencia, and along the Santa Clara River corridor has increased the number of people and structures located within dam inundation zones. While new developments incorporate modern standards for flood safety and emergency communication, the overall expansion of the built environment elevates total exposure. Increased development near Decoro Drive, Copper Hill Drive, West Creek/West Hills, and northern Valencia adds density to areas that would receive early flood arrival in a breach scenario. Commercial expansions along Magic Mountain Parkway and Newhall Ranch Road add daytime population and infrastructure vulnerability.

Land Use and Zoning: Land use patterns permit residential, commercial, and mixed-use development within low-lying districts near the Santa Clara River, where dam inundation depths would be greatest. Although open-space zoning along the river helps reduce direct structural

exposure, adjacent land uses remain vulnerable to floodwater impacts and debris. Industrial zoning near river-adjacent corridors increases the potential for secondary environmental impacts if facilities storing hazardous materials are flooded. Hillside and canyon zoning near Bouquet Canyon retains rural residential uses that may be cut off quickly in a failure scenario due to limited evacuation routes.

Population Shifts: Population growth in Saugus, Valencia, and northern Santa Clarita has increased the number of residents living near inundation-prone areas. Higher-density housing trends, including multifamily development near transit corridors and shopping districts, concentrate more individuals within potential flood zones. The aging population increases vulnerability to rapid evacuations, while increased daytime population in commercial areas intensifies risk during peak business hours. Improved mobility patterns, including rising commuter traffic, may complicate evacuation during an emergency requiring immediate movement.

4.2.11.7 Impacts on Vulnerable Populations

Low-Income Residents: Low-income households, particularly those living in older multifamily housing in Newhall and river-adjacent areas, face heightened vulnerability due to limited transportation access, reduced ability to evacuate quickly, and fewer resources to recover from displacement. Renters may also experience prolonged housing instability if buildings sustain extensive flood damage. Limited access to insurance further increases long-term recovery challenges

Elderly Individuals: Older adults face significant risk during dam failure due to mobility limitations, medical needs, and dependence on stability in the home environment. Rapid-onset flooding may leave insufficient time for safe evacuation without assistance. Seniors reliant on powered medical equipment face additional complications if utilities are disrupted. Evacuation shelters may present accessibility challenges, especially for individuals with chronic health conditions.

Minority Communities: Minority communities and linguistically isolated households located within or near mapped inundation areas may face communication, transportation, and recovery barriers during a rapid-onset dam-failure event.

Unhoused Individuals: Unhoused individuals living in or near the Santa Clara River corridor face the most immediate and life-threatening risks during a dam failure. Floodwaters in this area would arrive rapidly and with destructive force, leaving little time for evacuation. Many encampments lie directly within the predicted inundation zone,

4.2.12 Epidemic/Pandemic

4.2.12.1 Overall Vulnerability and Impact

Santa Clarita remains vulnerable to epidemic and pandemic events due to its large population, high regional mobility, and reliance on countywide healthcare systems. The COVID-19 pandemic demonstrated that widespread infectious disease could disrupt public health, education, business operations, and critical services across the City. Santa Clarita's location along Interstate 5 and State Route 14, as well as its commuter-based workforce – where more than 40 percent of residents travel outside the valley for employment – creates frequent interaction across regional population centers and increases exposure to infectious disease spread. Schools, childcare facilities, nursing homes, correctional settings, and high-density workplaces can accelerate transmission. Pandemic conditions may also exacerbate existing social and economic disparities, particularly for residents who lack healthcare access, stable housing, or the ability to work remotely.

4.2.12.2 Population

All residents of Santa Clarita are exposed to epidemic and pandemic threats, but exposure risk varies based on age, occupation, household density, and proximity to high-contact environments. The City's population of more than 230,000 residents includes a significant number of children enrolled in schools, college students at local higher-education facilities, and adults employed in service, logistics, retail, and healthcare sectors – all of whom face heightened exposure during outbreaks. Multigenerational households, which are more common in Canyon Country and Newhall, experience greater risk of intrafamily transmission. Regional commuting patterns link Santa Clarita to Los Angeles, the San Fernando Valley, the Antelope Valley, and Ventura County, enabling rapid disease spread into and out of the community.

4.2.12.3 Critical Facilities

Healthcare and public safety infrastructure are central to epidemic and pandemic response and may become strained during widespread illness. Henry Mayo Newhall Hospital experiences significant surges during infectious disease outbreaks, which can reduce hospital bed capacity, delay emergency care, and increase the need for specialized equipment such as ventilators or isolation rooms. Fire stations, ambulance services, and law enforcement may operate with reduced staffing due to illness while simultaneously responding to increased medical calls. Senior living facilities and long-term care homes are especially sensitive, given the elevated health risks to residents and the need for strict infection control measures. Schools are critical facilities for disease monitoring and continuity planning, as infections spread rapidly in classroom environments.

4.2.12.4 Non-Critical Facilities

Non-critical facilities – including schools, childcare centers, businesses, gyms, religious institutions, and recreational amenities – are significantly affected by epidemic and pandemic conditions. Schools may require closures, hybrid schedules, or enhanced sanitization and ventilation, affecting thousands of families. Local businesses may face staffing shortages, reduced customer traffic, or mandated capacity limits, with disproportionate impacts on service industries. Parks, libraries, and sports facilities may experience temporary closures or restrictions, limiting social and recreational options. Public transportation systems, including Metrolink stations and local bus routes, can act as transmission environments unless mitigated by enhanced cleaning and ventilation.

4.2.12.5 Environment

Epidemics and pandemics typically have limited direct environmental effects; however, shifts in human behavior can produce secondary impacts. During prolonged outbreaks, outdoor recreation areas may see increased use, causing habitat disturbance in sensitive open-space preserves. Reduced vehicle activity may temporarily improve air quality, while increased use of single-use plastics and medical waste may strain waste management systems. High absenteeism among maintenance staff may delay environmental monitoring or open-space management tasks.

4.2.12.6 Changes in Development Since Last Approved Plan

Development Trends: Recent residential and commercial growth in Valencia, Saugus, Canyon Country, and Newhall has expanded population density in mixed-use districts, increasing the number of people working and living in close proximity. New commercial developments designed for high foot traffic, including retail centers and dining districts, can accelerate disease transmission during outbreaks. Growth in logistics and distribution centers within the Valencia Industrial Center has increased the number of essential workers who must remain on-site during public health emergencies, elevating occupational exposure.

Land Use and Zoning: Zoning patterns that concentrate multifamily housing near major corridors – such as Railroad Avenue, Soledad Canyon Road, and Newhall – may increase transmission potential due to shared ventilation systems and common areas. Industrial zoning preserves logistics and manufacturing clusters with dense indoor work environments where disease outbreaks can spread quickly. Schools, childcare centers, and other high-contact facilities are located across multiple land use designations, creating citywide exposure rather than confinement to specific districts.

Population Shifts: Santa Clarita's demographic profile includes significant growth in children, young adults, and older residents, each with distinct vulnerabilities. Increasing numbers of older adults elevate the proportion of residents at heightened risk of severe illness, while growing populations of school-age children raise the likelihood of school-based outbreaks. Remote work trends have shifted exposure patterns, with more residents spending extended periods indoors, which can either reduce or concentrate household transmission depending on living conditions.

4.2.12.7 Impacts on Vulnerable Populations

Low-Income Residents: Low-income households face elevated risks due to limited access to healthcare, reduced ability to work remotely, and higher likelihood of employment in high-contact occupations such as retail, hospitality, and logistics. Crowded living conditions in older multifamily units increase transmission risk. Limited access to paid sick leave can increase workplace exposure, and lack of financial reserves may make quarantine or isolation more difficult to maintain.

Elderly Individuals: Older adults face the highest rates of severe illness, hospitalization, and mortality during epidemic or pandemic events. Many rely on caregivers who interact with multiple households, increasing exposure risk. Long-term care facilities face challenges in controlling outbreaks due to shared living environments. Mobility limitations may prevent older adults from accessing testing, vaccination sites, or emergency supplies.

Minority Communities: Minority communities – particularly Hispanic and Asian residents concentrated in Newhall and Canyon Country – often experience higher exposure due to household density, essential-worker employment patterns, and reduced access to health insurance or preventive care. Language barriers may hinder timely access to public health information or vaccination campaigns. Cultural norms around caregiving and multigenerational households can also increase transmission.

Unhoused Individuals: Unhoused individuals face heightened vulnerability due to lack of stable shelter, limited sanitation access, and higher prevalence of underlying health conditions. Congregate shelters, where available, present elevated transmission risks unless stringent infection control measures are in place. Encampments along the Santa Clara River and open-space areas may lack access to healthcare, testing, or vaccination, complicating outbreak detection and response.

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4.3 Critical Infrastructure & Key Resources

4.3.1 Lifelines

FEMA's Lifelines are a framework for identifying and prioritizing critical infrastructure and services that are essential to the functioning of communities during and after a disaster. The Lifelines framework was developed by the Federal Emergency Management Agency (FEMA) to help emergency managers and first responders prioritize their response efforts and allocate resources during a disaster.

The concept of Lifelines emerged from the realization that disasters can have wide-ranging impacts on a community's infrastructure and services, and that disruptions to these critical systems can significantly hinder response and recovery efforts. The Lifelines framework was developed to identify these critical systems and services and prioritize them based on their importance to overall community functioning and resilience.

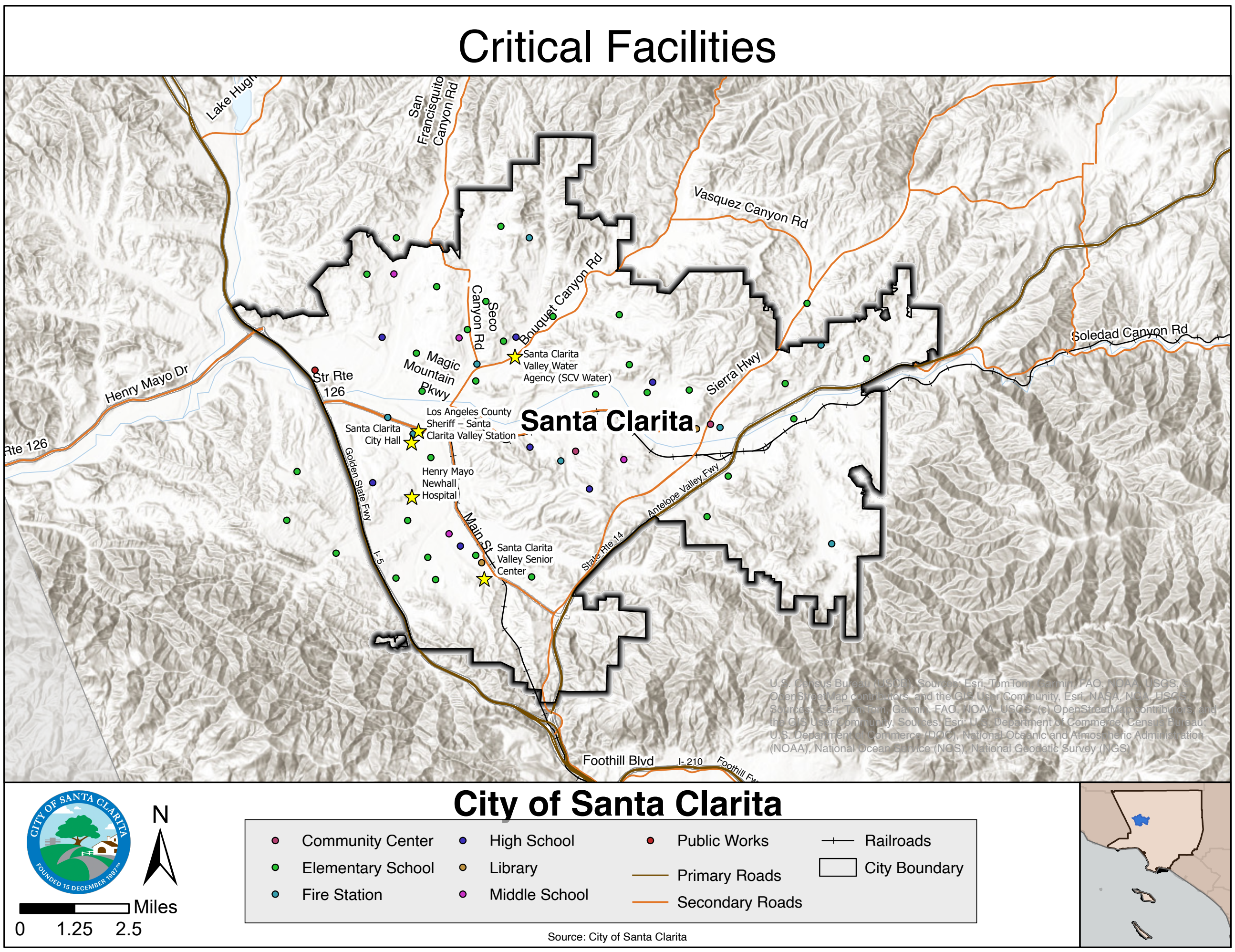
There are eight FEMA Lifelines, each of which represents a critical area of infrastructure or service. Critical facilities are categorized under the following lifelines:

- **Safety and Security:** This includes law enforcement/security, search and rescue, fire services, government service, and responder safety.
- **Food, Water, and Shelter:** This encompasses evacuations, schools, food/potable water, shelter, durable goods, water infrastructure, and agriculture.
- **Health and Medical:** This lifeline involves medical care (hospitals), patient movement, public health, fatality management, health care, and supply chain.
- **Energy:** Power (grid), temporary power, and fuel.
- **Communications:** This includes infrastructure, alerts, warnings, messages, 911 and dispatch, responder communications, and financial services.
- **Transportation:** This encompasses highway/roadway, mass transit, railway, aviation, and pipeline.
- **Hazardous Materials:** This includes facilities, hazardous debris, pollutants, and contaminants.
- **Water Systems:** This includes potable water infrastructure and wastewater management.

The Lifelines framework is designed to help emergency managers and first responders prioritize their response efforts and allocate resources based on the criticality of each Lifeline. By prioritizing the most critical Lifelines, emergency responders can work to restore essential services and infrastructure more quickly, which can help to speed up the overall recovery process and reduce the impact of the disaster on the community.

4.3.2 Inventory of Critical Facilities

Critical facilities are essential to the response, recovery, and overall resilience of the City of Santa Clarita. These facilities include emergency response and coordination centers, key public infrastructure, transportation assets, utilities, and community service buildings that support essential operations. Identifying and assessing these facilities' vulnerabilities is a key component of hazard mitigation planning to help maintain functionality before, during, and after disaster events.



The following table lists critical facilities within Santa Clarita, along with their addresses, functions, and associated FEMA Lifelines (including City facilities and essential partner-operated facilities such as Los Angeles County fire/law enforcement resources, SCV Water infrastructure, regional transportation assets, and healthcare providers serving the Santa Clarita Valley).

Facility Name	Address	Function	FEMA Lifeline
Santa Clarita City Hall	23920 Valencia Blvd., Santa Clarita, CA 91355	City administration and primary emergency coordination functions	Safety and Security
Los Angeles County Sheriff – Santa Clarita Valley Station	26201 Golden Valley Rd, Santa Clarita, CA 91350	Law enforcement, emergency response, and public safety operations	Safety and Security
Los Angeles County Fire Department Stations (Santa Clarita)	Various locations within Santa Clarita	Fire suppression, emergency medical services, and disaster response	Safety and Security
Henry Mayo Newhall Hospital	23845 McBean Pkwy., Valencia, CA 91355	Acute care hospital providing emergency and inpatient medical services	Health and Medical
Santa Clarita Valley Water Agency (SCV Water)	27234 Bouquet Canyon Rd., Santa Clarita, CA 91350	Regional water supply, treatment, and distribution services	Water
City of Santa Clarita Public Works Facilities	Various City-operated facilities	Maintenance of roads, stormwater infrastructure, and essential public assets	Transportation
Southern California Edison Facilities (Serving Santa Clarita)	Various locations	Electrical power generation and distribution	Energy
SoCalGas Facilities (Serving Santa Clarita)	Various locations	Natural gas transmission and distribution	Energy
Telecommunications Facilities (AT&T, Spectrum, others)	Various locations	Voice and data communications infrastructure	Communications
Santa Clarita Public Library Branches	Multiple locations citywide	Public information access and community support services	Food, Water, Shelter
Santa Clarita Valley Senior Center	22900 Market St., Santa Clarita, CA 91321	Senior services, nutrition programs, and social support	Food, Water, Shelter
Local School District Facilities (Public Schools)	Multiple locations citywide	Education services and designated emergency shelter capacity	Food, Water, Shelter
City of Santa Clarita Parks and Community Centers	Multiple locations citywide	Recreation services and potential cooling/shelter functions	Food, Water, Shelter

Facility Name	Address	Function	FEMA Lifeline
Los Angeles County Emergency Operations Center	Downey, CA	Operational Area coordination and multi-agency emergency management support	Safety and Security
Los Angeles County Flood Control District Facilities	Los Angeles County	Flood control, debris management, and stormwater conveyance	Water

Note: Some facilities, such as utility substations and switching stations, have multiple locations within Santa Clarita. Specific addresses are not publicly disclosed for security reasons.

4.3.3 Transportation and Supply Chain Vulnerabilities

Santa Clarita's transportation network is anchored by Interstate 5 (Golden State Freeway) and State Route 14 (Antelope Valley Freeway), which intersect at Newhall Pass, forming one of the most heavily traveled interchanges in Southern California and serving as a core commuter, freight, and evacuation route. State Route 126 connects west toward Ventura County and provides an additional regional mobility corridor. Major east–west and north–south arterials that support local and regional access include Newhall Ranch Road/Golden Valley Road (Cross Valley Connector) (an 8.5-mile corridor linking SR-14 and SR-126), Soledad Canyon Road, Bouquet Canyon Road, McBean Parkway, and Copper Hill Drive. The City maintains over 700 miles of public streets, 115 signalized intersections, and 230 miles of dedicated bikeways and multiuse paths

Supply chain vulnerabilities are an important concern given Santa Clarita's role in regional commerce and goods movement, including industrial and logistics activity tied to the I-5/SR-126 and SR-14 corridors. Disruptions to I-5, SR-14, or key arterials can delay emergency response, interrupt deliveries of food, fuel, medical supplies, and construction materials, and hinder workforce access. Public transit and rail are also essential: Santa Clarita Transit operates 11 fixed local routes, commuter express service, and Dial-A-Ride paratransit for seniors and individuals with disabilities; regional passenger rail is provided by Metrolink's Antelope Valley Line, with stations at Newhall, Santa Clarita (Soledad Canyon Road), and Via Princessa. Transit system resilience is increasingly tied to facility hardening and fleet modernization, including deployment of 10 battery-electric buses in 2023 and 12 additional buses in 2025, supported by HVIP funding; the Transit Maintenance Facility on Constellation Road is being upgraded for solar generation and charging infrastructure.

The table below provides a comprehensive list of transportation and supply chain facilities. Each facility is categorized by its function and FEMA lifeline designation.

Facility Name	Address	Function	FEMA Lifeline
Interstate 5 (I-5)	N/A	Major north–south freeway corridor; regional evacuation and freight route	Transportation
State Route 14 (SR-14)	N/A	Major commuter and freight corridor connecting Santa Clarita to Antelope Valley and the region	Transportation
State Route 126 (SR-126)	N/A	Regional east–west connector toward Ventura County	Transportation
Newhall Ranch Road / Golden Valley Road (Cross Valley Connector)	N/A	8.5-mile east–west corridor linking SR-14 and SR-126	Transportation
Soledad Canyon Road	N/A	Primary arterial supporting intercommunity access and evacuation routing	Transportation
Bouquet Canyon Road	N/A	Key canyon/arterial route supporting access, evacuation, and watershed/debris basin connectivity	Transportation
Santa Clarita Public Works Facilities	Various City-operated facilities	Public infrastructure maintenance and emergency response support	Transportation
Santa Clarita Transit (Operations / Maintenance Facility)	Constellation Road, Santa Clarita, CA	Public transit operations, fleet maintenance, and emergency mobility support	Transportation
Metrolink Antelope Valley Line (Stations: Newhall, Santa Clarita, Via Princessa)	N/A	Regional passenger rail service supporting commuter and emergency mobility	Transportation
Union Pacific / Rail Corridor (Shared with Metrolink in the valley)	N/A	Freight rail corridor supporting goods movement through the region	Transportation
Fueling Stations	Various locations	Fuel supply for commercial and emergency vehicles	Energy

4.3.4 Potential Transportation Disruptions and Vulnerabilities

Santa Clarita's transportation and supply chain systems are most vulnerable to hazards that affect major regional corridors, canyon routes, and wildland–urban interface access. Earthquakes present a primary risk due to the City's proximity to multiple active fault systems and the concentration of critical infrastructure at the I-5 / SR-14 Newhall Pass interchange, where structural damage to bridges, ramps, or rail lines could isolate the Santa Clarita Valley from the Los Angeles Basin and disrupt freight movement and emergency response.

Wildfire and extreme heat are closely linked transportation hazards in Santa Clarita. Santa Ana wind events and prolonged heat dry vegetation and increase ignition risk, frequently leading to road closures, evacuation traffic, and restricted access along canyon corridors such as Bouquet Canyon Road, Soledad Canyon Road, and Sand Canyon Road. Wildfire activity can also damage roadway surfaces, signage, and guardrails and disrupt power supply to traffic signals and transit facilities.

Flooding and debris impacts following intense winter storms pose additional vulnerability, particularly along canyon roads, low-lying arterials, and drainage crossings. During Tropical Storm Hilary in August 2023, the City experienced localized roadway flooding, sediment deposition, and drainage system stress, underscoring the susceptibility of transportation infrastructure to short-duration, high-intensity rainfall. Debris flows and slope instability following wildfire further increase the likelihood of road closures and access limitations.

SECTION 5 – CAPABILITY ASSESSMENT

Element C: Mitigation Strategy Requirements
C1. Does the plan document each jurisdiction's existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs? (Requirement 44 CFR § 201.6(c)(3))
C2. Does the plan address each jurisdiction's participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement 44 CFR § 201.6(c)(3)(ii))

This section evaluates the City of Santa Clarita's existing ability to reduce hazard risk through its current plans, policies, programs, regulations, staffing, technical resources, and interagency partnerships. While the preceding sections identify hazards and assess vulnerability, this section focuses on implementation capacity: what tools the City already has in place, where those tools are working effectively, and where additional coordination, resources, or policy improvements may be needed. In this way, the capability assessment helps determine how Santa Clarita can build on existing strengths to reduce long-term risk and improve community resilience.

5.1 Planning & Regulatory Capabilities

5.1.1 Existing Local Plans, Policies, and Regulatory Framework

The City of Santa Clarita maintains a comprehensive set of plans, policies, and regulatory tools that support hazard mitigation, risk reduction, and community resilience. These authorities guide land use, infrastructure investment, emergency preparedness, and development standards in hazard-prone areas, and provide the framework for implementing mitigation actions identified in this Local Hazard Mitigation Plan.

The following table summarizes key City and regional plans relevant to hazard mitigation.

Plan/Document	Purpose and Relevance to Hazard Mitigation	Latest Update
Santa Clarita General Plan	Provides long-term guidance on land use, circulation, housing, conservation, and safety; integrates hazard mitigation policies across elements.	Ongoing (multiple elements updated 2022–2024)

Plan/Document	Purpose and Relevance to Hazard Mitigation	Latest Update
General Plan Safety Element	Establishes policies addressing earthquakes, wildfire, flooding, dam failure, extreme heat, air quality, hazardous materials, evacuation, and climate adaptation; aligned with the State Hazard Mitigation Plan and SB 379 requirements.	2022
General Plan Land Use Element	Guides development patterns and densities to reduce exposure in hazard-prone areas, including floodplains, hillsides, and wildland–urban interface areas.	Ongoing
General Plan Conservation & Open Space Element	Addresses environmental protection, biological resources, open space preservation, and resource conservation that support flood control, wildfire mitigation, and climate resilience.	Ongoing
General Plan Circulation Element	Identifies transportation networks, evacuation routes, and mobility policies critical to emergency response and recovery.	Ongoing
General Plan Housing Element	Addresses housing needs while incorporating hazard constraints, emergency access considerations, and resilience strategies for residential development.	2023
Santa Clarita Local Hazard Mitigation Plan (LHMP)	Identifies hazards, vulnerabilities, and mitigation actions specific to Santa Clarita; prepared in accordance with FEMA's Disaster Mitigation Act of 2000.	2021 (Update in Progress)
California State Hazard Mitigation Plan (SHMP)	Provides statewide hazard mitigation goals and policy direction guiding local mitigation planning.	2023
Santa Clarita Zoning Code & Development Regulations	Implements building, fire, floodplain, hillside, and wildland–urban interface standards to reduce risk from natural and human-caused hazards.	Ongoing
Santa Clarita Climate Action & Adaptation Framework (General Plan CAP)	Addresses greenhouse gas reduction and climate adaptation, including extreme heat, wildfire, drought, and flooding considerations.	2024
SCAG Regional Transportation Plan / Sustainable Communities Strategy (RTP/SCS)	Guides regional transportation, evacuation capacity, and system resilience affecting Santa Clarita and northern Los Angeles County.	2024
Santa Clarita Emergency Operations Plan (EOP)	Establishes emergency preparedness, response, and recovery procedures, including hazard-specific annexes and coordination within the Los Angeles County Operational Area.	Ongoing

Plan/Document	Purpose and Relevance to Hazard Mitigation	Latest Update
Floodplain Management Program (NFIP)	Regulates development in Special Flood Hazard Areas and ensures continued compliance with National Flood Insurance Program requirements.	Ongoing
Stormwater Management & Urban Runoff Programs	Implements drainage standards and best management practices to reduce flooding, erosion, and water quality impacts.	Ongoing
Capital Improvement Program (CIP)	Prioritizes infrastructure investments that enhance resilience, including drainage improvements, slope stabilization, roadway upgrades, and facility hardening.	Regular Updates

Santa Clarita General Plan and Key Elements: The City of Santa Clarita General Plan serves as the City's long-term blueprint for growth, development, and resilience. It establishes policies that guide land use, infrastructure planning, environmental protection, and hazard mitigation. The Safety Element, a key component of the General Plan, specifically addresses disaster preparedness, hazard mitigation, and climate resilience, ensuring that Santa Clarita remains aligned with FEMA guidance and the California State Hazard Mitigation Plan (SHMP).

Other elements of the General Plan also incorporate hazard mitigation principles:

- The Safety Element addresses earthquakes, flooding, dam failure, wildfire, extreme heat, air quality, hazardous materials incidents, evacuation planning, and emergency response coordination, and is aligned with state climate adaptation and hazard mitigation requirements.
- The Land Use Element ensures zoning and development decisions account for natural hazards, guiding growth to reduce exposure in floodplains, hillside areas, fault zones, and the wildland–urban interface.
- The Conservation and Open Space Element promotes resource conservation, stormwater management, habitat protection, and air quality improvements that support flood control, wildfire mitigation, and climate adaptation.
- The Circulation Element includes evacuation routes, emergency transportation planning, and infrastructure resilience strategies to maintain mobility during disaster events.

Local Hazard Mitigation Planning: Prior to the current update, the City adopted its most recent Local Hazard Mitigation Plan (LHMP) in 2021, providing a comprehensive risk assessment and mitigation strategy for earthquakes, flooding, wildfire, dam failure, hazardous materials incidents, extreme heat, drought, and other hazards. The City is currently updating the LHMP to maintain compliance with FEMA's Disaster Mitigation Act of 2000 and to align with the 2023 California State Hazard Mitigation Plan.

In addition, Santa Clarita coordinates with and leverages the Los Angeles County All-Hazards Mitigation Plan, which supports regional collaboration on hazard mitigation, emergency response, and recovery within the Los Angeles County Operational Area.

Zoning Code and Development Regulations: The City's zoning code regulates land use and development to reduce exposure to hazards. Key hazard mitigation measures include:

- Seismic safety standards for buildings in compliance with California seismic codes.
- Floodplain management regulations to control development in flood-prone areas, ensuring compliance with the National Flood Insurance Program (NFIP).
- Fire-resistant building codes and defensible space requirements for structures near wildfire-prone areas.
- Industrial hazard zoning to regulate the storage and handling of hazardous materials in compliance with California Environmental Protection Agency (CalEPA) guidelines.

Climate and Sustainability Planning: Santa Clarita addresses climate mitigation and adaptation through its General Plan Climate Action and Adaptation framework, which focuses on reducing greenhouse gas emissions while addressing climate-driven hazards such as extreme heat, wildfire, drought, and flooding. Strategies include energy efficiency, sustainable transportation, urban forestry, and land use policies that support long-term resilience.

The City also participates in the Southern California Association of Governments (SCAG) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), which incorporates climate resilience, evacuation capacity, and transportation system reliability into regional planning.

Emergency Operations and Floodplain Management: The Santa Clarita Emergency Operations Plan (EOP) provides the framework for disaster response and recovery and is maintained in coordination with the Los Angeles County Office of Emergency Management. The EOP includes hazard-specific annexes, interagency coordination protocols, and public communication procedures and is updated as needed to reflect evolving risks and operational requirements.

The City maintains a Floodplain Management Program to ensure compliance with FEMA floodplain regulations and to reduce flood risk through land use controls, stormwater infrastructure improvements, and coordination with the Los Angeles County Flood Control District.

Capital Improvement Program (CIP): The City's Capital Improvement Program (CIP) prioritizes infrastructure resilience projects, including seismic retrofits for public buildings, storm drainage system enhancements, and road upgrades for emergency access. The CIP is reviewed annually to align investments with hazard mitigation priorities and supports implementation of LHMP action items related to climate resilience and critical facility upgrades.

Zoning & Land Use Policies: The City's zoning and land use policies ensure compatible land use, disaster risk reduction, environmental sustainability, and community resilience. These regulations help mitigate earthquake risks, flooding, hazardous materials exposure, wildfire threats, landslide hazards, and extreme heat impacts.

The following table outlines Santa Clarita's zoning and land use policies, including applicable City Code references where appropriate.

Policy/Code Name	Code Number (if applicable)	Purpose & Relevance to Hazard Mitigation
Zoning Code & Land Use Regulations	Santa Clarita Municipal Code Title 17	Establishes zoning districts and land use controls that guide development patterns and support hazard avoidance and compatible land use in hazard-prone areas.
Floodplain Management Ordinance	Santa Clarita Municipal Code Chapter 10.06	Regulates development in flood hazard areas and supports NFIP participation.
Seismic & Structural Safety (Building Code)	Santa Clarita Municipal Code Title 18 (2022/2025 California Building Code)	Adopts California Building Code seismic design provisions and structural safety standards for new and renovated development.
Fire Code (Hazard Mitigation & Hazardous Materials)	Santa Clarita Municipal Code Title 22	Adopts the California Fire Code to regulate fire safety, hazardous materials storage/handling, and wildfire-related building standards.
Overlay Zones	Santa Clarita Municipal Code Chapter 17.38	Provides additional development standards including special setbacks and design requirements that can influence hazard exposure.
Stormwater & Low-Impact Development	Santa Clarita Municipal Code (Stormwater regulations/engineering standards)	Supports drainage, stormwater quality, and flood risk reduction (basis in SCMC and City engineering standards; NFIP compliance).

Policy/Code Name	Code Number (if applicable)	Purpose & Relevance to Hazard Mitigation
Development Standards	Santa Clarita Municipal Code Title 17 Divisions 5–7	Establishes property development standards that influence site design and may affect vulnerability (e.g., setbacks, land use types).

5.2 Floodplain Management & Compliance

The City enforces zoning, development regulations, and flood mitigation programs to ensure responsible land use in flood-prone areas and to protect life and property from flood hazards. Santa Clarita participates in the National Flood Insurance Program (NFIP) and promotes community-wide flood risk reduction through land use controls, stormwater management, capital improvements, and hazard mitigation planning. Flood risk in the City is primarily associated with the Santa Clara River and tributary drainages, as well as localized stormwater conveyance systems.

The following table provides an overview of Santa Clarita's floodplain management policies, including applicable code references where available.

Policy/Code Name	Code Number (if applicable)	Purpose & Relevance to Flood Mitigation
Floodplain Management Regulations	Santa Clarita Municipal Code Chapter 10.06	Regulates development in FEMA-designated Special Flood Hazard Areas (SFHAs), establishes floodplain development permit requirements, and enforces NFIP minimum standards, including elevation and floodproofing.
Stormwater Management & Low-Impact Development (LID) Requirements	SCCC; Municipal Stormwater Permit	Reduces flood risk through drainage standards, on-site retention, and LID practices that manage runoff and improve conveyance capacity.
Subdivision & Land Development Flood Standards	SCCC (Subdivision and Engineering Standards)	Requires drainage infrastructure and flood hazard considerations in new subdivisions and major developments.
Building Code – Flood Protection Requirements	SCCC Title 18 (California Building Code adoption)	Mandates flood-resistant construction and elevation standards for structures in designated flood hazard areas.
Capital Improvement Program (CIP) – Drainage & Flood Resilience Projects	N/A	Prioritizes storm drain improvements, channel and culvert upgrades, and roadway drainage projects to reduce localized flooding and improve system performance.
National Flood Insurance Program (NFIP) Participation	N/A	Ensures continued compliance with FEMA floodplain regulations, enabling access to federally backed flood insurance and certain disaster assistance.

Policy/Code Name	Code Number (if applicable)	Purpose & Relevance to Flood Mitigation
Community Rating System (CRS) Participation	N/A	Santa Clarita does not currently participate in the CRS program.
Regional Flood Management Coordination	N/A	Coordinates with the Los Angeles County Flood Control District and other regional partners on watershed planning, channel maintenance, and flood control projects.

The City is currently constructing underground infiltration facilities to capture stormwater runoff from drainage areas and support groundwater recharge. These large systems include facilities beneath the Canyon Country Community Center, which can retain up to 9 acre-feet of stormwater runoff that would otherwise flow through the City's local conveyance system. Additional stormwater capture and infiltration projects are in various stages of design and construction, including at Via Princessa Park in Canyon Country and Newhall Park. These projects provide multiple flood-mitigation and water-resource benefits, including reducing localized flooding potential, increasing groundwater volume and availability, and reducing pollutants conveyed to the Santa Clara River.

5.2.1 National Flood Insurance Program (NFIP) Participation

CID	Community Name	County	Init FHBM Identified	Init FIRM Identified	Curr Eff Map Date	Reg-Emer Date	Tribal
060729F	SANTA CLARITA, CITY OF	Los Angeles County	03/23/89	10/24/78	06/02/21	12/02/80	No

The City of Santa Clarita participates in the National Flood Insurance Program (NFIP) and administers floodplain development requirements through its adopted floodplain management ordinance (Santa Clarita Municipal Code Chapter 10.06) and associated development review and permitting procedures. The City's flood exposure is primarily associated with the Santa Clara River corridor and tributary drainages, and the City's current effective FIRM date is June 2, 2021, as shown in the NFIP community status information above.

Flood Zones: FEMA FIRMs for Santa Clarita include Special Flood Hazard Areas (SFHAs) along the Santa Clara River corridor and tributary drainages, with most remaining areas mapped as lower-risk flood zones outside the SFHA. The current effective map date for the community is 06/02/2021. Individual FIRMs can be found in Appendix F.

FIRM Adoption: The community's current effective map date is 06/02/2021.

Implementation Oversight: Floodplain management is administered through the City's Engineering Services / floodplain management program (City Hall main line: (661) 255-4942.

Floodplain Management Regulations and Adoption of NFIP Criteria: Floodplain management and NFIP program execution in the City of Santa Clarita are overseen by the Engineering Services Division within the Department of Public Works. This division is responsible for administering floodplain development permits, ensuring compliance with the City's floodplain ordinance (Santa Clarita Municipal Code Chapter 10.06), coordinating technical review for developments in FEMA-mapped flood hazard areas, and advising on elevation certificates, drainage design, and hazards data used in permitting decisions. The Engineering Services Division also maintains flood hazard documentation, supports plan review with FEMA flood map references, and provides guidance to applicants and developers through the development review and construction permitting process.

Substantial Improvement / Substantial Damage (SI/SD): The City applies NFIP SI/SD requirements through its building and floodplain permitting procedures. When a structure within a FEMA-designated Special Flood Hazard Area (SFHA) is proposed for substantial improvement or is substantially damaged following a flood or other qualifying disaster, the project is reviewed to ensure compliance with current flood-resistant construction and elevation standards. This includes enforcing requirements that buildings be elevated or floodproofed to meet or exceed FEMA and California Building Standards Code criteria.

Repetitive Loss Properties (RLPs): Based on the most recent FEMA NFIP Community Status Book and NFIP repetitive loss data for planning purposes, the City of Santa Clarita has four (4) confirmed Repetitive Loss Properties. These properties, identified through the NFIP dataset, reflect structures that have had multiple flood insurance claims over time. The City monitors RLP status as part of ongoing flood risk assessment and uses this information to prioritize flood mitigation projects and outreach. As of the latest NFIP data available for planning, no structures in Santa Clarita meet the current criteria for Severe Repetitive Loss (SRL).

Community Rating System (CRS) Participation: Santa Clarita participates in the FEMA National Flood Insurance Program's Community Rating System (CRS), which provides incentives in the form of flood insurance premium discounts for communities that implement advanced floodplain management activities beyond the NFIP minimum standards. According to the most recent NFIP/CRS documentation, Santa Clarita is designated as CRS Class 6, corresponding to a 20 percent premium discount for NFIP policyholders in Special Flood Hazard Areas within the City. The City's CRS participation supports public education, flood data maintenance, outreach, and floodplain mapping coordination.

Regional Coordination: The City coordinates flood risk management, stormwater planning, and drainage infrastructure activities with regional partners, including the Los Angeles County Flood Control District, the Los Angeles County Department of Public Works, and other Operational Area partners. This cooperation includes watershed and channel maintenance planning, regional stormwater system coordination, shared modeling and mapping efforts, and integration of mitigation priorities across jurisdictional boundaries. Regional coordination also supports emergency response planning, post-event assessments, and capital improvement programming that complements local floodplain management and mitigation actions.

5.3 Administrative & Technical Capabilities

5.3.1 Local Staff & Agencies Responsible for Mitigation

The City of Santa Clarita distributes hazard mitigation responsibilities across multiple departments, with emergency management functions led through the City Manager's Office in coordination with the Los Angeles County Office of Emergency Management. Unlike jurisdictions with a standalone emergency management department, Santa Clarita integrates disaster response, hazard mitigation, and preparedness functions across City departments, including Public Works, and Community Development, in addition to the Los Angeles County Sheriff's Department and the Los Angeles County Fire Department.

Los Angeles County Fire Department (LACoFD) – Santa Clarita Valley: Fire protection and emergency response services within Santa Clarita are provided by the Los Angeles County Fire Department (LACoFD) under contract. LACoFD serves as the primary agency for fire suppression, emergency medical services, hazardous materials response, and wildfire mitigation. Key responsibilities include operation of fire stations serving the Santa Clarita Valley, wildfire prevention and defensible space enforcement, hazardous materials response, and participation in emergency response coordination during disasters. LACoFD supports evacuation operations, damage assessment, and interagency coordination through the County's emergency management structure.

Los Angeles County Sheriff's Department (LASD) – Santa Clarita Valley: Law enforcement services are provided by the Los Angeles County Sheriff's Department (LASD). LASD supports hazard mitigation through evacuation management, traffic control, public safety enforcement, and protection of critical facilities during emergencies. LASD also plays a key role in disaster communications, coordination with regional law enforcement mutual aid partners, and maintaining public order during response and recovery operations,

Public Works Department: The City's Public Works Department supports hazard mitigation, emergency response, and recovery through infrastructure maintenance, engineering review, and capital project implementation. Key responsibilities include maintaining transportation infrastructure, coordinating stormwater and drainage system improvements, supporting debris clearance and damage assessments following disasters and implementing capital improvements that enhance infrastructure resilience. Public Works plays a central role in maintaining evacuation routes and restoring critical infrastructure following hazard events.

The Engineering Services Division, operating within Public Works, administers the City's floodplain management and stormwater coordination functions. Responsibilities include review of development proposals in FEMA-mapped flood hazard areas, enforcement of floodplain management requirements under Santa Clarita Municipal Code Chapter 10.06, coordination with the Los Angeles County Flood Control District on drainage infrastructure, and technical review of grading, drainage, and erosion control measures for new development.

Community Development Department: The Community Development Department, including Planning, Building & Safety, and Code Enforcement functions, ensures that land use decisions, construction standards, and regulatory enforcement align with hazard mitigation objectives. Responsibilities include administering zoning and development standards that account for flood hazards, wildfire risk, seismic conditions, and hillside stability; enforcing California Building Code requirements; conducting post-disaster building safety evaluations; and enforcing municipal code provisions related to public safety and hazard reduction.

Interagency & Regional Coordination: Santa Clarita coordinates hazard mitigation and emergency preparedness activities with a range of federal, state, and regional partners. Key coordination partners include:

- **Los Angeles County Office of Emergency Management (OEM**) – Provides operational area coordination, emergency planning support, and disaster response integration.
- **Los Angeles County Flood Control District / Department of Public Works** – Manages regional flood control facilities, watershed planning, and channel infrastructure affecting the Santa Clarita Valley.
- **Southern California Association of Governments (SCAG)** – Supports regional hazard mitigation, climate adaptation, and transportation resilience planning.
- **California Governor's Office of Emergency Services (Cal OES)** – Provides guidance, training, and grant funding for hazard mitigation and emergency management.
- **Federal Emergency Management Agency (FEMA**) – Provides policy guidance, technical assistance, and mitigation funding, including oversight of NFIP participation and hazard mitigation grant programs.

5.4 Financial Capabilities

5.4.1 Local & State Funding Sources

The City of Santa Clarita has access to a variety of financial resources to support hazard mitigation, emergency preparedness, and infrastructure resilience. These include local funds, state grants, and regional financing mechanisms that help the City plan, implement, and sustain hazard mitigation strategies. The City's financial strategy draws from General Fund allocations, Capital Improvement Program (CIP) investments, enterprise funds, and external grants.

The following table summarizes key local and state funding sources relevant to Santa Clarita's hazard mitigation priorities:

Funding Source	Type	Purpose & Relevance to Hazard Mitigation
General Fund	Local	Supports emergency preparedness, disaster response, and hazard mitigation planning, including staff, training, and operational costs.
Capital Improvement Program (CIP) Budget	Local	Finances infrastructure resilience projects such as storm drainage improvements, roadway upgrades for emergency access, slope stabilization, and critical facility hardening.
Local Sales & Property Tax Revenues	Local	Provides discretionary funding for public safety facilities, emergency response services, and infrastructure improvements that reduce hazard vulnerability.
Stormwater Utility / Enterprise Funds	Local (Enterprise Fund)	Supports stormwater infrastructure, drainage system maintenance, and compliance with floodplain management requirements.
Public Safety Augmentation Fund (PSAF)	Local	Supports fire, law enforcement, and emergency response services, including disaster-related public safety needs.
Measure M – Los Angeles County Transportation Sales Tax	Regional	Funds transportation improvements, including roadway safety, evacuation route reliability, and transportation system resilience.
California Disaster Assistance Act (CDAA)	State	Provides state funding for post-disaster recovery, hazard mitigation, and emergency protective measures.

Funding Source	Type	Purpose & Relevance to Hazard Mitigation
Cal OES Hazard Mitigation Grant Program (HMGP – State Administration)	State/Federal	Administers FEMA hazard mitigation funding for flood, wildfire, seismic, and infrastructure resilience projects.
California Fire Safe Council (CFSC) Grants	State	Supports wildfire prevention, vegetation management, and community wildfire mitigation efforts.
California Climate Resilience & Adaptation Programs	State	Provides funding for climate adaptation, extreme heat mitigation, and resilience planning initiatives.
SCAG Sustainable Communities Program (SCP)	Regional (State-Administered)	Supports integrated land use, transportation, and climate resilience planning efforts.
California Transportation Commission – Active Transportation Program (ATP)	State	Funds transportation safety and resilience projects that can support evacuation, access, and emergency mobility.
Los Angeles County Flood Control District Capital Programs	Regional	Supports flood control infrastructure, channel improvements, and watershed-scale flood risk reduction projects affecting the Santa Clarita Valley.

5.4.2 Federal Programs

Santa Clarita is eligible to pursue multiple federal funding sources for hazard mitigation and recovery. These programs support investments in disaster-resilient infrastructure, housing, flood control, energy resilience, and public safety.

Funding Program	Administering Agency	Purpose & Relevance to Hazard Mitigation
Hazard Mitigation Grant Program (HMGP)	FEMA	Provides post-disaster funding for long-term mitigation projects, including flood mitigation, seismic retrofits, wildfire risk reduction, and infrastructure hardening.
Flood Mitigation Assistance (FMA)	FEMA	Supports planning and project grants to reduce flood risk and improve NFIP compliance, including elevation and acquisition projects.
Public Assistance (PA) Program	FEMA	Provides reimbursement for eligible emergency response, debris removal, and repair or replacement of damaged public infrastructure following declared disasters.

Funding Program	Administering Agency	Purpose & Relevance to Hazard Mitigation
Community Development Block Grant – Disaster Recovery (CDBG-DR)	HUD	Provides supplemental disaster recovery funding for housing, infrastructure, and resilience activities when Congress appropriates funds following major disasters.
RAISE / INFRA Transportation Grants	U.S. Department of Transportation	Funds transportation resilience projects, including evacuation route improvements, bridge retrofits, and climate-adaptive transportation infrastructure.
U.S. Army Corps of Engineers Flood Risk Management Programs	USACE	Supports planning and construction of flood risk reduction projects, including channel improvements and watershed-scale flood mitigation.
EPA Climate Pollution Reduction Grants (CPRG)	U.S. Environmental Protection Agency	Supports climate and energy planning and implementation projects that can include resilience co-benefits such as heat mitigation and energy system reliability.

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5.5 Community Partnerships & Collaboration

5.5.1 Public-Private Partnerships

The City of Santa Clarita maintains and leverages public-private partnerships (PPPs) that support hazard mitigation, emergency response, and community resilience. The City collaborates with businesses, utility providers, nonprofit organizations, transportation operators, and regional agencies to enhance disaster preparedness, infrastructure resilience, and economic continuity in the face of natural and human-caused hazards.

The following table summarizes the City's key public-private partnerships and their roles in hazard mitigation.

Public-Private Partner	Sector	Role in Hazard Mitigation & Resilience
Santa Clarita Valley Chamber of Commerce	Business / Industry	Supports business continuity planning, emergency preparedness outreach, and coordination with local businesses during response and recovery.
Southern California Edison (SCE)	Energy & Utilities	Provides grid resilience upgrades, wildfire mitigation measures, Public Safety Power Shutoff (PSPS) coordination, and power restoration planning.
Santa Clarita Valley Water Agency (SCV Water)	Water & Utilities	Manages water supply reliability, regional stormwater and groundwater programs, drought response, and coordination on flood and infrastructure resilience.
Southern California Gas Company (SoCalGas)	Energy & Utilities	Coordinates gas system safety, seismic resilience, and emergency shutoff and restoration procedures.
Southern California Association of Governments (SCAG)	Regional Planning	Provides technical assistance, grant support, and regional coordination for climate adaptation, transportation resilience, and hazard mitigation planning.
Union Pacific Railroad & Freight Transportation Operators	Transportation	Coordinates rail safety, hazardous materials transport protocols, and infrastructure resilience affecting regional supply chains and evacuation corridors.
Local Industrial, Commercial, and Logistics Businesses	Industry & Trade	Implements hazardous materials safety, emergency response training, and facility-level mitigation and retrofitting measures.
American Red Cross & Community-Based Organizations (CBOs)	Nonprofit / Public Health	Provides disaster relief, emergency sheltering support, and public education related to disaster preparedness and recovery.

Public-Private Partner	Sector	Role in Hazard Mitigation & Resilience
Homeowner Associations (HOAs) & Property Owners	Residential	Supports wildfire preparedness, flood mitigation measures, and seismic resilience actions within private developments.

5.5.2 Regional and Multi-Jurisdictional Coordination

The City of Santa Clarita is integrated into regional and multi-jurisdictional hazard mitigation efforts through coordination with Los Angeles County agencies, regional planning organizations, mutual aid networks, and state and federal partners. Given the City's location within northern Los Angeles County, exposure to hazards such as wildfire, earthquakes, flooding, extreme heat, and hazardous materials incidents, and its role within major transportation corridors, intergovernmental coordination is critical to effective mitigation and response.

The table below summarizes the City's regional and multi-jurisdictional partners.

Agency/Organization	Jurisdiction / Scope	Role in Hazard Mitigation & Resilience
Los Angeles County Office of Emergency Management (OEM)	Countywide	Coordinates disaster response, mutual aid, and Operational Area emergency planning.
Los Angeles County Fire Department (LACoFD)	Countywide	Provides fire suppression, wildfire mitigation, hazardous materials response, and emergency medical services.
Los Angeles County Flood Control District / Department of Public Works	Countywide	Manages regional flood control facilities, watershed planning, and drainage infrastructure affecting the Santa Clarita Valley.
Southern California Association of Governments (SCAG)	Regional	Supports climate adaptation, sustainable land use, and transportation resilience planning.
California Governor's Office of Emergency Services (Cal OES)	Statewide	Administers hazard mitigation grants, emergency planning guidance, and disaster response coordination.
Federal Emergency Management Agency (FEMA) – Region IX	Federal	Provides mitigation funding, technical assistance, and disaster response support.
National Weather Service (NWS) – Los Angeles/Oxnard	Regional	Issues weather forecasts, flood warnings, heat advisories, and wildfire weather alerts affecting Santa Clarita.
U.S. Army Corps of Engineers (USACE)	Federal	Supports flood risk management planning and large-scale flood mitigation projects.

Agency/Organization	Jurisdiction / Scope	Role in Hazard Mitigation & Resilience
California Department of Transportation (Caltrans) – District 7	Statewide	Coordinates transportation infrastructure resilience and evacuation route planning.
Los Angeles County Sheriff's Department (LASD)	Countywide	Provides law enforcement mutual aid, security coordination, evacuation support, and disaster response services.
California Department of Water Resources (DWR)	Statewide	Supports floodplain management, groundwater sustainability, and drought mitigation programs.
South Coast Air Quality Management District (SCAQMD)	Regional	Monitors air quality and supports mitigation related to extreme heat and wildfire smoke impacts.

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5.6 Strengths, Weaknesses, Opportunities, and Threats (SWOT) Analysis

The SWOT analysis provides a detailed assessment of Santa Clarita's capabilities, challenges, potential improvements, and external risks in the context of hazard mitigation and resilience planning. This section evaluates internal strengths and weaknesses (factors within the City's control) and external opportunities and threats (factors influenced by regional, state, and federal conditions).

The table below provides a summary of the SWOT analysis, followed by detailed explanations of each category.

Category	Key Findings
Strengths	Strong emergency response capabilities through County-provided services, an adopted Local Hazard Mitigation Plan and General Plan Safety Element, established public-private partnerships, and active participation in regional planning efforts.
Weaknesses	Aging infrastructure in some areas, limited dedicated funding for large-scale mitigation projects, reliance on County agencies for emergency response, and continued exposure to extreme heat and wildfire risks.
Opportunities	Access to state and federal funding programs, expanding climate adaptation and wildfire mitigation initiatives, regional transportation and flood control projects, and opportunities to strengthen public-private partnerships.
Threats	Increasing climate risks (extreme heat, wildfire, flooding), seismic vulnerability, hazardous materials incidents along major transportation corridors, energy grid reliability concerns, and regional water supply constraints.

Strengths: The City of Santa Clarita has several internal capabilities that enhance its ability to mitigate, respond to, and recover from hazards. Fire protection, emergency medical services, hazardous materials response, and wildfire mitigation are provided by the Los Angeles County Fire Department (LACoFD), while law enforcement, evacuation support, and public safety coordination are provided by the Los Angeles County Sheriff's Department (LASD). These services contracted through LA County offer substantial operational capacity and access to regional mutual aid resources during large-scale emergencies.

The City benefits from established emergency coordination procedures through the Los Angeles County Operational Area, enabling integrated response and information sharing during disasters. Additionally, the City has advanced hazard mitigation planning through adoption of its Local Hazard Mitigation Plan (LHMP) and the General Plan Safety Element, which integrate disaster risk reduction policies into land use, emergency preparedness, and climate adaptation efforts. The City also coordinates with regional partners such as Los Angeles County agencies and the Southern California Association of Governments (SCAG) to support multi-jurisdictional planning and resilience strategies.

Another key strength is the City's public-private partnerships and coordination with utility and water agencies. These include Santa Clarita Valley Water Agency (SCV Water) for regional water supply reliability, stormwater management, and drought response; Southern California Edison (SCE) for wildfire mitigation and electrical grid reliability; and Southern California Gas Company (SoCalGas) for system safety and seismic resilience. Santa Clarita's diverse residential, commercial, and industrial base also supports economic stability and provides opportunities for business continuity planning and private-sector investment in resilience initiatives.

Weaknesses: Despite its strengths, Santa Clarita faces internal challenges that affect implementation of large-scale hazard mitigation projects. Aging infrastructure, including older public facilities, roadways, and drainage systems, requires continued investment in seismic retrofits, flood mitigation, slope stabilization, and heat-resilient design. Portions of the stormwater and drainage system rely on regional flood control facilities managed by Los Angeles County, contributing to localized flooding risks during high-intensity storm events.

Santa Clarita has limited dedicated funding for major mitigation projects. While the General Fund and Capital Improvement Program (CIP) support infrastructure maintenance and targeted upgrades, larger projects such as major flood control improvements, seismic retrofits, and expanded cooling infrastructure often depend on competitive state and federal grants.

Reliance on County agencies for emergency response coordination is another constraint. Although this regional approach provides substantial resources, major wildfire events, earthquakes, or concurrent regional disasters may strain response capacity and introduce coordination challenges. Extreme heat presents an additional weakness, particularly for low-income residents, elderly populations, and outdoor workers, where prolonged heat events increase public health risks and energy demand, especially in areas with limited tree canopy or access to cooling resources.

Opportunities: Santa Clarita has access to multiple external opportunities to strengthen hazard resilience. The City is eligible for state and federal mitigation funding, including FEMA's Hazard Mitigation Grant Program (HMGP), Flood Mitigation Assistance (FMA), and Cal OES-administered resilience and hazard mitigation grants. Continued participation and advancement in the Community Rating System (CRS) offers opportunities to improve floodplain management practices and reduce flood insurance premiums for residents.

Emerging climate adaptation initiatives provide additional opportunities. Regional transportation and land-use programs administered through SCAG, as well as state programs addressing extreme heat, wildfire resilience, and climate adaptation, can support planning and infrastructure investments. The City may also leverage partnerships with utilities and regional agencies to advance distributed energy resources, cooling strategies, wildfire mitigation projects, and data-driven risk monitoring.

Expanded public-private partnerships offer further opportunity. Collaboration with utilities, major employers, logistics operators, and community organizations can support backup power planning, evacuation coordination, facility hardening, and continuity of operations. Participation in utility wildfire mitigation and Public Safety Power Shutoff (PSPS) planning efforts provides additional avenues to reduce power-related vulnerability.

Threats: Santa Clarita faces several external threats that could exacerbate hazard vulnerabilities. Climate change is increasing the frequency and severity of extreme heat, wildfire, and intense rainfall events, heightening risks to public health, infrastructure, and emergency response systems. Prolonged drought and regional water supply constraints pose long-term challenges for water reliability and fire suppression capacity.

Seismic risk remains significant due to proximity to major fault systems, including the San Andreas Fault. A major earthquake could damage transportation infrastructure, utilities, and older structures, particularly unreinforced or pre-code buildings. Santa Clarita's location along major transportation corridors, including Interstate 5, State Route 14, and regional rail lines, also presents ongoing hazardous materials risks associated with freight movement and industrial activity.

Energy grid reliability is an increasing concern. Wildfire-related PSPS events, grid strain during extreme heat, and other disruptions threaten service continuity. Extended outages can disproportionately affect residents reliant on electricity for medical devices, cooling, and communications. As electrification increases and climate extremes intensify, ensuring energy resilience will remain a critical challenge for Santa Clarita's hazard mitigation and emergency management efforts.

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5.7 Opportunities for Improvement

The City of Santa Clarita has made substantial progress in hazard mitigation through regulatory planning, regional emergency management coordination, and ongoing infrastructure investments. However, opportunities remain to further strengthen resilience, improve program integration, and address evolving hazard and climate risks. By refining regulatory mechanisms, administrative capacity, funding strategies, and public engagement, the City can continue to enhance its mitigation capabilities consistent with FEMA and Cal OES guidance.

5.7.1 Regulatory and Planning Mechanisms

The City of Santa Clarita has integrated hazard mitigation policies into its General Plan Safety Element and related planning documents; however, opportunities exist to further strengthen implementation and consistency across regulatory programs. Continued emphasis on seismic safety, wildfire risk reduction, floodplain management, and hillside development standards would reduce long-term risk exposure. Enhancing consistency between grading, drainage, and land development review procedures and adopted hazard mitigation priorities would further support risk-informed development decisions.

As part of the next General Plan Safety Element update and adoption cycle, the City should continue to identify staff time, consultant support, and budget resources needed to incorporate the LHMP by reference, maintain consistency with AB 2140 and SB 379 requirements, and integrate updated hazard, climate adaptation, evacuation, and mitigation information into the Safety Element. This will help ensure that the LHMP remains connected to long-range land use, capital improvement, emergency management, and resilience planning.

The City also has opportunities to strengthen alignment between local hazard mitigation planning and regional climate adaptation and transportation resilience efforts. Coordination with the Southern California Association of Governments (SCAG) and Los Angeles County planning initiatives can support integrated approaches to extreme heat mitigation, wildfire resilience, and evacuation route reliability. Continued refinement of low-impact development (LID) and stormwater management practices would further reduce localized flood risk.

5.7.2 Administrative and Technical Capabilities

The City of Santa Clarita relies on a distributed, interagency model for hazard mitigation and emergency management, with City departments coordinating closely with Los Angeles County agencies that provide fire protection, law enforcement, flood control, and operational area coordination. While this structure provides access to substantial regional expertise and resources, opportunities exist to further formalize internal coordination related to mitigation planning, grant development, and post-disaster recovery integration.

Strengthening internal tracking of mitigation actions, grant opportunities, and implementation progress would enhance administrative capacity. Continued coordination with Los Angeles County Fire Department, Sheriff's Department, Public Works, Cal OES, and FEMA supports technical assistance, training access, and program compliance. Improved data sharing related

to hazard exposure, damage assessments, and infrastructure condition would further support informed decision-making.

5.7.3 Financial Resources

While Santa Clarita has access to local funding mechanisms and state and federal grant programs, diversifying and coordinating funding sources remains an opportunity for improvement. Continued pursuit of FEMA Hazard Mitigation Assistance programs, state mitigation grants administered through Cal OES, and transportation and infrastructure funding aligned with resilience objectives can support implementation of priority actions.

Integrating mitigation funding considerations into capital planning and long-range infrastructure investment decisions would further strengthen implementation capacity. The City should consider integrating insurability planning into ongoing resilience and economic development planning. Insurability planning focuses on the relationships between:

- Resilience/mitigation investments and insurance affordability and accessibility.
- Scope and nature of insurance protection gaps and the community's ability to respond/recover from catastrophes.
- Cost and availability of insurance and its effect on property valuations and the tax base.

Given the growing impact of extreme weather on insurance markets, Santa Clarita should assess provider stability, insurance coverage options, and innovative risk financing solutions. Exploring alternative financial tools, such as Geologic Hazard Abatement Districts (GHADs) and regional taxing authorities, could create sustainable, long-term funding mechanisms for hazard mitigation projects. Additionally, parametric insurance models and resilience bonds-which provide pre-determined payouts based on hazard intensity rather than damage assessments-could help the City secure financial resources for rapid disaster recovery.

5.7.4 Community Outreach and Education

Enhancing community engagement and public education efforts can improve disaster preparedness and response readiness. Developing multilingual hazard preparedness materials, implementing targeted outreach programs, and working with schools, faith-based organizations, and local businesses could increase participation in emergency preparedness initiatives.

Leveraging existing community facilities and County-supported programs for emergency information dissemination, cooling resources, and evacuation messaging can enhance public engagement without duplicating services.

5.7.5 Resilience and Adaptation

Santa Clarita faces increasing exposure to climate-driven hazards, particularly extreme heat, wildfire, post-fire flooding, debris flows, and prolonged power outages. These evolving conditions present opportunities to further integrate climate adaptation principles into hazard mitigation planning, land use decisions, and infrastructure investments. Continued incorporation of future climate conditions into risk assessments, capital improvement planning, and facility design standards would strengthen long-term resilience and reduce cumulative hazard exposure.

Opportunities also exist to expand the use of nature-based solutions, heat-mitigation strategies, and energy resilience measures, including urban tree canopy expansion, cool surface treatments, shaded public spaces, and backup power for critical facilities. Integration of these measures into municipal projects and private development standards can help reduce both immediate hazard impacts and long-term operational costs.

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SECTION 6 – MITIGATION STRATEGY

Element C: Mitigation Strategy Requirements
C1. Does the plan document each jurisdiction's existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs? (Requirement 44 CFR § 201.6(c)(3))
C2. Does the plan address each jurisdiction's participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement 44 CFR § 201.6(c)(3)(ii))
C3. Does the plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? (Requirement 44 CFR § 201.6(c)(3)(i))
C4. Does the plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure? (Requirement 44 CFR § 201.6(c)(3)(ii))
C5. Does the plan contain an action plan that describes how the actions identified will be prioritized (including cost benefit review), implemented and administered by each jurisdiction? (Requirement 44 CFR § 201.6(c)(3)(iii)); (Requirement 44 CFR § 201.6(c)(3)(iv))

This section establishes the City of Santa Clarita's strategy for reducing long-term risk from the hazards identified in this plan. Building on the findings of the hazard identification, vulnerability assessment, and capability assessment, it translates those findings into a practical framework for action. The mitigation strategy identifies the goals, objectives, and actions that will guide the City's efforts to prevent losses, reduce exposure, strengthen critical systems, and improve resilience to both natural and human-caused hazards over time.

6.1 Introduction

The Mitigation Strategy serves as a comprehensive guide for the City of Santa Clarita in its pursuit of enhancing disaster resilience by reducing vulnerability to identified hazards. Through the identification of specific mitigation goals and objectives, strategies and initiatives are formulated to prevent, minimize, and alleviate the impacts of both natural and human-caused disasters on the local population and property within the planning area.

City departments make recommendations to the City Manager and the Santa Clarita City Council regarding prioritization, phasing, and funding of hazard mitigation actions and capital investments. Capital Improvement Projects and other mitigation initiatives may receive public hearings as either part of the budgeting process or as individual staff items for City Council consideration, which allows for public input.

6.2 Vision, Goals and Objectives

6.2.1 Integration with FEMA and State Resilience Priorities

This mitigation framework reflects a dual commitment to both federal and state resilience priorities by aligning closely with FEMA's 2025 Local Mitigation Planning Policy Guide and California's 2023 State Hazard Mitigation Plan (SHMP). Santa Clarita's goals and objectives are designed to address hazard mitigation through a comprehensive, equity-centered, and climate-resilient approach consistent with both agencies' strategic direction.

At the federal level, this plan supports FEMA's emphasis on risk-informed decision-making, community-based mitigation, planning for future conditions and proactive pre-disaster investment. Equally important is the City's alignment with the State of California's resilience agenda. The mitigation strategy integrates core priorities identified in the 2023 SHMP, including climate adaptation, environmental justice, housing and infrastructure resilience, and wildfire risk reduction.

The plan also aligns with state initiatives such as the Safeguarding California Plan, Cal OES climate adaptation guidance, and cross-sector risk reduction strategies promoted by the California Natural Resources Agency, California Air Resources Board (CARB), and California Department of Water Resources. Santa Clarita's mitigation framework supports state priorities related to wildfire preparedness, flood and debris flow mitigation, extreme heat response, seismic safety, and air quality protection.

Through coordination with SCAG's Sustainable Communities Strategy, Los Angeles County regional hazard mitigation efforts, and state resilience programs, the City of Santa Clarita strengthens its ability to compete for and implement funding from programs such as the California Climate Resilience Fund, Integrated Climate Adaptation and Resiliency Program (ICARP), HUD's CDBG-MIT and CDBG-DR, and FEMA's HMGP and FMA programs.

Mitigation Vision

The planning team established the following vision statement after reviewing existing City and regional plans, conducting risk assessments, and incorporating stakeholder input.

"To protect the lives, health, safety, and economic stability of Santa Clarita residents, workers, and institutions by reducing the long-term risk of hazards through sustainable, equitable, and coordinated strategies that increase community resilience."

Mitigation Goals and Objectives

The 2026 LHMP update carries forward the City's existing mitigation goals rather than replacing them. The 2021 plan identified and prioritized the following five goals:

- Protect Life and Property;
- Enhance Natural Systems;
- Augment Emergency Services;
- Encourage Partnerships and Implementation; and
- Promote Public Awareness.

Goal	Objective(s)
1. Protect Life and Property	**1.1** Identify vulnerable people, facilities, and systems. **1.2** Improve retrofitting and preparedness at essential facilities and infrastructure. **1.3** Reduce losses to homes, businesses, and public assets in hazard-prone areas.
2. Enhance Natural Systems	**2.1** Expand nature-based projects that reduce flood, heat, erosion, and wildfire risk. **2.2** Coordinate mitigation with habitat, open space, and watershed efforts. **2.3** Support land use that protects natural systems and reduces hazard exposure.
3. Augment Emergency Services	**3.1** Improve the reliability of response facilities, evacuation routes, communications, and lifelines. **3.2** Strengthen preparedness, training, and coordination for response and recovery. **3.3** Improve access and operational capacity during hazard events.
4. Encourage Partnerships and Implementation	**4.1** Maintain coordination for implementation, monitoring, and plan maintenance. **4.2** Pursue funding for priority mitigation projects. **4.3** Coordinate with County, regional, state, federal, utility, and other partners.
5. Promote Public Awareness	**5.1** Expand public outreach on key hazards and preparedness. **5.2** Provide multilingual, accessible information for residents, businesses, schools, and vulnerable groups. **5.3** Increase understanding of actions that reduce risk over time.

6.3 Mitigation Actions

The action items are a listing of activities in which City agencies and citizens can be engaged to reduce risk.

Hazard	Air Quality
Action	Clean Air Resilience Hub Expansion
Description	Upgrade public facilities with HEPA/MERV-13 filtration, interior air quality monitoring displays, and solar backup to operate during smoke + outage events.
Vulnerability	Children, seniors, asthma patients
Goals	Public Health Protection
Coordinating Agency	Public Works, Neighborhood Services
Funding Source	FEMA HMGP, CARB Clean Air Centers
Timeline	1–2 years
Priority	High
In 2021 LHMP Update?	No

Hazard	Dam Failure
Action	Coordinated Dam Emergency Action Plan (EAP) Exercise
Description	Conduct multi-agency tabletop and full-scale exercises simulating Castaic or Bouquet Dam breach scenarios, including notification timelines, evacuation sequencing, traffic control, and shelter activation.
Vulnerability	Emergency responders, lifelines, critical facilities
Goals	Interagency Coordination, Evacuation Readiness, Continuity Planning
Coordinating Agency	LA County OEM, City Manager's Office
Funding Source	FEMA HMGP, Cal OES Emergency Management Grants
Timeline	1–2 years
Priority	Medium
In 2021 LHMP Update?	No

Hazard	Dam Failure
Action	Downstream Floodproofing for Critical Facilities
Description	Elevate or floodproof vulnerable pump stations, substations, signal cabinets, and communications infrastructure within inundation zones. Conduct site-specific evaluations and prioritize facilities critical to water, wastewater, and emergency communications continuity.
Vulnerability	Lifeline infrastructure, utilities, transportation systems
Goals	Continuity of Operations, Infrastructure Protection
Coordinating Agency	Public Works
Funding Source	FEMA HMGP, FEMA FMA, Cal OES Hazard Mitigation Grants
Timeline	2–4 years
Priority	Medium
In 2021 LHMP Update?	No

Hazard	Drought
Action	Advanced Water Recycling & Reuse Expansion
Description	Expand recycled water distribution for parks, medians, commercial landscapes, and select industrial users to reduce potable demand during drought. Include pipeline extensions, storage optimization, and customer incentives to reduce reliance on State Water Project supplies.
Vulnerability	Water supply reliability, irrigation-dependent users
Goals	Long-Term Water Security, Demand Reduction
Coordinating Agency	SCV Water Agency, Public Works
Funding Source	State Revolving Fund (SRF), FEMA HMGP, DWR Integrated Regional Water Management Grants
Timeline	3–5 years
Priority	High
In 2021 LHMP Update?	No

Hazard	Drought
Action	Drought-Resilient Landscaping Ordinance Update
Description	Strengthen water-efficient landscaping standards for new development and major remodels, including turf limits, expanded native plant use, and improved irrigation efficiency. Provide retrofit incentives and outreach to accelerate voluntary turf replacement.
Vulnerability	Residential and commercial landscapes
Goals	Demand Reduction, Climate Adaptation, Urban Heat Reduction
Coordinating Agency	Planning Division
Funding Source	Cal OES, State Water Efficiency Grants, Local Utility Incentive Programs
Timeline	1–2 years
Priority	Medium
In 2021 LHMP Update?	No

Hazard	Earthquake
Action	Critical Bridge & Overpass Seismic Retrofit Acceleration
Description	Coordinate with Caltrans and LA County to prioritize seismic retrofits for I-5/SR-14 interchanges, Soledad Canyon bridges, and key Santa Clara River crossings to prevent regional isolation.
Vulnerability	Transportation lifelines, commuters, emergency access routes
Goals	Lifeline Continuity, Regional Mobility
Coordinating Agency	Public Works, Caltrans, LA County DPW
Funding Source	FEMA HMGP, Caltrans SHOPP, BRIC
Timeline	2–5 years
Priority	High
In 2021 LHMP Update?	No

Hazard	Earthquake
Action	Seismic Retrofitting of Public Infrastructure
Description	Evaluate, prioritize, and implement seismic retrofits or replacements for vulnerable City-owned infrastructure, including bridges, retaining walls, public facilities, emergency response facilities, operations yards, and other structures needed for post-earthquake response and continuity of services. Prioritize based on age, construction type, known deficiencies, liquefaction or slope hazards, emergency access, service population, and support for evacuation, sheltering, utilities, or emergency operations.
Vulnerability	Older public facilities, bridges, retaining walls, lifelines, staff, and service-dependent residents
Goals	Life Safety; Property Protection; Seismic Resilience
Coordinating Agency	Public Works; Engineering; Facilities; Emergency Management; Building & Safety
Funding Source	FEMA HMGP/BRIC; Cal OES; FHWA/Caltrans; City CIP; General Fund
Timeline	1–3 years assessment; 3–10 years implementation
Priority	High
In 2021 LHMP Update?	Partial

Hazard	Epidemic/Pandemic
Action	Public Facility Ventilation Upgrade Program
Description	Evaluate and enhance indoor air quality measures in City facilities to reduce airborne disease transmission and improve protection during smoke or public health events.
Vulnerability	Seniors, City staff, public visitors
Goals	Infection Control, Health Protection, Resilience of Public Services
Coordinating Agency	Facilities Maintenance
Funding Source	FEMA HMGP, CDC Public Health Emergency Preparedness (PHEP) Grants
Timeline	1–3 years
Priority	High
In 2021 LHMP Update?	No

Hazard	Extreme Heat
Action	Heat Emergency Response & Cooling Access Expansion
Description	Expand cooling center capacity, mobile cooling resources, extended hours during heat waves, and targeted outreach using heat-health triggers (e.g., consecutive days >105°F). Integrates LA County Heat-Health Action Plan thresholds.
Vulnerability	Seniors, unhoused populations, medically vulnerable residents
Goals	Public Health, Life Safety, Equity
Coordinating Agency	Neighborhood Services, LA County Fire Department, LA County Public Health
Funding Source	Cal OES, FEMA HMGP (C&CB), State Public Health Grants
Timeline	1–2 years
Priority	High
In 2021 LHMP Update?	No

Hazard	Extreme Heat
Action	Urban Heat Mitigation: Shade, Cool Pavements & Tree Canopy
Description	Implement heat mitigation projects using shade structures, high-albedo pavements, and drought-tolerant tree canopy expansion along priority corridors and in heat-burdened neighborhoods, consistent with SCAG and CARB guidance.
Vulnerability	Outdoor workers, transit users, elderly, low-income neighborhoods
Goals	Heat Risk Reduction, Public Health, Climate Adaptation
Coordinating Agency	Public Works, Planning Division, Community Services
Funding Source	Cal OES Extreme Heat Grants, CARB
Timeline	2–5 years
Priority	High
In 2021 LHMP Update?	No

Hazard	Flooding
Action	Santa Clara River Floodplain & Channel Capacity Enhancement
Description	Partner with LA County Flood Control District to implement levee improvements, overflow basin restoration, sediment removal, and targeted channel upgrades along the Santa Clara River near growth areas. Apply multi-benefit design to preserve riparian habitat, maintain floodplain function, and refine hydraulic modeling for increasing atmospheric river intensity.
Vulnerability	River-adjacent residential and commercial areas; redevelopment districts; transportation corridors
Goals	Flood Risk Reduction, Property Protection, Infrastructure Resilience
Coordinating Agency	Public Works, LA County Flood Control
Funding Source	FEMA HMGP, FEMA FMA, USACE Section 205/1135,
Timeline	3–5 years
Priority	High
In 2021 LHMP Update?	Partially

Hazard	Flooding
Action	NFIP & CRS Compliance Program
Description	Continue review of development permits in flood hazard areas to ensure compliance with NFIP and Community Rating System requirements, including multi-division plan review and floodplain documentation.
Vulnerability	Floodplain properties
Goals	Flood Risk Reduction, Regulatory Compliance
Coordinating Agency	Public Works, Community Development
Funding Source	General Fund, Permit Fees
Timeline	Ongoing
Priority	High
In 2021 LHMP Update?	Yes

Hazard	Flooding
Action	Flood Insurance Study & Map Maintenance
Description	Maintain coordination with FEMA and LA County to update Flood Insurance Studies and FIRMs as new hydraulic data becomes available and incorporate findings into development review.
Vulnerability	River-adjacent development
Goals	Flood Risk Reduction, Public Awareness
Coordinating Agency	Public Works, LA County Flood Control
Funding Source	FEMA HMGP (Planning)+G24
Timeline	As Needed
Priority	High
In 2021 LHMP Update?	Yes

Hazard	Hazardous Materials / Transportation
Action	CUPA Inspection & Compliance Program
Description	Continue coordinated inspection and regulatory oversight of facilities storing hazardous materials through LA County Fire CUPA program to reduce spill and release risk.
Vulnerability	Industrial areas, adjacent neighborhoods
Goals	Spill Prevention, Public Safety
Coordinating Agency	LA County Fire (CUPA)
Funding Source	Regulatory Program Fees
Timeline	Ongoing
Priority	High
In 2021 LHMP Update?	Yes

Hazard	Hazardous Materials / Transportation
Action	Freeway & Rail Corridor Spill Response Coordination Plan
Description	Develop a rapid-response diversion, notification, and evacuation framework for hazardous materials incidents along I-5, SR-14, and adjacent rail lines. Conduct tabletop exercises with law enforcement, fire, transit, and schools to test coordination and timing.
Vulnerability	Commuters, adjacent schools/businesses, freight corridors
Goals	Emergency Response, Evacuation Safety, Interagency Coordination
Coordinating Agency	LA County Fire, SCV Sheriff's Station
Funding Source	FEMA HMGP, Cal OES Hazard Mitigation Grants
Timeline	1–2 years
Priority	High
In 2021 LHMP Update?	No

Hazard	High Wind / Storms
Action	Urban Tree & Vegetation Wind Hardening Program
Description	Implement risk-based trimming and removal of wind-prone species along evacuation routes and near power corridors.
Vulnerability	Road closures, utility damage
Goals	Infrastructure Protection, Debris Reduction
Coordinating Agency	Public Works, LA County Fire
Funding Source	FEMA HMGP, Cal OES
Timeline	1–3 years
Priority	High
In 2021 LHMP Update?	Partially

Hazard	High Wind / Storms
Action	PSPS Impact Mitigation & Wind Threshold Coordination
Description	Develop wind-triggered operational protocols with SCE to coordinate traffic control, generator deployment, and resilience hub activation prior to forecasted 50–70+ mph Santa Ana events.
Vulnerability	WUI communities, medically vulnerable
Goals	Emergency Readiness, Lifeline Continuity
Coordinating Agency	City Manager's Office, SCE
Funding Source	FEMA HMGP (Planning), CPUC
Timeline	1–2 years
Priority	Medium-High
In 2021 LHMP Update?	No

Hazard	High Wind / Storms
Action	Tree Inspection, Maintenance, and Wind-Resilient Urban Forestry
Description	Continue proactive tree inspection, pruning, removal, replacement, and maintenance to reduce wind-related risks to roads, sidewalks, parks, public facilities, power lines, drainage areas, and emergency access routes. Activities may include prioritizing trees near critical facilities and evacuation corridors, coordinating with utilities, removing dead or compromised trees, selecting wind-appropriate replacement species, and integrating tree work with storm preparation and post-storm debris removal.
Vulnerability	Residents, motorists, parks, public facilities, routes, utilities, and mature tree areas
Goals	Life Safety; Infrastructure Protection; Urban Forestry Resilience
Coordinating Agency	Public Works; Parks; Urban Forestry; Emergency Management; SCE
Funding Source	General Fund; maintenance funds; Cal FIRE; FEMA HMGP; utility coordination
Timeline	Ongoing annual cycle
Priority	Medium
In 2021 LHMP Update?	Yes

Hazard	Landslides
Action	Hillside Development Geotechnical Review Enhancement
Description	Strengthen grading and geotechnical review requirements for steep slope and WUI development by requiring updated stability modeling, post-fire erosion analysis, and third-party certification. Integrate updated hazard maps into review workflows.
Vulnerability	Future hillside construction; redevelopment on steep slopes
Goals	Risk Avoidance, Regulatory Risk Reduction
Coordinating Agency	Planning Division
Funding Source	No-cost (Regulatory), Permit Fees
Timeline	1 year
Priority	Medium
In 2021 LHMP Update?	Yes (Updated)

Hazard	Landslides
Action	Grading & Geotechnical Review Enforcement
Description	Maintain strengthened grading permit review and geotechnical analysis requirements for hillside development, including slope stability and drainage review for high-risk parcels.
Vulnerability	Hillside and WUI development
Goals	Risk Avoidance
Coordinating Agency	Planning Division
Funding Source	Permit Fees (Regulatory)
Timeline	Ongoing
Priority	Medium
In 2021 LHMP Update?	Yes

Hazard	Multi-Hazard
Action	Capital Improvement Plan (CIP) Integration
Description	Continue integrating hazard mitigation priorities into the City's Capital Improvement Program to ensure infrastructure upgrades incorporate resilience standards.
Vulnerability	Citywide infrastructure
Goals	Long-Term Resilience, Implementation
Coordinating Agency	Public Works, Finance
Funding Source	General Fund, Grants
Timeline	Ongoing
Priority	High
In 2021 LHMP Update?	No

Hazard	Multi-Hazard
Action	Annual Mitigation Strategy Review
Description	Conduct annual review of mitigation actions, plan goals, and implementation status to maintain FEMA compliance and adapt to changing risk conditions.
Vulnerability	Citywide
Goals	Plan Maintenance, FEMA Compliance
Coordinating Agency	Emergency Management
Funding Source	General Fund
Timeline	Annual
Priority	Medium
In 2021 LHMP Update?	No

Hazard	Multi-Hazard
Action	Infrastructure Enhancements and Preventative Maintenance to Improve Traffic Flow
Description	Continually evaluate, prioritize, construct, and maintain transportation and drainage improvements that support traffic flow, emergency access, evacuation capacity, and post-disaster mobility along major arterials and connector routes. Activities may include intersection and signal improvements, roadway widening or operational enhancements, debris and sediment removal, culvert and inlet maintenance, drainage repairs, slope and shoulder stabilization, and maintenance to reduce storm-related debris, localized flooding, or infrastructure failures affecting travel lanes and emergency response routes.
Vulnerability	Citywide
Goals	Infrastructure Protection; Life Safety; Evacuation Readiness
Coordinating Agency	Public Works; Emergency Management;
Funding Source	City CIP; General Fund; FEMA; FHWA
Timeline	Annual
Priority	High
In 2021 LHMP Update?	Yes

Hazard	Power Outage
Action	PSPS Mitigation & Critical Load Mapping
Description	Partner with SCE to map critical loads (traffic signals, water pumps, communications, medical facilities) and prioritize sectionalizing, automation, and backup power solutions to reduce PSPS impacts citywide.
Vulnerability	Lifeline infrastructure, emergency response systems
Goals	Infrastructure Protection, Continuity of Operations
Coordinating Agency	Public Works, SCE
Funding Source	CPUC Resilience Grants, FEMA HMGP
Timeline	1–3 years
Priority	Medium–High
In 2021 LHMP Update?	No

Hazard	Power Outage/Wildfire
Action	Targeted Undergrounding and Grid Hardening
Description	Coordinate with SCE to prioritize targeted undergrounding, covered conductors, sectionalizing, automation, vegetation management, and related grid-hardening in high-fire-threat areas and along critical evacuation, communications, water, and public safety corridors. Prioritize based on wildfire ignition risk, PSPS history, critical loads, medically vulnerable populations, emergency access, and coordination with roadway, utility, and capital projects.
Vulnerability	WUI areas, critical facilities, evacuation corridors, utilities, medically vulnerable residents
Goals	Life Safety; Wildfire Risk Reduction; Utility Reliability
Coordinating Agency	Public Works; Emergency Management; SCE; LA County Fire
Funding Source	SCE/CPUC programs; FEMA HMGP/BRIC; Cal OES; City CIP
Timeline	1–5 years; ongoing coordination
Priority	High
In 2021 LHMP Update?	No

Hazard	Wildfire
Action	Wildland–Urban Interface (WUI) Fuel Reduction & Defensible Space Expansion
Description	Expand targeted fuel reduction, shaded fuel breaks, and defensible space enforcement in high-risk WUI areas including Placerita Canyon, Sand Canyon, Bouquet Canyon, and areas adjacent to Angeles National Forest. Incorporates CAL FIRE SRA guidance and Santa Clarita Fire Hazard Severity Zone mapping.
Vulnerability	WUI neighborhoods, hillside communities, critical evacuation corridors
Goals	Life Safety, Property Protection, Wildfire Risk Reduction
Coordinating Agency	Public Works, CAL FIRE, LA County Fire Department
Funding Source	FEMA HMGP, CAL FIRE Fire Prevention Grants, Cal OES Wildfire Mitigation
Timeline	1–3 years
Priority	High
In 2021 LHMP Update?	Partial

Hazard	Wildfire
Action	Smoke-Ready Community & Clean Air Shelter Program
Description	Retrofit designated community centers, libraries, and senior facilities with MERV-13+ filtration or portable HEPA systems to serve as clean air shelters during wildfire smoke events. Includes public guidance on indoor air quality protection.
Vulnerability	Elderly, children, respiratory patients, outdoor workers
Goals	Public Health, Air Quality, Equity
Coordinating Agency	Community Services, Public Works, LA County Public Health
Funding Source	FEMA HMGP, CARB Community Air Grants, Cal OES
Timeline	1–2 years
Priority	High
In 2021 LHMP Update?	No

Hazard	Wildfire
Action	Defensible Space & Fuel Modification Maintenance
Description	Continue enforcement of defensible space requirements and maintenance of fuel modification zones in High and Very High Fire Hazard Severity Zones, including inspection programs and vegetation management in WUI areas.
Vulnerability	WUI neighborhoods, hillside homes
Goals	Property Protection, Life Safety
Coordinating Agency	LA County Fire Department, Planning Division, Neighborhood Services
Funding Source	General Fund, FEMA HMGP
Timeline	Ongoing
Priority	High
In 2021 LHMP Update?	Yes

Hazard	Wildfire
Action	WUI Building & Fire Code Enforcement
Description	Maintain enforcement of Wildland-Urban Interface building standards, ignition-resistant construction, and ember-resistant design requirements for new development and major remodels.
Vulnerability	New WUI development
Goals	Risk Reduction, Code Compliance
Coordinating Agency	Building & Safety
Funding Source	Permit Fees (Regulatory)
Timeline	Ongoing
Priority	High
In 2021 LHMP Update?	Yes

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6.4 Prior Mitigation Actions Not Included

Mitigation Action Item	2021 LHMP Comments and Status
Flood Action Item F002-02 – Regulate all development in floodplains through enhanced multi-division review	Implemented; ongoing during plan check for new development and remodels
Flood Action Item F003-01 – Complete detailed Flood Insurance Study (FIS) for downtown Newhall and tributaries	Completed June 2, 2021
Multi-Hazard Action Item MH001-01 – Restriping of Cross Valley Connector (Golden Valley segment)	Design complete; seeking grant funding
Multi-Hazard Action Item MH001-02 – Bridge widening at Copper Hill Drive / San Francisquito Bridge	Planning study completed; grant-funded
Multi-Hazard Action Item MH002-01 – Battery Backup Systems (BBS) at signalized intersections	Implemented; ongoing maintenance
Multi-Hazard Action Item MH002-02 – Expand emergency notification technologies (Nixle, transit signage, displays)	Implemented; technology expansion ongoing
Multi-Hazard Action Item MH004-01 – Maintain and upgrade Department Operations Center (DOC) capabilities	Ongoing; annual review
Multi-Hazard Action Item MH005-01 – Procure debris removal equipment and resources for post-disaster response	Implemented; equipment acquired
Cyber-Attack Action Item MM-CA001-01 – Maintain hardware/software security controls	Implemented; monitoring ongoing
Cyber-Attack Action Item MM-CA001-02 – Maintain and update cyber threat management tools	Implemented; ongoing updates
Cyber-Attack Action Item MM-CA001-03 – Increase City network bandwidth capacity	Implemented; expanded in 2020
Cyber-Attack Action Item MM-CA001-04 – Control access ports and reduce cyber-intrusion risk	Implemented; continuous monitoring
Hazardous Materials Action Item HM001-01 – Publish and maintain emergency hazardous-materials contact information	Ongoing; updated as information changes

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6.5 Other Potential Actions Considered but Not Included

Hazard	Mitigation Action Item	2021 LHMP Timeline	2021 LHMP Comments and Status	Current Status (as of 2025 LHMP Update)
Wildfire	Citywide Undergrounding of Electric Distribution Lines	3–5 years	Considered as a long-term wildfire and outage reduction strategy but identified as cost-prohibitive at citywide scale and largely outside City control (utility-owned assets).	Not included as a City-led action; pursued instead through targeted hardening in priority corridors and coordination with utility wildfire mitigation programs and CPUC proceedings.
Wildfire	New Santa Clarita Fire Station Construction for WUI Coverage	3–5 years	Discussed as a potential response-time and coverage improvement for WUI neighborhoods but required broader service planning and sustained operating funding beyond LHMP scope.	Deferred to agency service planning and capital programming; LHMP emphasizes targeted WUI fuel reduction, evacuation readiness, and resilience hub/cooling capacity rather than new station siting.
Wildfire	Citywide Residential Exterior Sprinkler Requirement Retrofit	1–3 years	Considered as an ignition-resistance measure for ember exposure but identified as difficult to enforce on existing homes and potentially burdensome without incentives.	Not included as a requirement; addressed through voluntary retrofit incentives, defensible space enforcement support, and hardening/retrofit guidance aligned with WUI building standards.
Power Outage	City-Operated Community Microgrid Serving Multiple Neighborhoods	3–5 years	Considered to improve resilience during PSPS and extreme heat outages, but raised feasibility issues related to governance, utility	Not included as a citywide microgrid project; reframed as “site-based resilience hubs” (solar + storage) at priority facilities (cooling centers, community

			interconnection, and capital cost.	centers, critical operations).
Power Outage	Citywide Standby Generator Program for Residents	1–2 years	Considered to reduce household impacts during outages, but raised air quality, noise, fuel storage, and equity concerns, and was not scalable.	Not included; replaced with strategies focused on clean backup power (battery storage), medically vulnerable registries, and resilience hubs with charging/refrigeration capacity.
Power Outage	Full Redundant Fiber Backbone Buildout (City-Owned)	3–5 years	Considered to reduce communications failure during outages and disasters but required major capital investment and long-term O&M responsibilities.	Deferred as a standalone mitigation action; addressed through targeted redundancy for EOC/critical sites, vendor contracts, and integration into ITS/communications modernization projects.
Extreme Heat	Citywide Misting Infrastructure in Parks and Commercial Corridors	1–3 years	Considered to reduce heat stress in public spaces but raised water-use efficiency concerns and long-term maintenance requirements during drought conditions.	Not included as a citywide program; replaced by targeted shade structures, cool surfaces, tree canopy expansion where feasible, and indoor cooling/resilience hub operations.
Extreme Heat	Mandatory Cool-Roof Retrofit Requirement for Existing Homes	1–3 years	Considered as a building-scale heat mitigation strategy but identified as challenging to implement for existing housing without a funding/incentive program.	Not included as a mandate; addressed via incentive-oriented measures (rebates, outreach, cool-roof promotion in reroof permits) and facility-focused cooling upgrades.
Multi-Hazard	New City-Owned Emergency Warehouse for Supplies	3–5 years	Considered to strengthen logistics for wildfire smoke, heat, and outage response	Not included as a discrete action; replaced with regional mutual aid/logistics agreements,

			(water, PPE, generators), but required site acquisition and ongoing staffing/operations.	vendor pre-position contracts, and scalable “just-in-time” supply strategies staged at City facilities during events.
Multi-Hazard	Permanent, Year-Round Emergency Shelter Facility	3–5 years	Considered to reduce reliance on temporary shelters during wildfire, heat, and storm events, but long-term cost and operational complexity exceeded LHMP scope.	Deferred; addressed instead through MOUs with schools/faith-based partners, resilience hub upgrades at existing City facilities, and pre-identified shelter agreements.
Flooding	Santa Clara River Levee/Channelization Expansion (citywide)	3–5 years	Considered to reduce flood exposure, but major river modifications are primarily USACE/LA County Flood Control jurisdiction and require extensive permitting and environmental review.	Not included as a City-led action; addressed through targeted drainage/CIP projects, updated floodplain mapping coordination, and project-specific partnerships where City has authority.
Earthquake	City-Owned Emergency Potable Water Tank System	3–5 years	Considered to improve post-earthquake water availability, but capital and O&M costs and siting constraints were significant.	Not included as a standalone action; addressed through water system coordination, emergency distribution planning, and resilience hubs with water/ice distribution capability during prolonged outages.

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6.6 Implementation & Monitoring

Prioritization Criteria: Drawing in part from the STAPLEE method (Social, Technical, Administrative, Political, Legal, Economic, Environmental), the prioritization process for this LHMP's mitigation strategies included evaluation across several key criteria:

- Anticipated risk reduction
- Technical feasibility
- Cost-benefit considerations
- City implementation capacity
- Co-benefits
- Alignment with local planning goals and existing program priorities

These considerations were ultimately summarized using a simplified scoring approach. Each mitigation action received a subjective score on a 1–3 numeric scale, where: 1 = High Priority, 2 = Medium Priority, and 3 = Low Priority. These numeric scores were then translated into standardized ranking titles ("High," "Medium," or "Low") to ensure consistency across plan sections. This simplified presentation was designed to reduce complexity and make the menu of mitigation options more accessible and user-friendly.

The LHMP is intended not only to support funding applications for specific projects, but also to guide elected officials and staff in integrating mitigation into broader City government processes. Presenting these strategies in a clear, straightforward manner directly supports that goal.

Responsible Agencies & Implementation: The successful execution of the Santa Clarita Local Hazard Mitigation Plan Update requires coordinated action among multiple City departments, regional partners, and state and federal agencies. This section outlines the designated lead and supporting agencies for implementation, as well as anticipated timelines for initiation and completion of mitigation actions.

The City of Santa Clarita City Manager's Office, through its Office of Emergency Management (OEM), serves as the lead agency for overall emergency management, disaster mitigation, and LHMP coordination. The City Manager's Office is responsible for policy oversight, interdepartmental coordination, maintenance of the LHMP, and liaison with external partners such as Cal OES, FEMA, and Los Angeles County.

- **City Manager's Office / Office of Emergency Management (OEM):** LHMP coordination and annual progress tracking; Emergency Operations Center (EOC) activation and management; interdepartmental coordination; grant pursuit and administration; coordination with Cal OES, FEMA, and Los Angeles County; integration of mitigation actions into citywide policies and plans.

- **Los Angeles County Fire Department – Santa Clarita Valley:** Fire suppression, emergency medical services, technical rescue, hazardous materials response, wildfire mitigation, community risk reduction, and regional mutual aid coordination; support for preparedness planning, public education, and emergency response operations.
- **Los Angeles County Sheriff's Department:** Santa Clarita Valley Sheriff's Station: Emergency evacuations, traffic management, and public safety operations; critical infrastructure protection and public communications during disasters; law enforcement coordination for terrorism, civil unrest, and multi-hazard incidents; coordination with Fire Department and County emergency services.
- **Public Works Department:** Post-disaster debris removal, road clearance, and utility coordination; infrastructure restoration projects; oversight of the Capital Improvement Program (CIP) in collaboration with Engineering and Transportation divisions.
- **Engineering and Transportation Divisions (under Public Works):** Design and delivery of seismic retrofit, stormwater, and transportation resilience projects; evacuation route planning and resilient infrastructure design; technical review of funding applications.
- **Community Development Department:** Includes Planning, Building & Safety, Code Enforcement, and Economic Development.
- **Planning Division:** Land use and zoning policy–based mitigation; integration of General Plan Safety Element, Climate Action Plan, and Housing Element priorities.
- **Building & Safety Division:** Enforcement of California Building Code seismic, wildfire, and floodplain standards; post-disaster safety assessments of buildings and structures.
- **Code Enforcement Division:** Enforcement of City municipal codes, including those related to nuisance abatement, defensible space, occupancy safety, and structural integrity.
- **Economic Development Division:** Supports resilience of commercial and industrial sectors and encourages investment in risk-reduction upgrades, business continuity planning, and disaster recovery readiness.

Each mitigation action identified in Section 6.3 – Mitigation Action Plan Table includes:

- A responsible coordinating agency (lead)
- Supporting agencies where applicable
- A proposed implementation timeframe, categorized as:
    - Short-Term (0–1 year)

- Mid-Term (1–3 years)
- Long-Term (3–5 years)
- Ongoing (recurring or policy-based actions)

Mitigation actions will be integrated into the City's Capital Improvement Plan (CIP), Annual Departmental Budgets, and the Emergency Operations Plan (EOP) as appropriate.

The City Manager's Office, through OEM, will convene annual coordination meetings with designated department leads to review implementation progress, assess barriers, identify funding opportunities (e.g., FEMA HMGP, FMA, Cal OES programs), and adjust timelines and responsibilities as needed.

Performance Metrics & Reporting: To ensure accountability and measure progress, the City will track the implementation of each mitigation action using specific performance metrics. These will be reviewed and updated during regular plan maintenance and during funding application development.

Performance monitoring will be structured around the following indicators:

- **Implementation Milestones:** Completion of key steps such as feasibility studies, grant applications, design, permitting, and construction.
- **Project Completion Rate:** Percentage of total actions initiated and completed within each 5-year LHMP cycle.
- **Funding Leveraged:** Amount of federal, state, and local funding secured for mitigation implementation (e.g., FEMA HMGP, Cal OES, CPUC).
- **Risk Reduction Achieved:** Quantitative and qualitative reductions in risk, such as:
  - Number of critical facilities retrofitted.
  - Square footage of stormwater improvements.
  - Number of households reached through outreach or served by resilience programs.
- **Community Engagement:** Number of participants in mitigation-related outreach, trainings, and workshops.
- **Equity Metrics:** Percentage of actions implemented in CalEnviroScreen-designated disadvantaged communities or benefiting socially vulnerable populations.

Reporting will occur through three key mechanisms:

- **Annual Mitigation Implementation Review Memo:** Each year, the City Manager's Office, in coordination with the City's Emergency Management function, will compile a memo summarizing:
    - Actions completed or initiated.
    - Any delays or constraints encountered.
    - Upcoming priorities and funding needs.
    - A status summary of each mitigation action (not started, in progress, completed, deferred).
- **FEMA 5-Year LHMP Update Cycle Reporting:** At the start of each LHMP update cycle, the City will conduct a comprehensive evaluation of:
    - All mitigation actions from the prior plan.
    - Quantitative progress on metrics.
    - Revised priorities based on new data and risk assessments.
    - Documentation of actions completed, revised, or not implemented, with justifications.
- **Grant Reporting and Post-Award Performance Tracking:** For all mitigation projects funded by external sources (e.g., FEMA, Cal OES), the City will comply with federal and state performance monitoring requirements, including quarterly progress reports, cost tracking, benefit-cost validation (as applicable), and outcome summaries.

SECTION 7 – PLANNING, MAINTENANCE AND ADOPTION

Element A Requirements
A1. Does the plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? (Requirement 44 CFR § 201.6(c)(1))
A2. Does the plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia, and other private and non-profit interests to be involved in the planning process? (Requirement 44 CFR § 201.6(b)(2))
A3. Does the plan document how the public was involved in the planning process during the drafting stage and prior to plan approval? (Requirement 44 CFR § 201.6(b)(1))
A4. Does the plan describe the review and incorporation of existing plans, studies, reports, and technical information? (Requirement 44 CFR § 201.6(b)(3))

This section describes how the 2026 Santa Clarita Local Hazard Mitigation Plan was developed, reviewed, adopted, and will be maintained over time. In addition to documenting the planning process, stakeholder coordination, and public involvement that supported this update, the section explains how the plan will be integrated into other City planning mechanisms and used as a living document rather than a one-time planning product. Its purpose is to demonstrate that the LHMP reflects a collaborative and ongoing process that supports long-term hazard mitigation and continued eligibility for FEMA funding.

Consistent with FEMA requirements, this section also establishes the framework for monitoring, evaluating, and updating the plan after adoption. It identifies how the City will track progress on mitigation actions, incorporate new information and changing conditions, and coordinate future revisions with departments, partner agencies, and the public.

7.1 Planning Process

The City of Santa Clarita's 2026 Local Hazard Mitigation Plan (LHMP) Update is designed to meet the requirements of the Disaster Mitigation Act of 2000 (DMA 2000) and to ensure that the City of Santa Clarita remains eligible for all appropriate benefits under state and federal law and programs. The LHMP planning process considers natural and human-caused hazards facing the City, ensuring compliance with FEMA's Local Mitigation Planning Policy Guide (2025), applicable FEMA Plan Review Tool (PRT) criteria, and Cal OES guidance.

The LHMP planning team gathered information from a variety of sources, including participating City departments, local organizations and utilities, regional planning agencies, and residents of Santa Clarita. Hazard mitigation strategies were developed through an extensive, iterative process involving internal subject matter experts and external stakeholder feedback.

The City's Planning Team consisted of:

- Masis Hagobian – Intergovernmental Relations Officer
- Brandon Francke – Emergency Operations Analyst

The City's Planning Team was supported throughout by staff from Jacob Green and Associates, who wrote the LHMP Update. Numerous stakeholders were invited to participate in several workshops and contributed valuable insights.

The planning process began with an internal kickoff meeting in September 2025. A stakeholder meeting was held in October 2025. Invitees are listed below:

Name	Organization	Role
Matthew Nelson	Boys & Girls Club of Santa Clarita Valley	Chief Executive Officer
Chris Najarro	Bridge to Home – Homeless Services	Administrative Offices
Erik Klem	California Institute of the Arts	Executive Director, Campus Safety
Lauren Wonder	Caltrans District 7	Chief Public Information Officer / Public Affairs
Bob Brauneisen	Castaic Union School District	Superintendent
Nikki Buckstead	Child & Family Center – SCV	President & CEO
Kanika Kith	City of San Fernando	Interim City Manager

Ronald Garcia	City of San Fernando	Community Development Director
John Caprarelli	City of Santa Clarita – Building & Safety	Chief Building Official
Amalia Marreh	City of Santa Clarita – Engineering Services	Assistant City Engineer
Darin Seegmiller	City of Santa Clarita – Environmental Services / Neighborhood Services	Environmental Services Manager
Patrick Leclair	City of Santa Clarita – Planning Division	Planning Manager
Reinhardt Schuerger	College of the Canyons	Executive Director, Campus Safety
Eric Harnish	College of the Canyons	
Ivan Volschenk	Evolve Business Strategies	
Kimia Fatehi	Fernandeño Tataviam Band of Mission Indians	Chief of Staff, Office of Tribal President
David Hegg	Grace Baptist Church	Church Office
Terry Stone	Henry Mayo Newhall Hospital	Safety / Emergency Preparedness Director
William Evans	Interwest Consulting Group	
Paul Maradiaga	LA County Animal Care & Control – Castaic	Animal Care Center Manager
Patrick Sprengel	Los Angeles County Fire Department	Fire Chief / Division III
Maria Grycan	Los Angeles County Fire Department	Community Services Representative
Nancy Stevens	Los Angeles County Public Works / Flood Control District	Watershed Management Division
Tim Pfeiffer	Los Angeles County Sanitation Districts	Manager / Environmental Health & Safety
Brandon Barclay	Los Angeles County Sheriff's Department – Santa Clarita Valley Station	Watch Commander / Station
Sylvia Novoa	Metrolink / Southern California Regional Rail Authority	Public Affairs Manager
Dash Stolarz	Mountains Recreation & Conservation Authority	Public Affairs & Media
Leticia Hernandez	Newhall School District	Superintendent
Shawn Kelly	Santa Clara River Conservancy	Executive Director
Ondré Seltzer	Santa Clarita Valley Economic Development Corporation	General Inquiries / Economic Development

Joe Diaz	Santa Clarita Valley Water Agency	Emergency Preparedness and Safety Coordinator
Kevin Strauss	Santa Clarita Valley Water Agency	Communications Manager
Rebecca Lustig	Santa Clarita Valley Water Agency	Environmental Health & Safety Supervisor
Nicklaus Capelli	Saugus Union School District	Assistant Director of Human Resources and Risk Management
Kevin MacDonald	SCV Senior Center / Santa Clarita Valley Committee on Aging	CEO
Quynh Lam	South Coast Air Quality Management District	Assistant Information Technology Specialist
Natalie Yanez	Southern California Edison	
Marisol Espinoza	Southern California Gas Company	Public Affairs Manager
John Bwarie	Stratiscope	Founder / CEO
Catherine Kawaguchi	Sulphur Springs Union School District	Superintendent
Mark Blazer	Temple Beth Ami	Rabbi
Dan Clark	Terra-Gen	Director, BESS Safety and Standards
Travis Stuard	Terra-Gen	
Whitney Goller	Terra-Gen	Community Relations Manager
Jacie Castellon	Terra-Gen	
Brian Kortcamp	The Master's University	
Kathy Norris	Valley Industry Association – Santa Clarita	Association Office
Debbie Dunn	William S. Hart Union High School District	Director of Communication and Community Engagement
Rebecca Kelly	YMCA of Metropolitan Los Angeles – Santa Clarita Family YMCA	Director, Santa Clarita Family YMCA

A subsequent hazard and risk workshop was conducted with City staff and regional stakeholders in November 2026 to review updated hazard data, climate projections, and vulnerability findings. Invitees are listed below:

Name	Organization	Role
Matthew Nelson	Boys & Girls Club of Santa Clarita Valley	Chief Executive Officer
Chris Najarro	Bridge to Home – Homeless Services	Administrative Offices
Erik Klem	California Institute of the Arts	Executive Director, Campus Safety
Lauren Wonder	Caltrans District 7	Chief Public Information Officer / Public Affairs
Bob Brauneisen	Castaic Union School District	Superintendent
Choni Marozov	Chabad of Santa Clarita Valley	Rabbi / Office
Nikki Buckstead	Child & Family Center – SCV	President & CEO
Kanika Kith	City of San Fernando	Interim City Manager
Ronald Garcia	City of San Fernando	Community Development Director
John Caprarelli	City of Santa Clarita – Building & Safety	Chief Building Official
Amalia Marreh	City of Santa Clarita – Engineering Services	Assistant City Engineer
Laura Jardine	City of Santa Clarita – Environmental Services	Zone Administrator / Environmental Services
Darin Seegmiller	City of Santa Clarita – Environmental Services / Neighborhood Services	Environmental Services Manager
Patrick Leclair	City of Santa Clarita – Planning Division	Planning Manager
Reinhardt Schuerger	College of the Canyons	Executive Director, Campus Safety
Eric Harnish	College of the Canyons	
Ivan Volschenk	Evolve Business Strategies	
Kimia Fatehi	Fernandeño Tataviam Band of Mission Indians	Chief of Staff, Office of Tribal President
David Hegg	Grace Baptist Church	Church Office
Terry Stone	Henry Mayo Newhall Hospital	Safety / Emergency Preparedness Director
Executive Director	Homes 4 Families	Community Outreach
William Evans	Interwest Consulting Group	
Paul Maradiaga	LA County Animal Care & Control – Castaic	Animal Care Center Manager

Anthony Barreras	LA County Public Works – Safe, Clean Water Program	PE / Safe Clean Water Program contact
Patrick Sprengel	Los Angeles County Fire Department	Fire Chief / Division III
Maria Grycan	Los Angeles County Fire Department	Community Services Representative
Sinan Khan	Los Angeles County Office of Emergency Management	Associate Director / Access and Functional Needs
Nancy Stevens	Los Angeles County Public Works / Flood Control District	Watershed Management Division
Tim Pfeiffer	Los Angeles County Sanitation Districts	Manager / Environmental Health & Safety
Brandon Barclay	Los Angeles County Sheriff's Department – Santa Clarita Valley Station	Watch Commander / Station
Sylvia Novoa	Metrolink / Southern California Regional Rail Authority	Public Affairs Manager
Dash Stolarz	Mountains Recreation & Conservation Authority	Public Affairs & Media
Leticia Hernandez	Newhall School District	Superintendent
Shawn Kelly	Santa Clara River Conservancy	Executive Director
Ondré Seltzer	Santa Clarita Valley Economic Development Corporation	General Inquiries / Economic Development
Kevin Strauss	Santa Clarita Valley Water Agency	Communications Manager
Joe Diaz	Santa Clarita Valley Water Agency	Emergency Preparedness and Safety Coordinator
Rebecca Lustig	Santa Clarita Valley Water Agency	Environmental Health & Safety Supervisor
Nicklaus Capelli	Saugus Union School District	Assistant Director of Human Resources and Risk Management
Kevin MacDonald	SCV Senior Center / Santa Clarita Valley Committee on Aging	CEO
Quynh Lam	South Coast Air Quality Management District	Assistant Information Technology Specialist
Stephan LeBlanc	Southern California Edison	
Natalie Yanez	Southern California Edison	

Marisol Espinoza	Southern California Gas Company	Public Affairs Manager
John Bwarie	Stratiscope	Founder / CEO
Catherine Kawaguchi	Sulphur Springs Union School District	Superintendent
Mark Blazer	Temple Beth Ami	Rabbi
Dan Clark	Terra-Gen	Director, BESS Safety and Standards
Jacie Castellon	Terra-Gen	
Travis Stuard	Terra-Gen	
Whitney Goller	Terra-Gen	Community Relations Manager
Brian Kortkamp	The Master's University	
Kathy Norris	Valley Industry Association – Santa Clarita	Association Office
Debbie Dunn	William S. Hart Union High School District	Director of Communication and Community Engagement
Rebecca Kelly	YMCA of Metropolitan Los Angeles – Santa Clarita Family YMCA	Director, Santa Clarita Family YMCA

Public outreach opportunities included a public survey, a draft review period, and two public meetings (an in-person meeting at the Newhall Library on January 8, 2026, and a virtual meeting on January 15, 2026) to maximize community participation. Draft sections of the plan were circulated internally throughout development, and the complete draft was made available for public review prior to submission.

The Planning Team incorporated comments into a Final Draft Plan, which was submitted to Cal OES and FEMA Region IX for review and conditional approval. Following incorporation of required revisions, the Plan was returned to Cal OES and FEMA for formal approval. The final FEMA-approved LHMP was presented to the Santa Clarita City Council for adoption by resolution. A copy of the adoption resolution was forwarded to FEMA for formal acknowledgment.

The planning area for this LHMP includes the entire jurisdictional boundary of the City of Santa Clarita. The risk assessment was conducted for this complete area and includes analysis of hazard exposure, probability, vulnerability, and future conditions in accordance with 44 CFR §201.6(c)(2). The Planning Team compiled a comprehensive stakeholder contact list across multiple sectors and agencies, inviting participation throughout the planning process. Neighboring jurisdictions, school districts, and regional agencies were notified and provided opportunities to review the draft plan.

In compliance with 44 CFR §201.6(b)(3), the planning process incorporated existing plans, studies, and technical resources relevant to Santa Clarita. The following documents were reviewed and referenced:

Plan / Document	Description
City of Santa Clarita LHMP (2021)	Served as the baseline hazard mitigation document, including hazard profiles, vulnerability summaries, and previously prioritized mitigation actions.
City of Santa Clarita General Plan & Safety Element	Provided demographic, land use, infrastructure, and environmental context for the updated risk assessment and capability analysis. The Safety, Land Use, Circulation, Conservation and Open Space, and Environmental Justice components were especially critical to hazard identification and prioritization.
2023 California State Hazard Mitigation Plan (Cal OES)	Ensured consistency with state hazard profiles, climate adaptation integration, and mitigation funding priorities.
Los Angeles County Hazard Mitigation Plan	Provided regional hazard context and coordination frameworks for flooding, wildfire, seismic activity, and other shared risks.
California's Fourth Climate Change Assessment – Los Angeles Region	Offered scientific projections for extreme heat, drought, wildfire, and climate change indicators relevant to Santa Clarita.
SCAG Connect SoCal Regional Transportation Plan/Sustainable Communities Strategy	Supported integration of transportation resilience, housing risk, and regional mitigation co-benefits.
Santa Clara River Watershed Plans and Flood Control Studies	Informed flood hazard analysis, hydraulic modeling assumptions, and stormwater management strategies.

These materials informed the risk assessment, capability analysis, and mitigation strategy sections of this Plan.

7.2 Plan Update

Element E: Plan Update Requirements
E1. Was the plan revised to reflect changes in development? (Requirement 44 CFR § 201.6(d)(3))
E2. Was the plan revised to reflect changes in priorities and progress in local mitigation efforts? (Requirement 44 CFR § 201.6(d)(3))

The City of Santa Clarita's previous LHMP update was completed in 2021. This 2026 update uses data from the U.S. Census Bureau, City development trends, and the adopted City of Santa Clarita General Plan and Safety Element to examine how development patterns, population changes, and infrastructure expansion affect the City's hazard vulnerabilities, particularly for low-income residents, seniors, persons with disabilities, outdoor workers, and linguistically isolated households. Further information on land use, infrastructure, and community conditions can be found in Section 2.

This update to the City's LHMP represents a comprehensive plan revision, integrating updated risk data, refined hazard profiles, and new planning requirements, as well as changes in community priorities since the 2021 update. It reflects and operationalizes the most recent FEMA mitigation planning guidance (2023 Local Mitigation Planning Policy Guide) and applicable Cal OES criteria. This LHMP update incorporates projected climate change impacts into relevant hazard profiles to more accurately describe how temperature increases, precipitation variability, wildfire behavior, and atmospheric river intensity may evolve. These insights are reflected in updated mitigation actions to advance community adaptation, infrastructure resilience, and long-term risk reduction.

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7.3 Stakeholder Involvement

Stakeholders were engaged throughout multiple phases of plan development. During the initial research and analysis phase, documents from the City of Santa Clarita, neighboring jurisdictions, Los Angeles County, and regional planning partners were reviewed to inform the Plan's context and hazard analysis. Stakeholders were contacted through email invitations, telephone calls, and direct coordination by City staff and the planning consultant team to support comprehensive and inclusive engagement. The core planning team met on a biweekly basis, as well as on an as-needed basis, throughout the duration of the project.

Stakeholder Category	Representative Entities	Role in the Planning Process
Local and regional agencies involved in hazard mitigation activities	Los Angeles County Fire Department; Southern California Association of Governments (SCAG); Los Angeles County Public Works / Flood Control District	Provided hazard mitigation, emergency management, flood control, and regional planning perspectives relevant to the LHMP update.
Agencies with authority to regulate development	City of Santa Clarita Community Development Department	Provided input on development regulation, land use, and integration of mitigation into local planning and review processes.
Neighboring communities	City of Los Angeles; City of San Fernando; City of Palmdale; City of Lancaster	Received copies of the initial draft LHMP for review and comment.
Businesses, academia, and other private organizations	Southern California Edison; SoCalGas; Santa Clarita Valley Chamber of Commerce; Metrolink / Southern California Regional Rail Authority; Los Angeles County Metropolitan Transportation Authority (Metro)	Provided technical, infrastructure, transportation, utility, and business-sector perspectives relevant to hazard mitigation and community resilience.
Nonprofit and community-based organizations, including organizations serving socially vulnerable populations	United Way of Greater Los Angeles; SCV Food Pantry; Santa Clarita Valley Senior Center	Provided community-serving perspectives, including insight into the needs of underserved and socially vulnerable populations.

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7.4 Public Involvement

The City of Santa Clarita provided members of the public several opportunities to participate in the planning, design, and review phases of Plan development. Members of the public and City Council members were also given the opportunity to provide input and recommendations verbally, through emails, and via digital comment forms.

Public outreach for input on the Plan took place in several formats, including online, in print, and in person:

- A multilingual community survey in English and Spanish was made available on the City's website through February 2026 allowing residents to share their experiences and perspectives regarding hazards affecting the City and potential actions to reduce risk.
- Notifications and survey links were posted on the City's website and on social media platforms.
- A virtual Hazards Workshop was held in November 2025, engaging residents, community-based organizations, and regional partners.
- An in-person public meeting was held in January 2026 at the Newhall Public Library along with a virtual workshop using the same content and presentation format as the in-person workshop, allowing community members to participate remotely and provide live feedback.
- The Draft LHMP was published to the City's website in April 2026 for a two-week public comment period, and comments received were reviewed and integrated into the final draft.

Survey summaries, outreach materials, and documentation of public notice are included in the Appendices to the Plan.

Public and stakeholder involvement was meaningful and influential in shaping the Plan. Feedback directly informed refinement of mitigation actions and prioritization of hazards, particularly with respect to wildfire, extreme heat, flooding, drought, and evacuation access in canyon and WUI areas. Input from regional partners, including the Santa Clarita Valley Water Agency and Los Angeles County Flood Control District, contributed to refinement of water supply resilience and flood mitigation strategies.

Copies of the final LHMP Update will be catalogued and made available at City Hall and other appropriate public facilities. The existence and locations of these copies will be publicized via the City's website and official communication channels. A copy of the Plan and any proposed amendments will remain available on the City's website throughout the Plan's lifecycle. The website will also include a designated email address and phone number for ongoing public comment, recommendations, and inquiries.

The Emergency Operations Analyst, designated within the City Manager's Office, will work with other City departments to create opportunities for public involvement throughout the Plan's five-year life cycle. These opportunities may include outreach through existing public meetings (e.g., safety fairs, CERT events, preparedness workshops, and City Council meetings) as well as regular updates to City Council during public sessions.

Specific annual events and outreach channels identified to promote public involvement in hazard mitigation planning include:

- National Fire Protection Association Fire Prevention Week
- National Preparedness Month (September)
- Great ShakeOut Earthquake Drill (October)
- City of Santa Clarita Emergency Management Webpage
- City of Santa Clarita Social Media Platforms

7.5 Plan Incorporation

The City of Santa Clarita addresses statewide planning goals and legislative requirements through its General Plan and Safety Element, Capital Improvement Program (CIP), Municipal Code, and Building and Safety Regulations. The Local Hazard Mitigation Plan (LHMP) provides a series of recommendations, many of which align closely with the goals and objectives of these existing plans and programs. The City incorporates recommended LHMP mitigation actions through established procedures to ensure that hazard mitigation remains an integral and ongoing part of City planning and investment efforts.

The 2021 Santa Clarita LHMP was previously referenced in the Safety Element of the General Plan. In this 2026 update, the LHMP has been developed to align with and support continued implementation of the Safety Element and related planning documents, consistent with California Senate Bill 379 (SB 379), which requires local jurisdictions to incorporate climate adaptation and resilience strategies into their Safety Elements based on the most current LHMP.

Planning mechanisms such as the Capital Improvement Program, Housing Element, Environmental Justice policies, and Conservation and Open Space policies provide opportunities to incorporate LHMP content where hazard exposure, infrastructure investment, and resilience objectives are directly relevant.

The Community Development Department is responsible for enforcing the California Building Standards Code, ensuring hazard-resistant design in accordance with seismic, floodplain, wildfire, and energy efficiency regulations. Community Development – which includes Building & Safety, Community Preservation and Planning – collaborates with state agencies and regional partners to ensure building safety regulations reflect evolving climate and hazard risks. This process ensures that life-safety criteria are met for new construction and substantial renovations.

Many LHMP goals and mitigation actions will be implemented through projects and priorities listed in the Capital Improvement Program, including stormwater infrastructure upgrades, slope stabilization projects, facility retrofits, and green infrastructure investments. City departments – including Public Works and the City Manager's Office – develop and review the CIP annually. During the annual CIP review cycle, the Emergency Operations Analyst will coordinate with City departments to assess where LHMP actions align with CIP priorities and identify opportunities for incorporation.

Upon FEMA approval of the 2026 LHMP Update, the Emergency Operations Analyst will initiate a structured integration process to embed the LHMP's strategies into relevant City plans and programs. The Emergency Operations Analyst will review and evaluate annually to:

- Track integration of mitigation strategies into General Plan implementation, CIP updates, housing and zoning policy, and community investment decisions;
- Ensure consistency between mitigation actions and citywide goals for resilience and public safety;
- Monitor and document progress toward LHMP implementation; and
- Recommend updates or adjustments to improve integration and effectiveness.

7.6 Monitoring, Evaluating and Updating the Plan

Element D: Plan Maintenance Requirements
D1. Is there discussion of how each community will continue public participation in the plan maintenance process? (Requirement 44 CFR § 201.6(c)(4)(iii))
D2. Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating, and updating the mitigation plan within a five-year cycle)? (Requirement 44 CFR § 201.6(c)(4)(i))
D3. Does the plan describe a process by which each community will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? (Requirement 44 CFR § 201.6(c)(4)(ii))

Monitoring: Under the direction of the Emergency Operations Analyst within the City Manager's Office, the Santa Clarita Hazard Mitigation Planning Team will take responsibility for plan maintenance and implementation. The Emergency Operations Analyst will facilitate annual Planning Team meetings, assign tasks, and ensure that progress on implementation and integration is tracked consistently. This individual will maintain a yearly record of necessary updates to ensure the LHMP reflects the most current hazard data, completed actions, and planning priorities.

The Emergency Operations Analyst will coordinate with relevant City departments – including Public Works, Community Development, Parks & Recreation, and Administrative Services in addition to the Los Angeles County Fire Department and the Los Angeles County Sheriff's Department – to track progress on mitigation actions and support alignment with other planning mechanisms (e.g., General Plan Safety Element, Capital Improvement Program [CIP], and Emergency Operations Plan [EOP]). Plan implementation and evaluation will remain a shared responsibility throughout the City and its partners.

The Emergency Operations Analyst will also collaborate with City departments, including Administrative Services and the City Manager's Office, to secure funding and support for the required five-year update cycle, in accordance with FEMA and Cal OES regulations.

The Planning Team will meet at least once per year to review action status, coordinate interdepartmental implementation, and identify any necessary modifications. These meetings will be scheduled annually following confirmation of Planning Team representatives. The Emergency Operations Analyst will be authorized to reassign or designate new Planning Team members as needed.

Evaluating: The LHMP will be formally evaluated on an annual basis to assess the effectiveness of existing actions and determine whether changes in development patterns, hazard conditions, or state and federal policies require updates to mitigation priorities. This annual evaluation will follow a consistent schedule and will be led by the Emergency Operations Analyst, who will convene and facilitate the evaluation meeting.

During the evaluation, the Planning Team will review:

- The continued relevance of goals and mitigation actions;
- New or emerging hazards based on updated science or local experience;
- Implementation status of current mitigation actions;
- Progress and setbacks in interagency collaboration.

Each coordinating department will be asked to report on:

- Successes in implementation;
- Challenges or barriers encountered;
- Lessons learned or recommended revisions;
- Interagency coordination performance.

If plan revisions are needed, the Emergency Operations Analyst will assign responsible Planning Team members to draft and circulate those changes within three months. All updates will be distributed to City departments, external plan partners, and posted on the City of Santa Clarita's website. Substantial revisions will be tracked for incorporation into the next full plan update.

Each annual Planning Team meeting will also include a review of:

- Any changes in the nature or magnitude of identified risks;
- The current status of mitigation actions;
- Ongoing or new challenges encountered during implementation;
- Adjustments to strategies based on changing community needs, funding, or guidance.

The evaluation process will include outreach to key internal and external stakeholders such as:

- Neighborhood associations and HOA representatives;
- Santa Clarita Valley Sheriff's Station and Fire personnel;
- Faith-based organizations and local nonprofits;
- Social service providers, including housing and senior services;
- Staff from Public Works, Engineering, and Planning & Community Development.

These stakeholders will provide updates on community conditions, equity considerations, and hazard mitigation needs to help inform responsive and inclusive plan improvements.

Updating: The Emergency Operations Analyst will oversee ongoing monitoring and annual evaluation to support timely identification of grant opportunities and alignment with City budgeting cycles. Following adoption of the annual budget by the City Council, the Hazard Mitigation Coordinator will collaborate with the Planning Team and applicable departments to pursue state and federal mitigation funding, including FEMA's Hazard Mitigation Grant Program (HMGP) and other eligible resilience funding programs administered through Cal OES.

Beginning in Year Four of the five-year LHMP lifecycle, the Emergency Operations Analyst will initiate the formal update process in accordance with 44 CFR §201.6(d)(3). The revised LHMP will be submitted to Cal OES and FEMA for review and approval and will subsequently be adopted by resolution of the Santa Clarita City Council.

Public engagement will be a critical component of the update. Citywide meetings will be advertised through a combination of social media, website notifications, direct outreach, and public postings, with special emphasis on reaching:

- Low-income and linguistically isolated residents;
- Elderly persons and individuals with access and functional needs;
- Community-based and service organizations;
- Youth, seniors, and participants in community preparedness programs.

The updated LHMP will be made available:

- Online via the City of Santa Clarita's website;
- Physically at Santa Clarita City Hall and other appropriate public facilities;
- By request through the City Manager's office.

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7.7 Plan Adoption

Element F: Plan Adoption
F1. For single-jurisdictional plans, has the governing body of the jurisdiction formally adopted the plan to be eligible for certain FEMA assistance? (Requirement 44 CFR § 201.6(c)(5))
F2. For multi-jurisdictional plans, has the governing body of each jurisdiction officially adopted the plan to be eligible for certain FEMA assistance? (Requirement 44 CFR § 201.6(c)(5))

Adoption of the Local Hazard Mitigation Plan by the City's governing body is a core requirement for FEMA and Cal OES approval. Once the Plan is conditionally approved by FEMA and finalized, the Santa Clarita City Council will be responsible for formally adopting the Mitigation Plan by resolution. The governing body holds the authority to promote sound public policy around hazard mitigation, resilience, and emergency preparedness.

The City Council will retain authority to update or amend the Plan as needed to reflect changes in local hazard risks, exposures, regulatory requirements, and community needs. Once adopted, the approved 2026 LHMP will serve as a foundational policy document, guiding hazard mitigation investments and influencing future growth, infrastructure improvements, and climate resilience strategies.

On [TO BE COMPLETED WITH FINAL DATE], during a regularly scheduled public meeting, the Santa Clarita City Council formally adopted the Santa Clarita Local Hazard Mitigation Plan (2026 Update). The City Council resolution of adoption is provided in the Appendices of this Plan.

Primary Point of Contact

Brandon Francke
Emergency Operations Analyst
BFrancke@SantaClarita.gov

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APPENDICES

The appendices provide supporting documentation, reference materials, and supplemental records that strengthen the technical and procedural foundation of this LHMP. While the main body of the plan presents the core analysis, findings, and mitigation strategy, the appendices preserve key materials related to adoption, approval, outreach, public input, maps, and flood insurance documentation. Together, they provide transparency regarding the planning process, document compliance with FEMA and State requirements, and offer additional detail that supports use of the plan by City staff, partner agencies, and reviewers.

Appendix A: Sample Adoption Resolution

Note to Reviewers: When this plan has been reviewed and approved pending adoption by FEMA Region IX, the adoption resolutions will be signed added to this appendix.

Sample Resolution: City of Santa Clarita

Resolution # ______

Adopting the City of Santa Clarita Hazard Mitigation Plan

WHEREAS, The City of Santa Clarita recognizes the threat that natural and manmade hazards pose to people and property within our community; and

WHEREAS, undertaking hazard mitigation actions will reduce the potential for harm to people and property from future hazard occurrences; and

WHEREAS, the U.S. Congress passed the Disaster Mitigation Act of 2000 ("Disaster Mitigation Act") emphasizing the need for pre-disaster mitigation of potential hazards; and

WHEREAS, the Disaster Mitigation Act made available hazard mitigation grants to state and local governments; and

WHEREAS, an adopted Local Hazard Mitigation Plan is required as a condition of future funding for mitigation projects under multiple FEMA pre- and post-disaster mitigation grant programs; and

WHEREAS, the City of Santa Clarita fully participated in the FEMA-prescribed mitigation planning process to prepare this local hazard mitigation plan; and

WHEREAS, the California Office of Emergency Services and Federal Emergency Management Agency, Region IX officials have reviewed the City of Santa Clarita Local Hazard Mitigation Plan and approve it contingent upon this official adoption of the participating governing body; and

WHEREAS, the City of Santa Clarita desires to comply with the requirements of the Disaster Mitigation Act and to augment its emergency planning efforts by formally adopting the City of Santa Clarita Hazard Mitigation Plan by reference into the Safety Element of the General Plan in accordance with the requirements of AB 2140; and

WHEREAS, adoption by the governing body for the City of Santa Clarita

demonstrates the jurisdiction's commitment to fulfilling the mitigation goals and objectives outlined in this Local Hazard Mitigation Plan; and

WHEREAS, adoption of this legitimizes the plan and authorizes responsible agencies to carry out their responsibilities under the plan.

NOW, THEREFORE, BE IT RESOLVED that the City of Santa Clarita adopts the City of Santa Clarita Local Hazard Mitigation Plan as an official plan; and

BE IT RESOLVED, that the City of Santa Clarita adopts the Santa Clarita Local Hazard Mitigation Plan by reference into the safety element of their general plan in accordance with the requirements of AB 2140; and

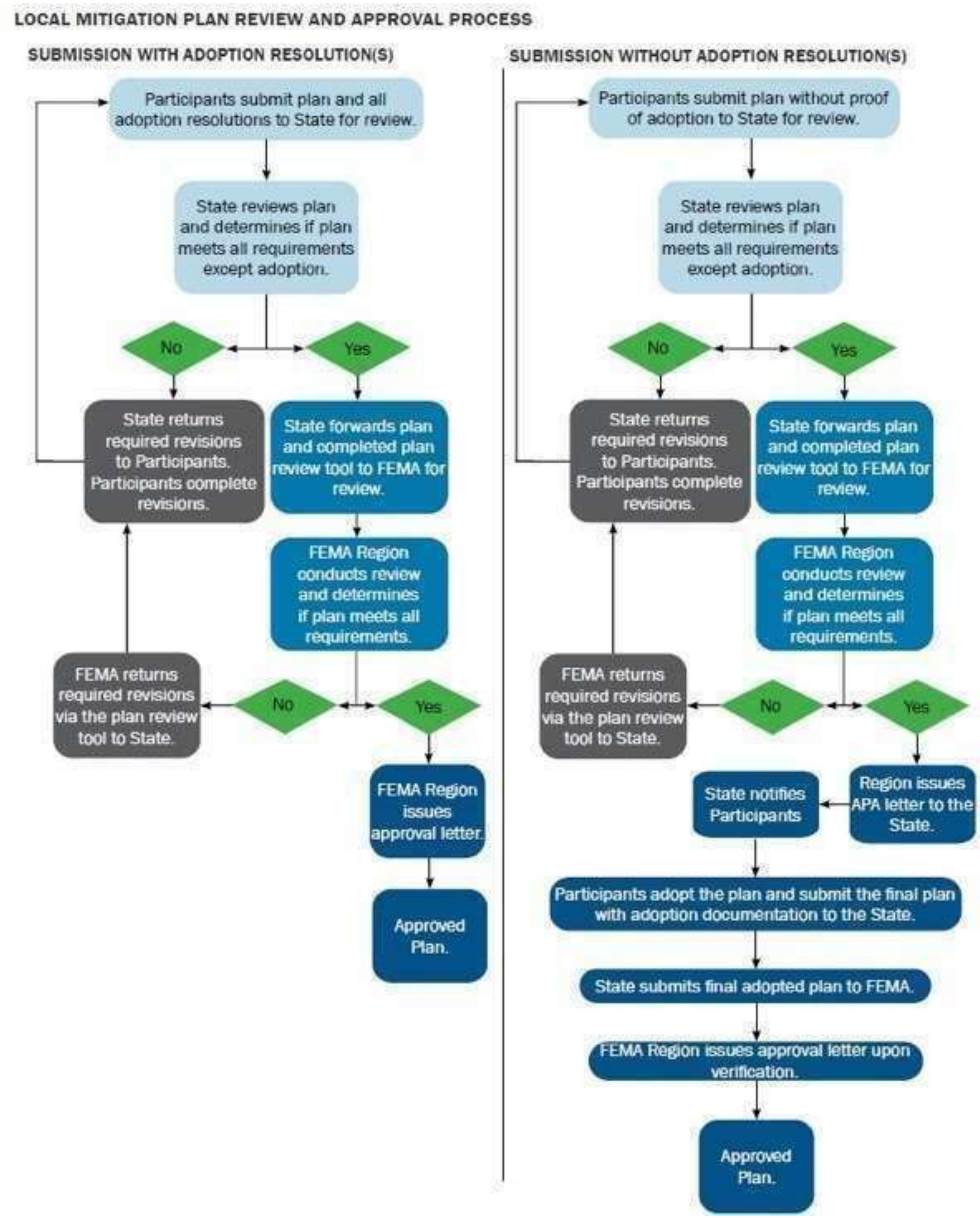
BE IT FURTHER RESOLVED, the City of Santa Clarita will submit this adoption resolution to the California Office of Emergency Services and FEMA Region IX officials to enable the plan's final approval in accordance with the requirements of the Disaster Mitigation Act of 2000 and to establish conformance with the requirement of AB 2140.

Passed:

(date)

Certifying Official

Appendix B: LHMP Approval Process



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Appendix C: Public Outreach Documentation

City of Santa Clarita's Local Hazard Mitigation Plan page with public involvement links.

City of SANTA CLARITA

Departments Services

Local Hazard Mitigation Plan

Home » Emergency Management » Local Hazard Mitigation Plan

- Emergency Management
- Get Involved
- Local Hazard Mitigation Plan
- Local Services
- Preparedness Information
- Public Safety Power Shutoff Events
- Seasonal Guidance
- Special Needs Registry

Local Hazard Mitigation Plan

Local hazard mitigation planning reduces loss of life and property by minimizing the impact of disasters. The City of Santa Clarita's Local Hazard Mitigation Plan identifies natural and man-made disaster risks and vulnerabilities that are common in the City of Santa Clarita. After identifying these risks, long-term strategies for protecting people and property from those events are established.

Please see below to review the City's Federally approved Local Hazard Mitigation Plan.

2021 Hazard Mitigation Plan

2015 Hazard Mitigation Plan

2010 Hazard Mitigation Plan

Local Hazard Mitigation Plan of the City of Santa Clarita

Local Hazard Mitigation Plan Update

To ensure the Local Hazard Mitigation Plan is relevant and effective, the Federal Emergency Management Agency (FEMA) requires the plan to be updated every five years. The City of Santa Clarita's current Local Hazard Mitigation Plan is due to expire in November 2026.

Community Input Opportunities

The City of Santa Clarita is updating its Local Hazard Mitigation Plan, and we want your input to help shape a more resilient future for our community.

Three ways to join in the discussion:

1. In-person public workshop on Thursday, January 8 from 5-7:00 p.m. at the Old Town Newhall Library.
2. Virtual workshop Thursday, January 15 at 7:00 p.m. at https://tinyurl.com/mr2ft59d
3. Survey in English at https://forms.office.com/r/ZbKdUjxpAM or survey in Spanish at https://forms.office.com/r/ynRfkT8kJn

English Survey

Spanish Survey

Public post on the City's Facebook page, December 19, 2025

City of Santa Clarita Government's Post

City of Santa Clarita Government is in **Santa Clarita, CA**.
December 19, 2025 ·

The City of Santa Clarita is updating our Local Hazard Mitigation Plan to help our community build resilience to the hazards of today and tomorrow.

🗣️ We have several opportunities for you to be a part of this process, whether by speaking with our team members or simply contributing your comments.

📍 Public Forum/Open House

🗓️Thursday, January 8

⏰ 5–7:00 p.m.

📍 Old Town Newhall Library

24500 Main St, Santa Clarita, CA 91321

💻 Virtual Public Forum

🗓️Thursday, January 15

⏰ 7–8:00 pm

🔗 Join on Microsoft Teams:

https://tinyurl.com/mr2ft59d

📝 Online Survey

🔗 https://forms.office.com/r/ZbKdUjxpAM

Your input will help make Santa Clarita a great place to live for years to come.

📧 For any questions, please reach out to our consultant at:
jamesw@jacobgreenandassociates.com
-

🚨 ¡Queremos escuchar su opinión! 🚨

La Ciudad de Santa Clarita está actualizando su Plan Local de Mitigación de Riesgos para ayudar a nuestra comunidad a estar mejor preparada ante los riesgos de hoy y del futuro. Su participación es muy importante.

🗣️ Participe de estas maneras:

📍 Foro público en persona
🗓️ Jueves 8 de enero
⏰ 5–7:00 p.m.
📍 Biblioteca Old Town Newhall
24500 Main St., Santa Clarita, CA 91321

💻 Foro público virtual
🗓️ Jueves 15 de enero
⏰ 7–8:00 p.m.
🔗 En línea a través de Microsoft Teams:
https://tinyurl.com/mr2ft59d

📝 Encuesta en línea (disponible en cualquier momento):
🔗 https://forms.office.com/r/ZbKdUjxpAM

Su opinión nos ayuda a seguir construyendo una Santa Clarita más segura y resiliente para todas las familias.

Flyer for public distribution:

SANTA CLARITA'S LOCAL HAZARD MITIGATION PLAN – WE WANT YOUR INPUT!

Santa Clarita is updating its Local Hazard Mitigation Plan, and we want your input to help shape a more resilient future for our community. Three ways to join in the discussion:

1. In-person public workshop on Thursday, January 8 from 5-7 pm at Old Town Newhall Library.

2. Virtual workshop Thursday, January 15 at 7 pm at https://tinyurl.com/mr2ft59d

3. Survey in English at https://forms.office.com/r/ZbKdUjxpAM

PLAN LOCAL DE MITIGACIÓN DE RIESGOS DE SANTA CLARITA - ¡QUEREMOS SU OPINIÓN!

Santa Clarita está actualizando su Plan Local de Mitigación de Riesgos, y queremos su opinión para ayudar a dar forma a un futuro más resistente para nuestra comunidad.

Tres maneras de unirse a la discusión:

1. En persona taller público el jueves, 8 de enero de 17:00 a 19:00 en Biblioteca Old Town Newhall.

2. Taller virtual Jueves, 15 de enero a las 7 pm a https://tinyurl.com/mr2ft59d

3. Encuesta en español en https://forms.office.com/r/ynRfkT8kJn

WHEN AND WHERE / CUÁNDO Y DÓNDE

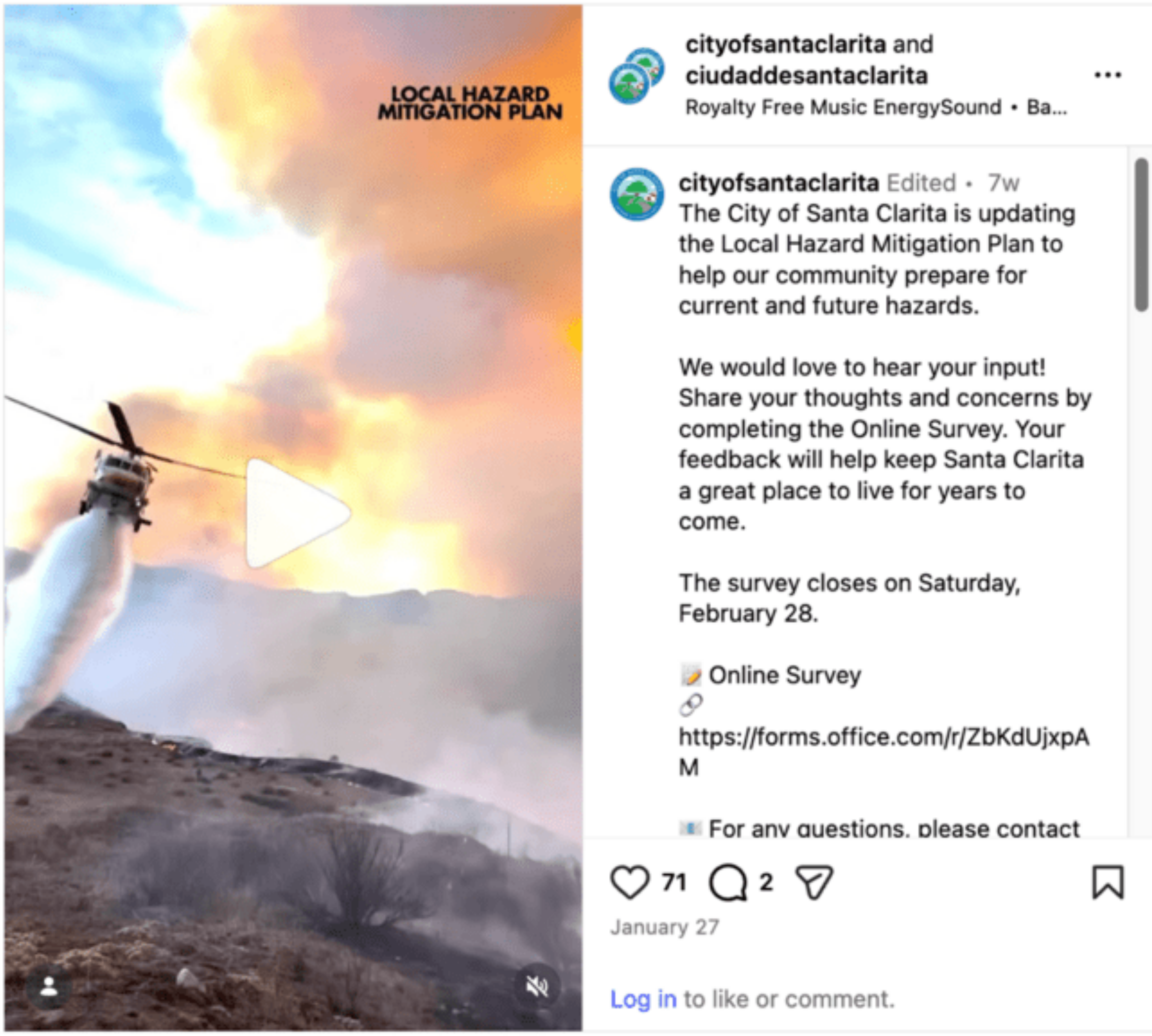
IN-PERSON WORKSHOP / TALLER EN PERSONA

- **Thursday, January 8 from 5-7 pm at / Jueves 8 de enero de 17:00 a 19:00 en Old Town Newhall Library / Biblioteca 24500 Main St, Santa Clarita, CA 91321**

VIRTUAL WORKSHOP / TALLER VIRTUAL

- **Thursday, January 15 from 7-8 pm at /**
- **Jueves 15 de enero de 19.00 a 20.00 h en https://tinyurl.com/mr2ft59d**

Public post from the City's Instagram page (video screenshotted below), January 27, 2025



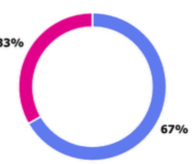
Appendix D: Survey Results (English)

Responses Overview Active

Responses	Average Time	Duration
21	04:43	111 Days

1. Have you or someone you know in the City of Santa Clarita been directly impacted by a significant adverse event or disaster? These could include earthquake, wildfire, extreme heat, flooding, high winds, drought or human-caused events.

Yes	14
No	7



2. Which of these events specifically have you experienced (select all that apply)?

Wildfire	8
Power Outage	6
Extreme Heat	4
Earthquake	8
High Wind/Storms	9
Air Quality	4
Flooding	6
Drought	5
Hazardous Materials Release / Transportation Accident	0
Landslides	1
Dam Failure	0
Epidemic/Pandemic	5
Other	1

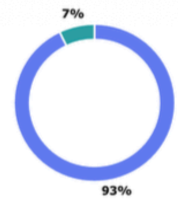
3. If you chose "Other", please identify the type of significant adverse event or disaster that affected you.

3
Responses

Latest Responses
...

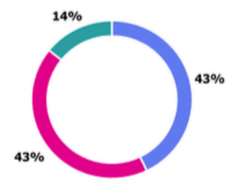
4. Please rate your level of concern for yourself or the City as a whole for each hazard over the next 10 years: Wildfire.

Very Concerned	13
Somewhat concerned	0
Neither concerned nor unconcerned	1
Somewhat unconcerned	0
Very unconcerned	0



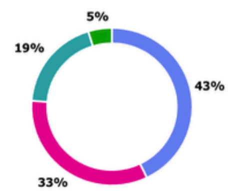
5. Please rate your level of concern for yourself or the City as a whole for each hazard over the next 10 years: Power Outage.

Very Concerned	6
Somewhat concerned	6
Neither concerned nor unconcerned	2
Somewhat unconcerned	0
Very unconcerned	0



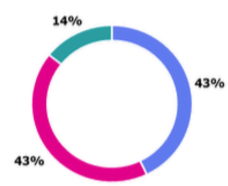
6. Please rate your level of concern for yourself or the City as a whole for each hazard over the next 10 years: Extreme Heat.

Very Concerned	9
Somewhat concerned	7
Neither concerned nor unconcerned	4
Somewhat unconcerned	0
Very unconcerned	1



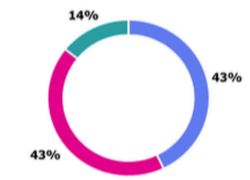
7. Please rate your level of concern for yourself or the City as a whole for each hazard over the next 10 years: Earthquakes.

Very Concerned	9
Somewhat concerned	9
Neither concerned nor unconcerned	3
Somewhat unconcerned	0
Very unconcerned	0



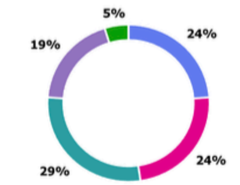
8. Please rate your level of concern for yourself or the City as a whole for each hazard over the next 10 years: High Wind/Storms.

Very Concerned	9
Somewhat concerned	9
Neither concerned nor unconcerned	3
Somewhat unconcerned	0
Very unconcerned	0



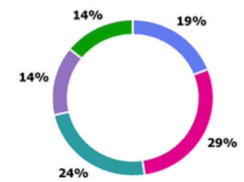
9. Please rate your level of concern for yourself or the City as a whole for each hazard over the next 10 years: Air Quality.

Very Concerned	5
Somewhat concerned	5
Neither concerned nor unconcerned	6
Somewhat unconcerned	4
Very unconcerned	1



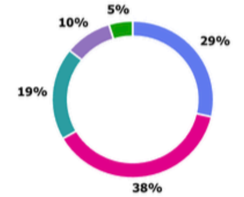
10. Please rate your level of concern for yourself or the City as a whole for each hazard over the next 10 years: Flooding.

Very Concerned	4
Somewhat concerned	6
Neither concerned nor unconcerned	5
Somewhat unconcerned	3
Very unconcerned	3



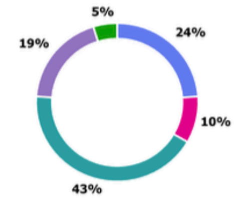
11. Please rate your level of concern for yourself or the City as a whole for each hazard over the next 10 years: Drought.

Very Concerned	6
Somewhat concerned	8
Neither concerned nor unconcerned	4
Somewhat unconcerned	2
Very unconcerned	1



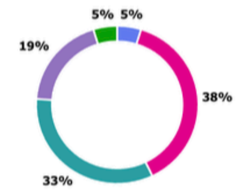
12. Please rate your level of concern for yourself or the City as a whole for each hazard over the next 10 years: Hazardous Materials Release/ Transportation Accident.

Very Concerned	5
Somewhat concerned	2
Neither concerned nor unconcerned	9
Somewhat unconcerned	4
Very unconcerned	1



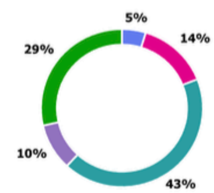
13. Please rate your level of concern for yourself or the City as a whole for each hazard over the next 10 years: Landslides.

Very Concerned	1
Somewhat concerned	8
Neither concerned nor unconcerned	7
Somewhat unconcerned	4
Very unconcerned	1



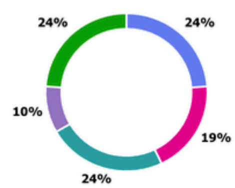
14. Please rate your level of concern for yourself or the City as a whole for each hazard over the next 10 years: Dam Failure.

Very Concerned	1
Somewhat concerned	3
Neither concerned nor unconcerned	9
Somewhat unconcerned	2
Very unconcerned	6



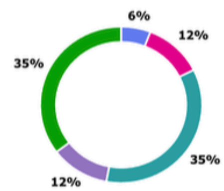
15. Please rate your level of concern for yourself or the City as a whole for each hazard over the next 10 years: Epidemic/Pandemic.

Very Concerned	5
Somewhat concerned	4
Neither concerned nor unconcerned	5
Somewhat unconcerned	2
Very unconcerned	5



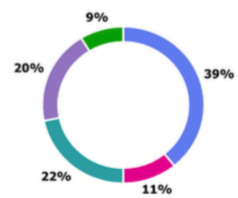
16. Please rate your level of concern for yourself or the City as a whole for each hazard over the next 10 years: Other.

Very Concerned	1
Somewhat concerned	2
Neither concerned nor unconcerned	6
Somewhat unconcerned	2
Very unconcerned	6



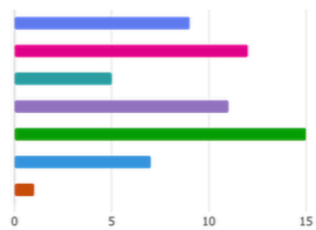
17. Where are the greatest areas of threat that these hazards pose?

Homes and individuals	18
Businesses and industry	5
Utilities	10
Other city infrastructure and services	9
Transportation	4



18. In your view, what categories of actions should the City take to reduce risk for those hazards?

Structural (building and construction)	9
Incentives for property owners	12
Regulatory	5
Education and outreach	11
Enhanced emergency services	15
Natural solutions (trees, more natural flood channels, etc)	7
Other	1



19. If you chose "Other", please add more details here.

2
Responses

Latest Responses
...

20. Is there anything else you'd like us to consider? If so, please include your comments here.

3
Responses

Latest Responses
"I am very supportive of individual accountability. The less governmental intrusion,..."
"Stop building so many new homes. Traffic is horrible and all of the questions aske..."
...

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Appendix E: Other Public Comment

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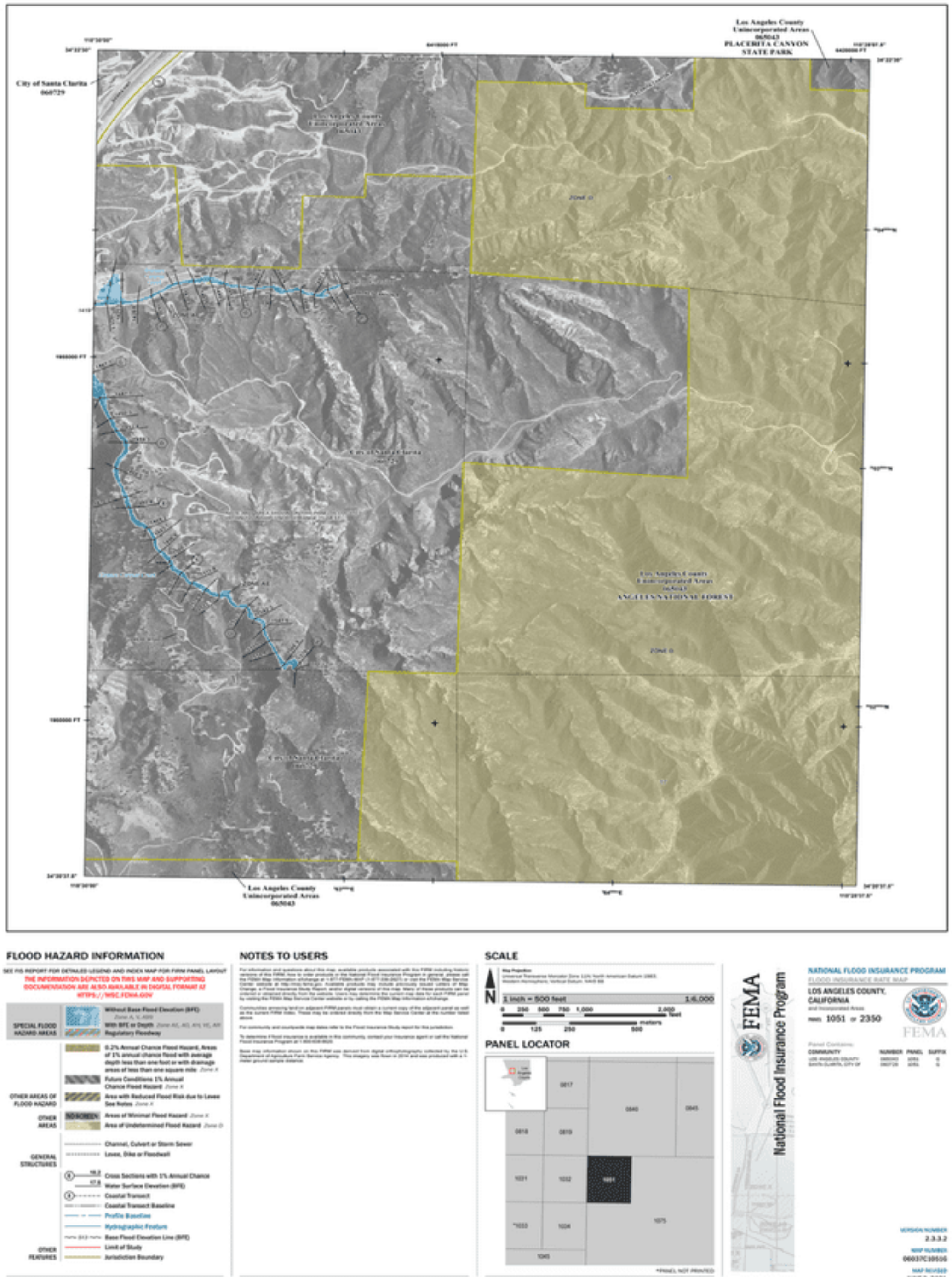
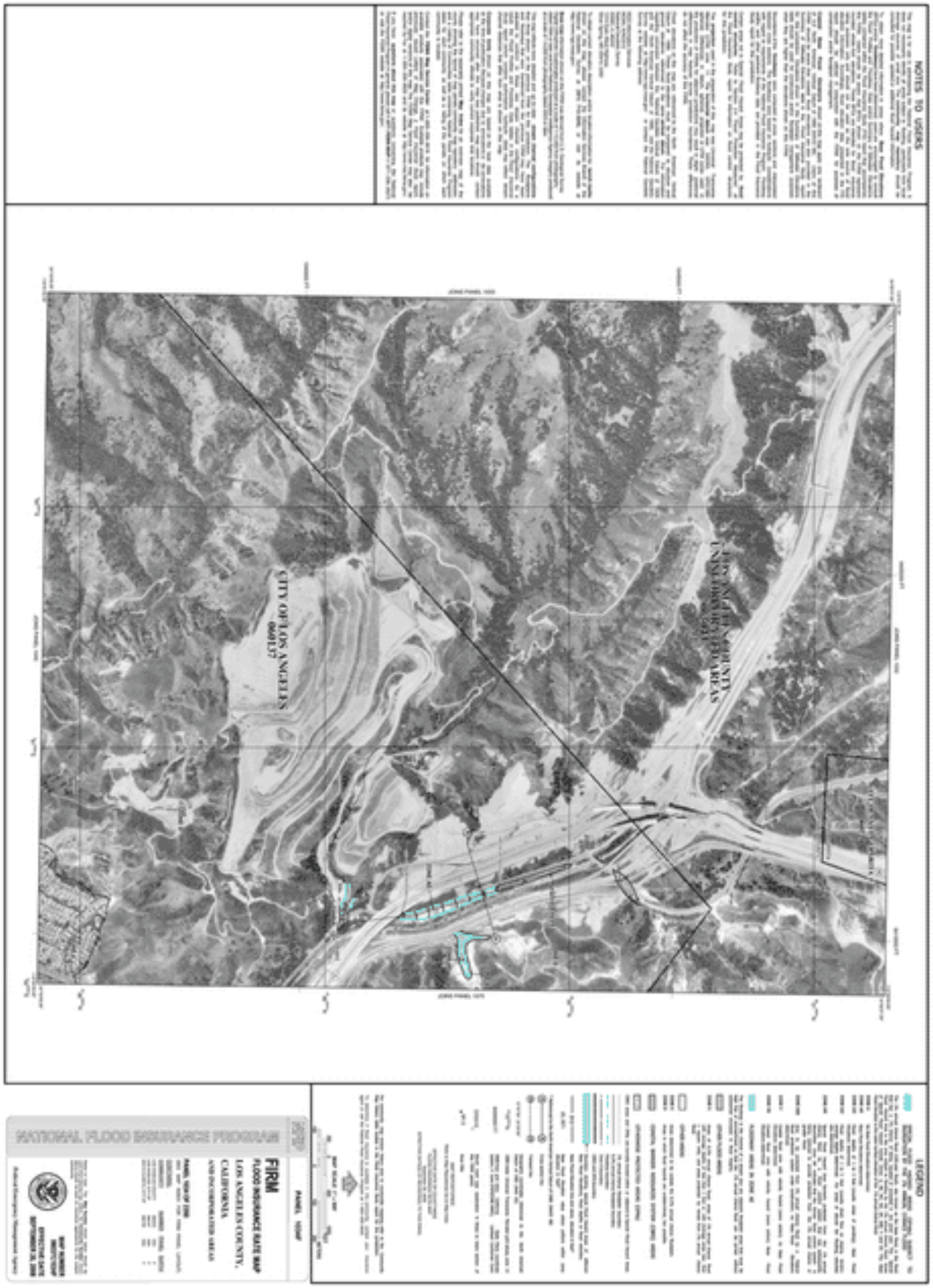
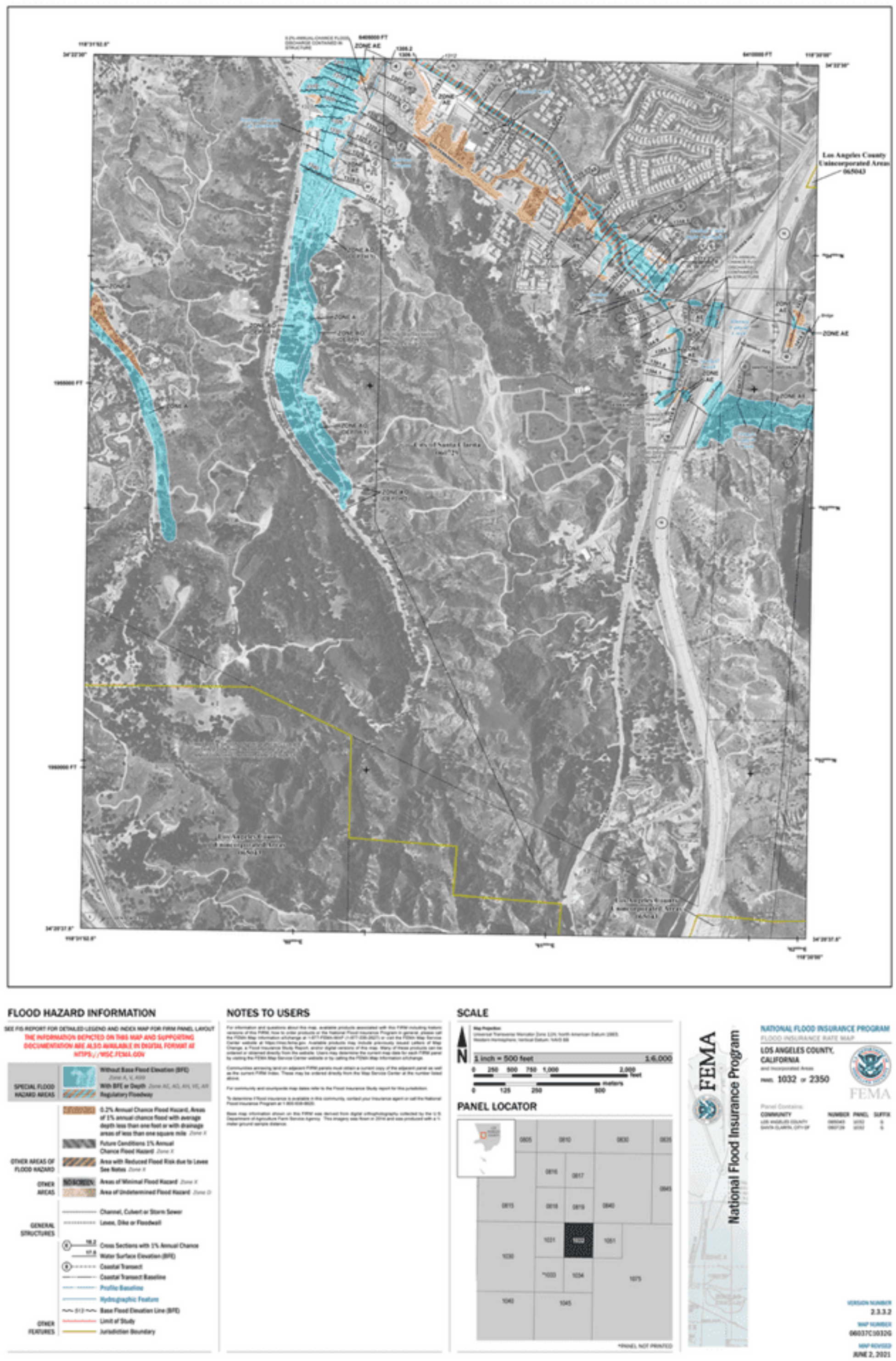
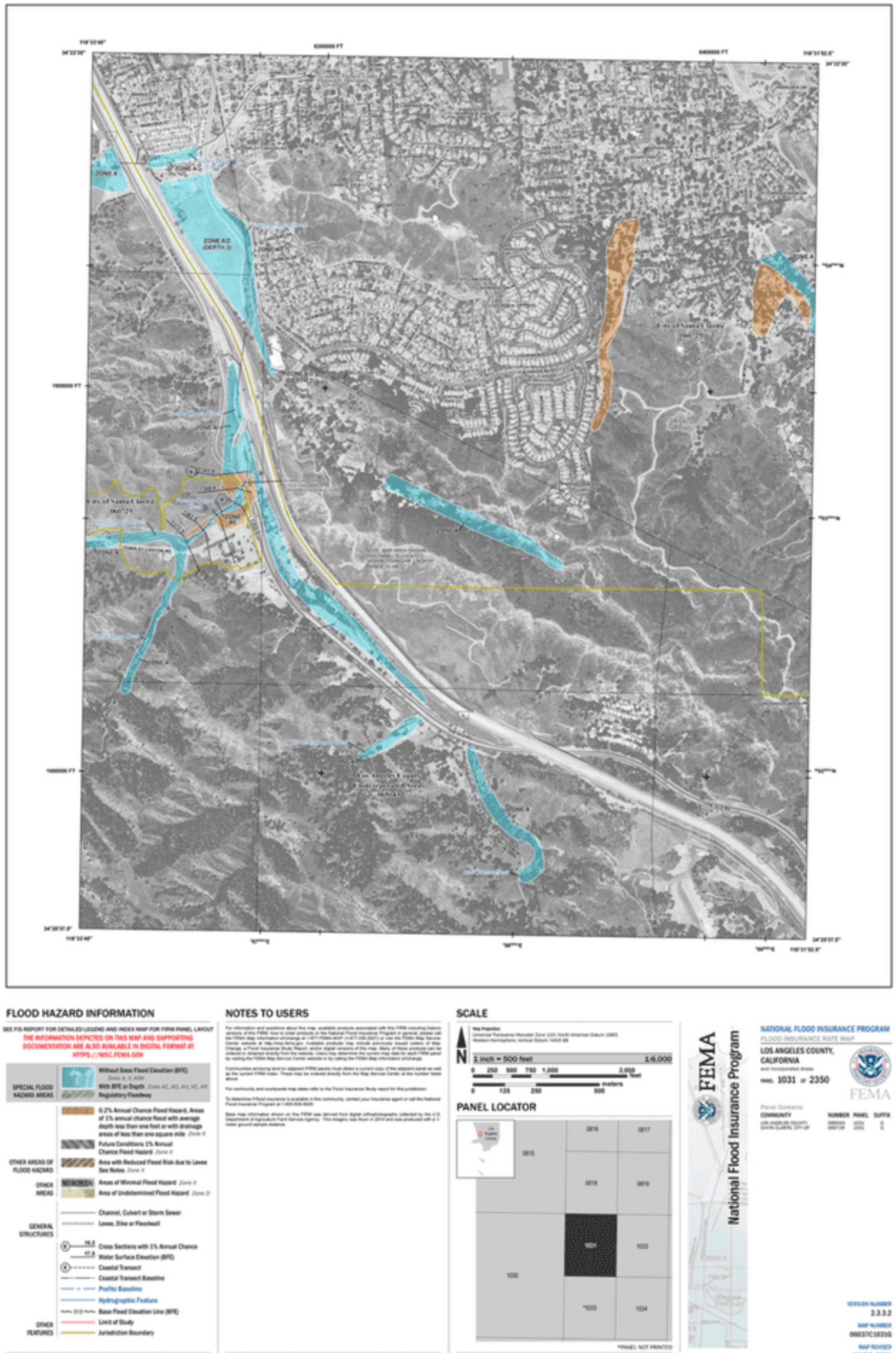
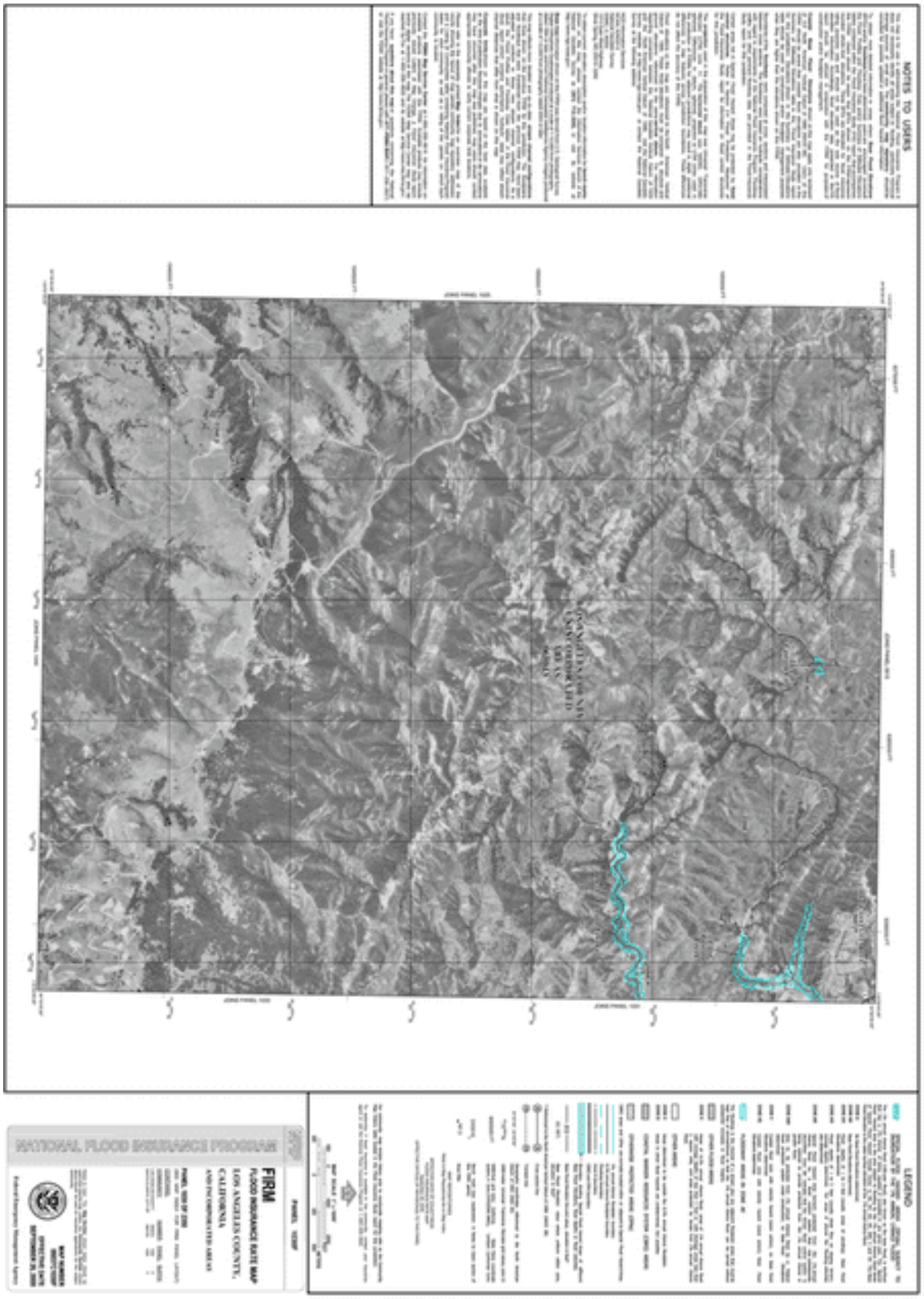
Appendix F: Flood Insurance Rate Maps

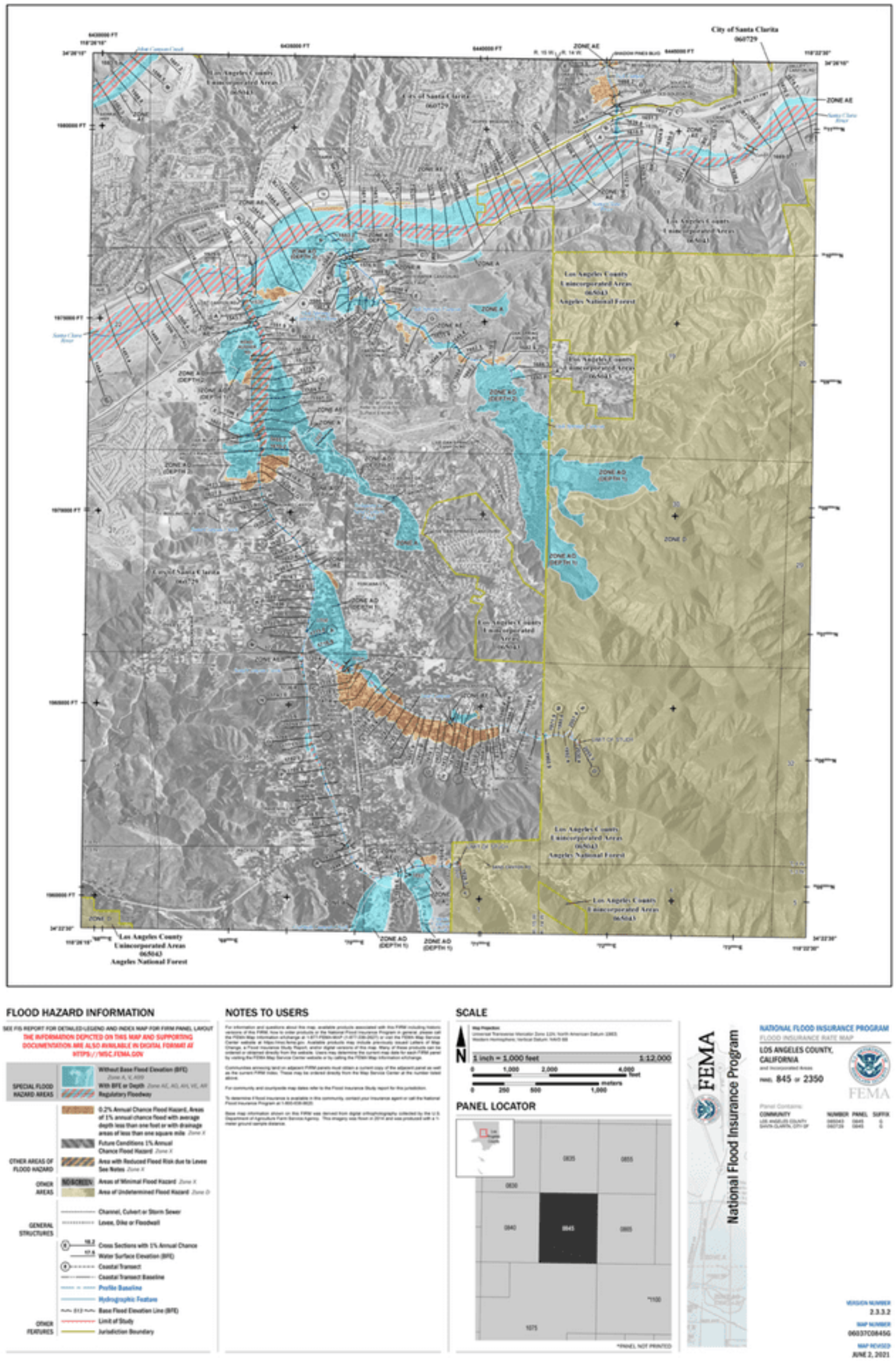


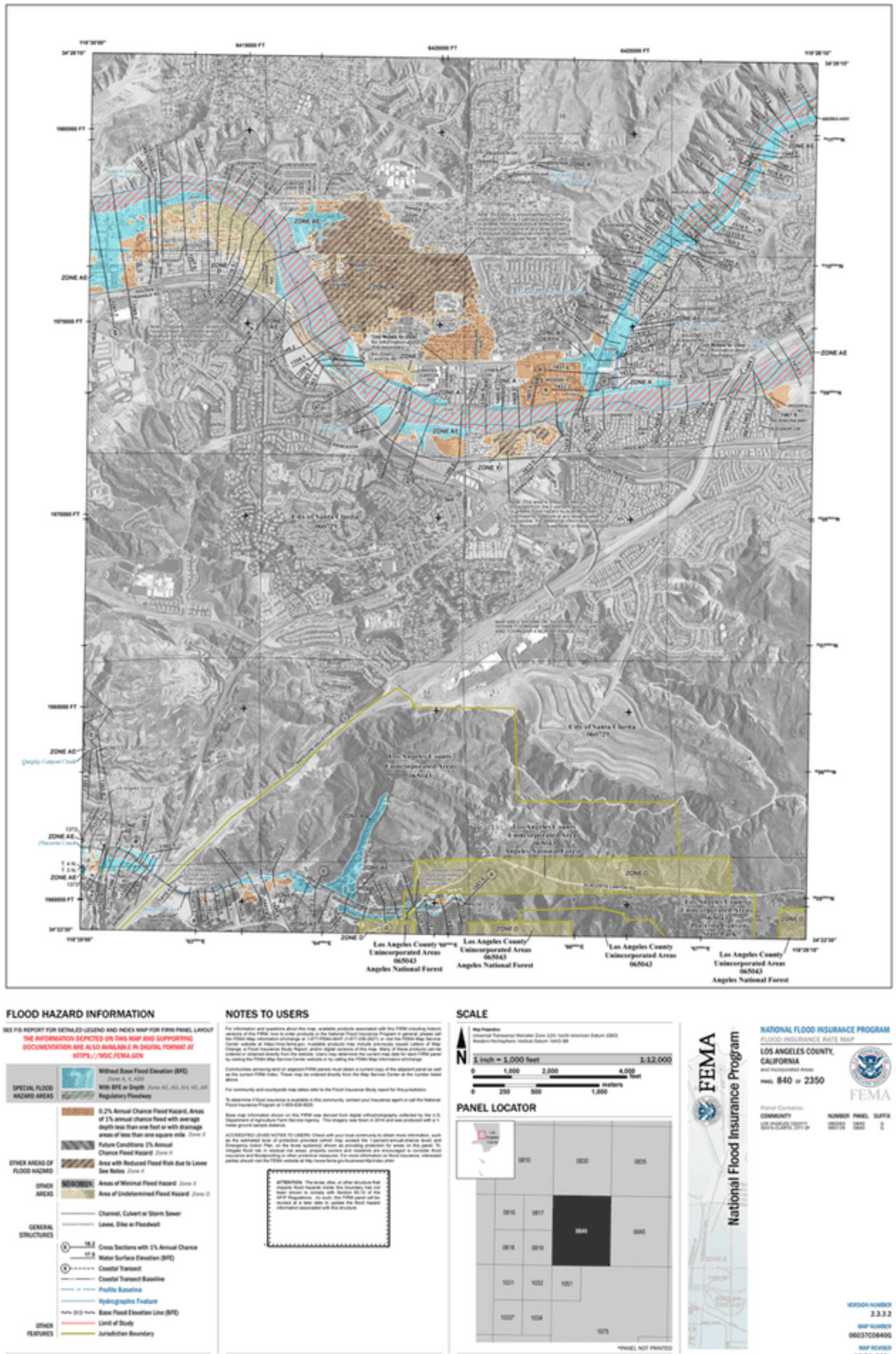

NOTES TO USERS
CITY OF LOS ANGELES
060137
LEGEND
NATIONAL FLOOD INSURANCE PROGRAM
FIRM
FLOOD INSURANCE RATE MAP
LOS ANGELES COUNTY,
CALIFORNIA

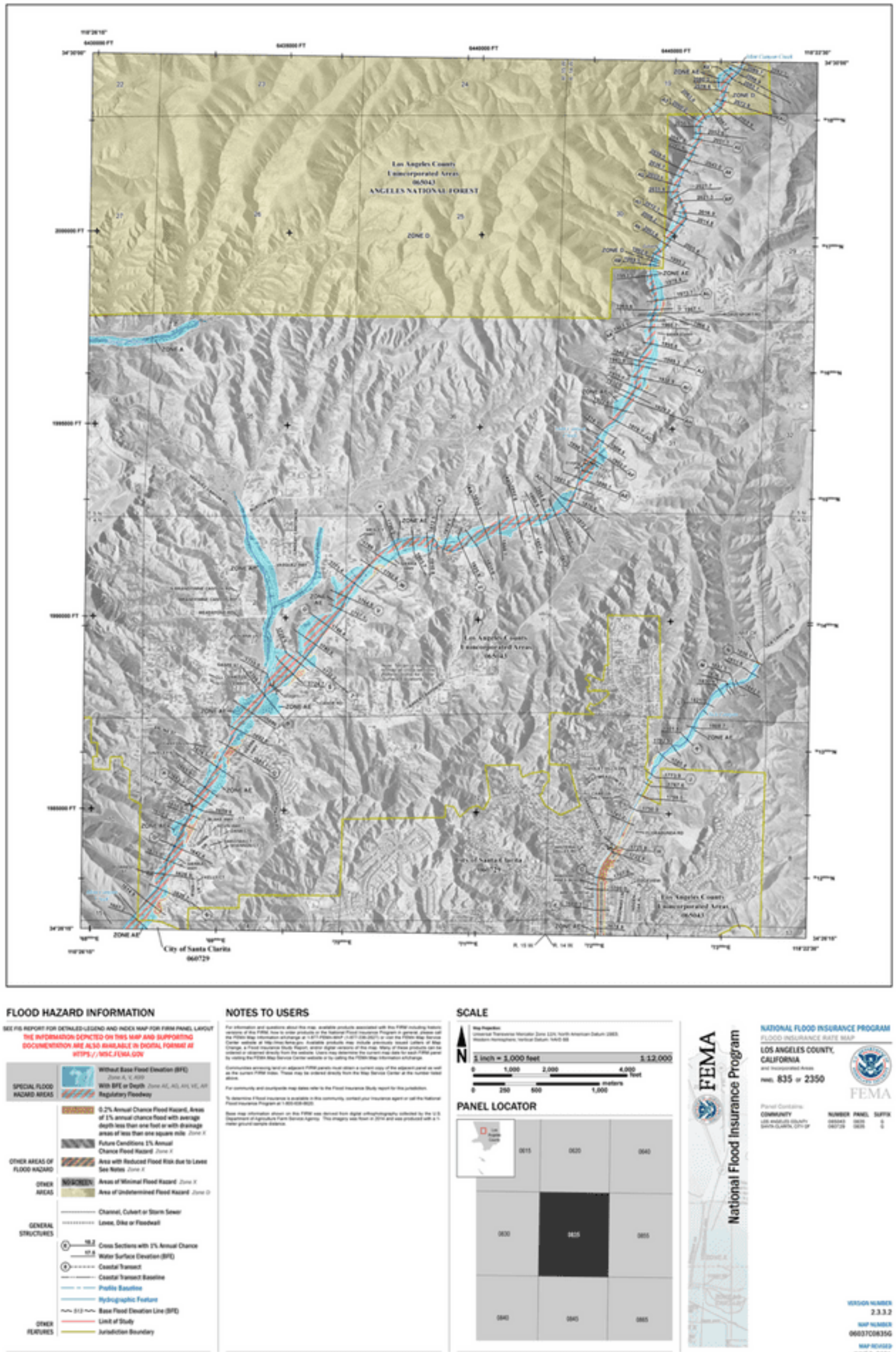

Los Angeles County Unincorporated Areas 065043
ZONE AE
FLOOD HAZARD INFORMATION
SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT
THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT HTTPS://MSC.FEMA.GOV
SPECIAL FLOOD HAZARD AREAS
Without Base Flood Elevation (BFE) Zone A, V, A99
With BFE or Depth Zone AE, AO, AH, VE, AR
Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD
0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
Future Conditions 1% Annual Chance Flood Hazard Zone X
Area with Reduced Flood Risk due to Levee See Notes Zone X
OTHER AREAS
Areas of Minimal Flood Hazard Zone X
Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES
Channel, Culvert or Storm Sewer
Levee, Dike or Floodwall
Cross Sections with 1% Annual Chance Water Surface Elevation (BFE)
Coastal Transect
Coastal Transect Baseline
Profile Baseline
Hydrographic Feature
Base Flood Elevation Line (BFE)
Limit of Study
Jurisdiction Boundary
OTHER FEATURES
NOTES TO USERS
SCALE
1 inch = 500 feet 1:6,000
0 250 500 750 1,000 2,000 feet
0 125 250 500 meters
PANEL LOCATOR
0805 0810 0830 0835 0816 0817 0845 0815 0818 0819 0840 1031 1032 1051 1030 *1033 1034 1075 1040 1045
*PANEL NOT PRINTED
FEMA
National Flood Insurance Program
NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
LOS ANGELES COUNTY, CALIFORNIA
and Incorporated Areas
PANEL 1032 OF 2350
Panel Contains:
COMMUNITY NUMBER PANEL SUFFIX
VERSION NUMBER
2.3.3.2
MAP NUMBER
06037C1032G
MAP REVISED
JUNE 2, 2021

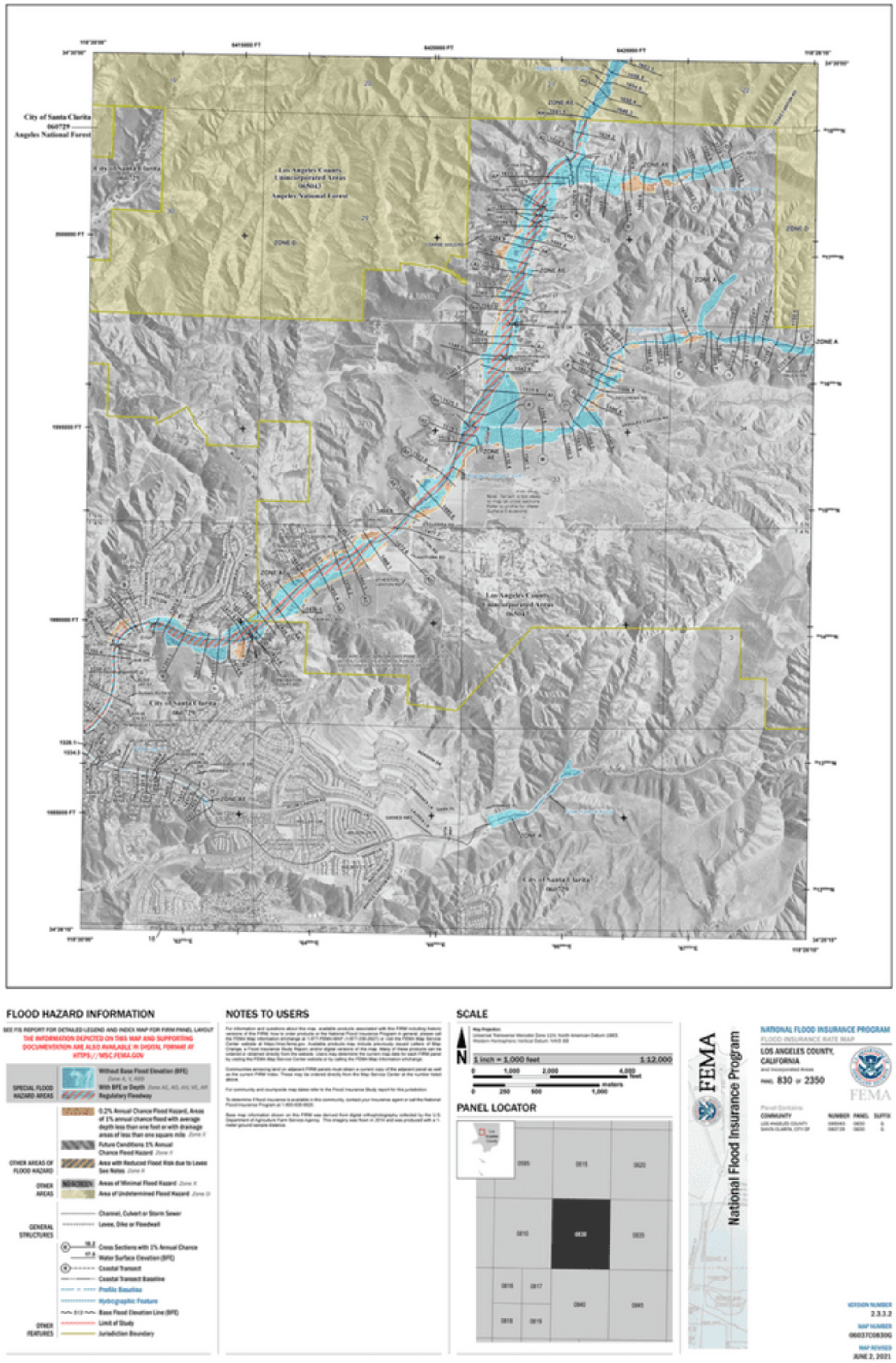

FLOOD HAZARD INFORMATION
NOTES TO USERS
SCALE
1 inch = 500 feet
PANEL LOCATOR
FEMA
National Flood Insurance Program
NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
LOS ANGELES COUNTY, CALIFORNIA
and Incorporated Areas
PANEL 1031 OF 2350
FEMA
VERSION NUMBER
2.3.3.2
MAP REVISED
JUNE 2, 2021

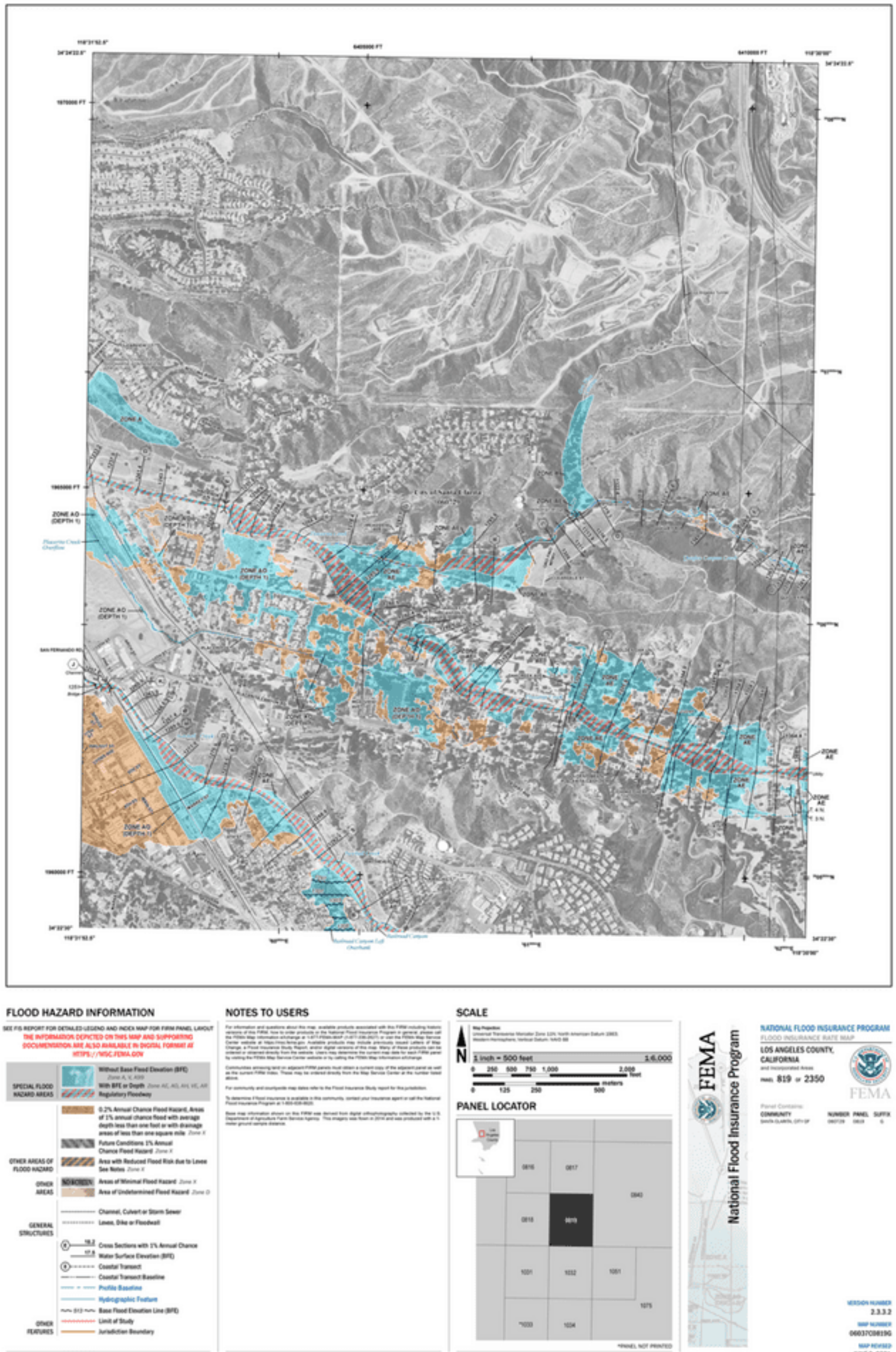


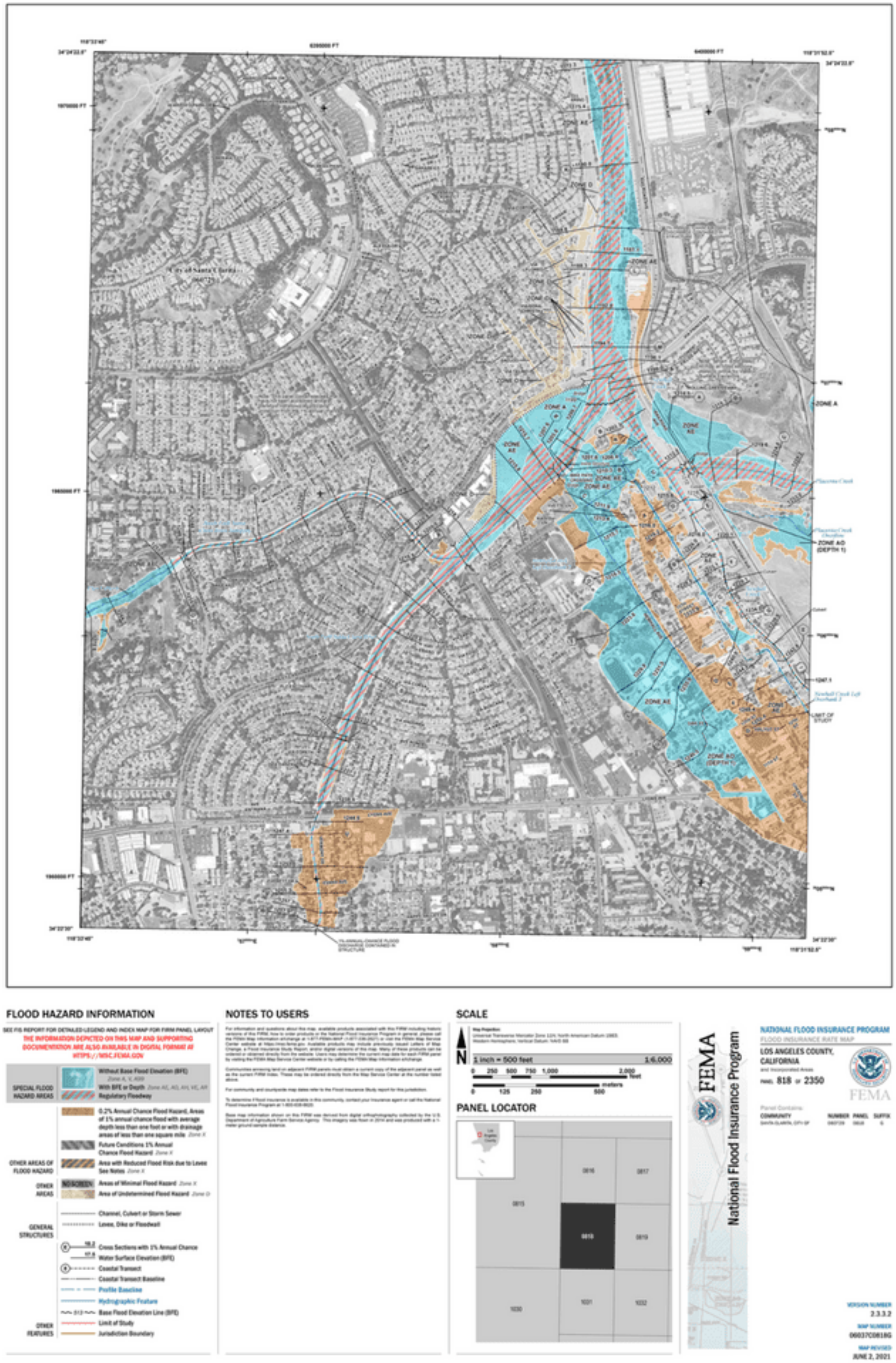

City of Santa Clarita
060729
ZONE AE
Los Angeles County
Unincorporated Areas
065043
City of Santa Clarita
060729
Angeles National Forest
ZONE AO
(DEPTH 1)
ZONE AO
(DEPTH 2)
ZONE D
FLOOD HAZARD INFORMATION
SPECIAL FLOOD HAZARD AREAS
Without Base Flood Elevation (BFE)
With BFE or Depth
Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD
OTHER AREAS
GENERAL STRUCTURES
Channel, Culvert or Storm Sewer
Levee, Dike or Floodwall
Coastal Transect
Coastal Transect Baseline
Profile Baseline
Hydrographic Feature
Base Flood Elevation Line (BFE)
Limit of Study
Jurisdiction Boundary
OTHER FEATURES
NOTES TO USERS
SCALE
1 inch = 1,000 feet
1:12,000
PANEL LOCATOR
FEMA
National Flood Insurance Program
NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
LOS ANGELES COUNTY, CALIFORNIA
PANEL 845 OF 2350
VERSION NUMBER
2.3.3.2
MAP NUMBER
06037C0845G
MAP REVISED
JUNE 2, 2021

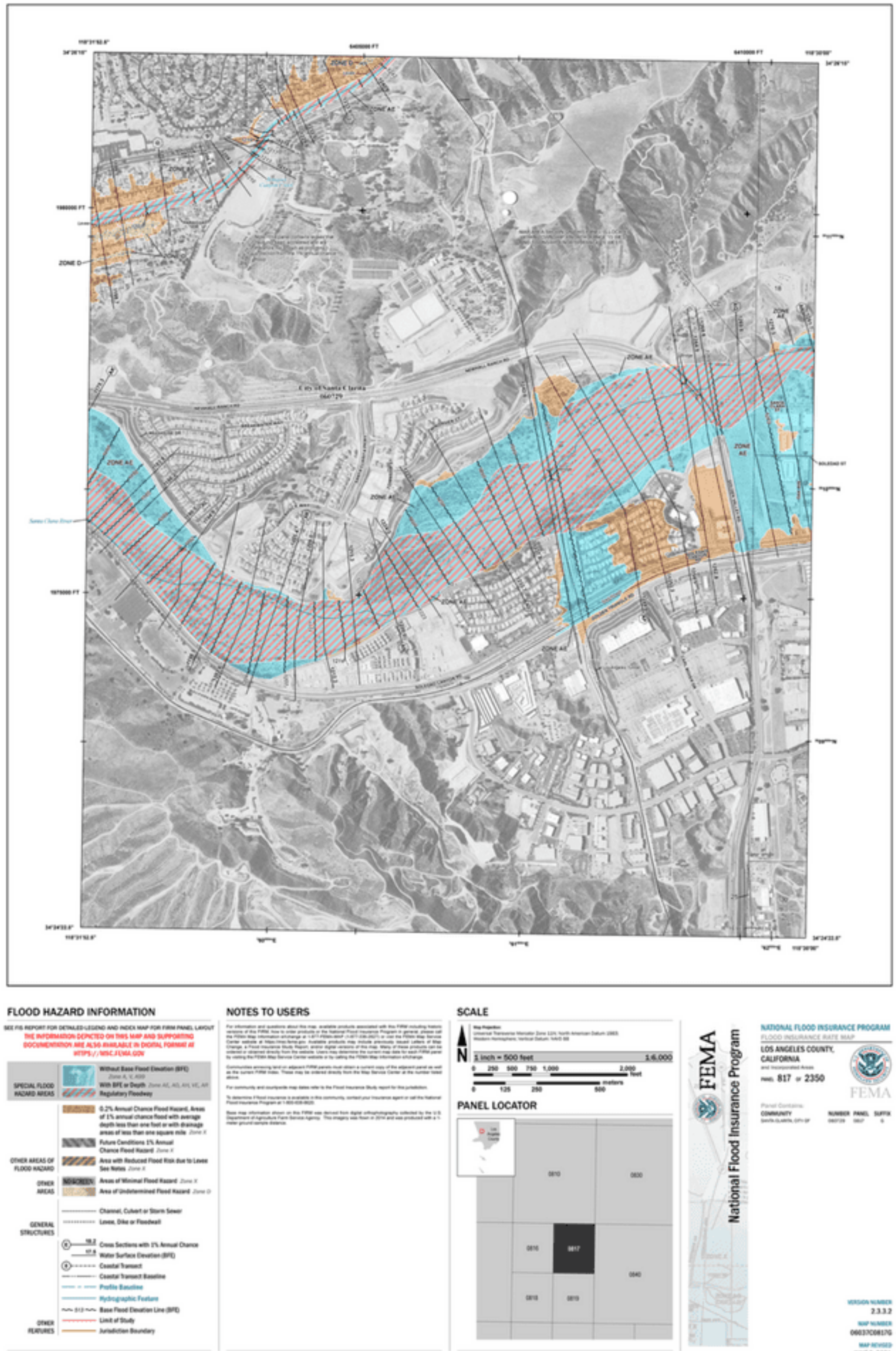

ZONE AE
ZONE X
ZONE D
City of Santa Clarita
Los Angeles County Unincorporated Areas 065043
Angeles National Forest
FLOOD HAZARD INFORMATION
NOTES TO USERS
SCALE
1 inch = 1,000 feet
1:12,000
PANEL LOCATOR
FEMA
National Flood Insurance Program
NATIONAL FLOOD INSURANCE PROGRAM
LOS ANGELES COUNTY, CALIFORNIA
PANEL 840 OF 2350
JUNE 2, 2021

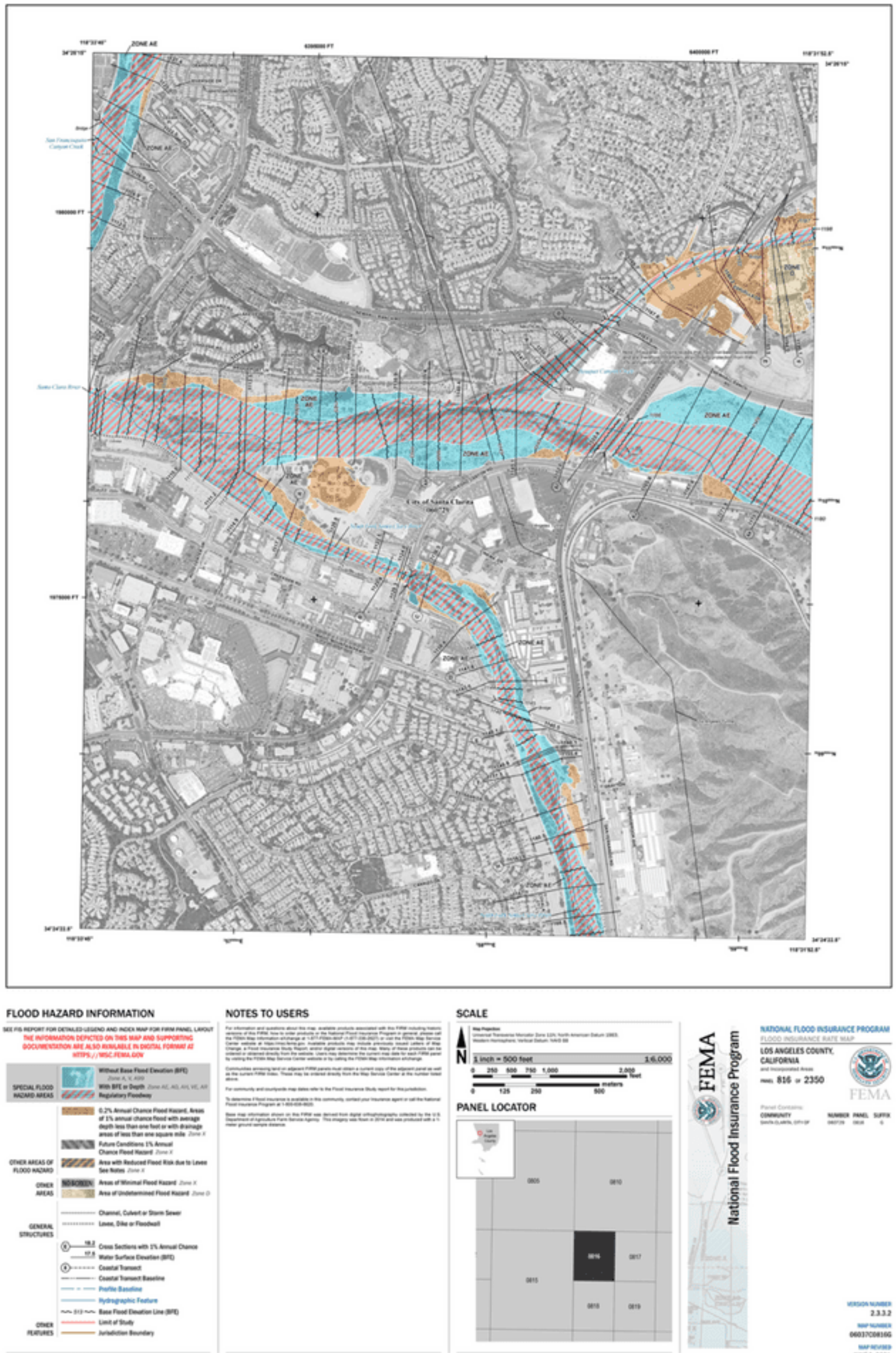

ZONE AE
ZONE D
ZONE A
City of Santa Clarita
060729
FLOOD HAZARD INFORMATION
SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT
THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT HTTPS://MSC.FEMA.GOV
SPECIAL FLOOD HAZARD AREAS
OTHER AREAS OF FLOOD HAZARD
OTHER AREAS
GENERAL STRUCTURES
OTHER FEATURES
NOTES TO USERS
SCALE
1 inch = 1,000 feet
1:12,000
PANEL LOCATOR
FEMA
National Flood Insurance Program
NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
LOS ANGELES COUNTY, CALIFORNIA
PANEL 835 OF 2350
VERSION NUMBER
2.3.3.2
MAP NUMBER
06037C0835G
MAP REVISED
JUNE 2, 2021

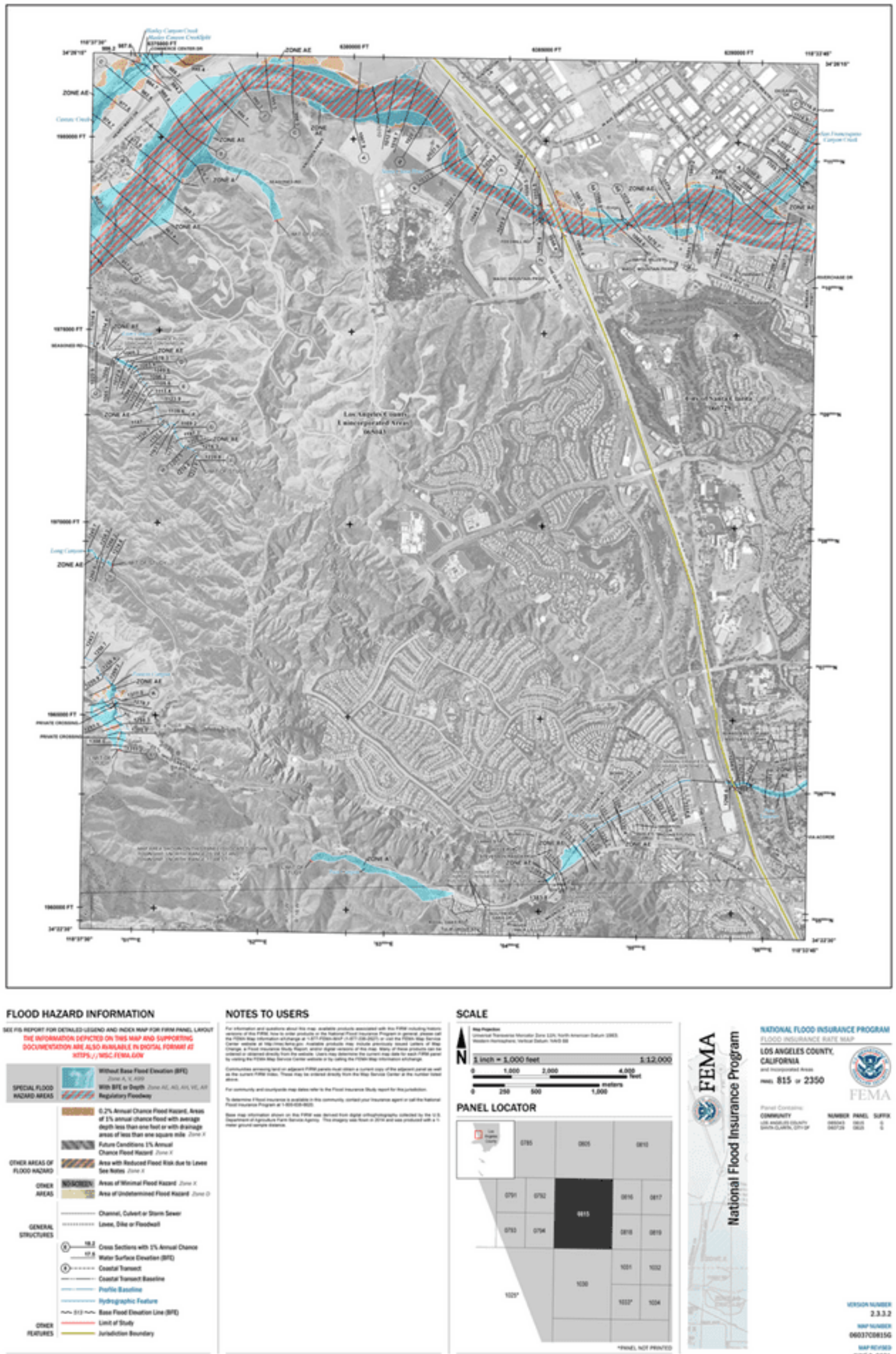

City of Santa Clarita
Los Angeles County Unincorporated Areas
Angeles National Forest
ZONE AE
ZONE A
ZONE D
FLOOD HAZARD INFORMATION
SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT
THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT HTTPS://MSC.FEMA.GOV
SPECIAL FLOOD HAZARD AREAS
Without Base Flood Elevation (BFE) Zone A, V, A99
With BFE or Depth Zone AE, AO, AH, VE, AR
Regulatory Floodway
0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
Future Conditions 1% Annual Chance Flood Hazard Zone X
OTHER AREAS OF FLOOD HAZARD
Area with Reduced Flood Risk due to Levee See Notes Zone X
OTHER AREAS
Areas of Minimal Flood Hazard Zone X
Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES
Channel, Culvert or Storm Sewer
Levee, Dike or Floodwall
Cross Sections with 1% Annual Chance Water Surface Elevation (BFE)
Coastal Transect
Coastal Transect Baseline
Profile Baseline
Hydrographic Feature
Base Flood Elevation Line (BFE)
OTHER FEATURES
Limit of Study
Jurisdiction Boundary
NOTES TO USERS
SCALE
1 inch = 1,000 feet
1:12,000
feet
meters
PANEL LOCATOR
FEMA
National Flood Insurance Program
NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
LOS ANGELES COUNTY, CALIFORNIA
and Incorporated Areas
PANEL 830 OF 2350
VERSION NUMBER
2.3.3.2
MAP NUMBER
06037C0830G
MAP REVISED
JUNE 2, 2021

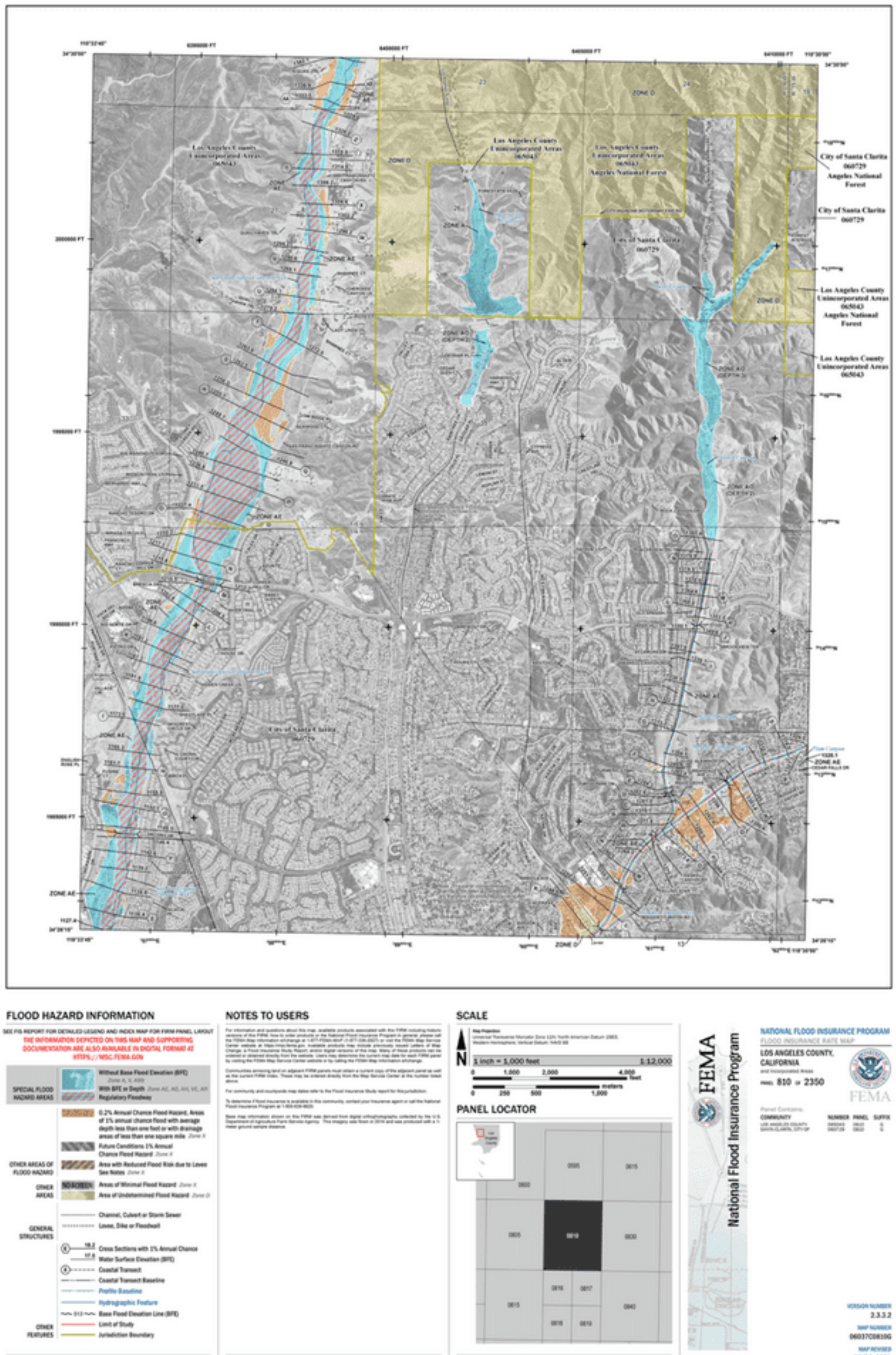

FLOOD HAZARD INFORMATION
SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT
THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT HTTPS://MSC.FEMA.GOV
SPECIAL FLOOD HAZARD AREAS
Without Base Flood Elevation (BFE) Zone A, V, A99
With BFE or Depth Zone AE, AO, AH, VE, AR
Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD
0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
Future Conditions 1% Annual Chance Flood Hazard Zone X
Area with Reduced Flood Risk due to Levee See Notes Zone X
OTHER AREAS
Areas of Minimal Flood Hazard Zone X
Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES
Channel, Culvert or Storm Sewer
Levee, Dike or Floodwall
Cross Sections with 1% Annual Chance Water Surface Elevation (BFE)
Coastal Transect
Coastal Transect Baseline
Profile Baseline
Hydrographic Feature
Base Flood Elevation Line (BFE)
OTHER FEATURES
Limit of Study
Jurisdiction Boundary
NOTES TO USERS
SCALE
N
1 inch = 500 feet
1:6,000
0 250 500 750 1,000 2,000 feet
0 125 250 500 meters
PANEL LOCATOR
0816
0817
0840
0818
0819
1031
1032
1051
1075
*1033
1034
*PANEL NOT PRINTED
FEMA
National Flood Insurance Program
NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
LOS ANGELES COUNTY, CALIFORNIA
and Incorporated Areas
PANEL 819 OF 2350
FEMA
COMMUNITY
NUMBER
PANEL
SUFFIX
VERSION NUMBER
2.3.3.2
MAP NUMBER
06037C0819G
MAP REVISED
JUNE 2, 2021

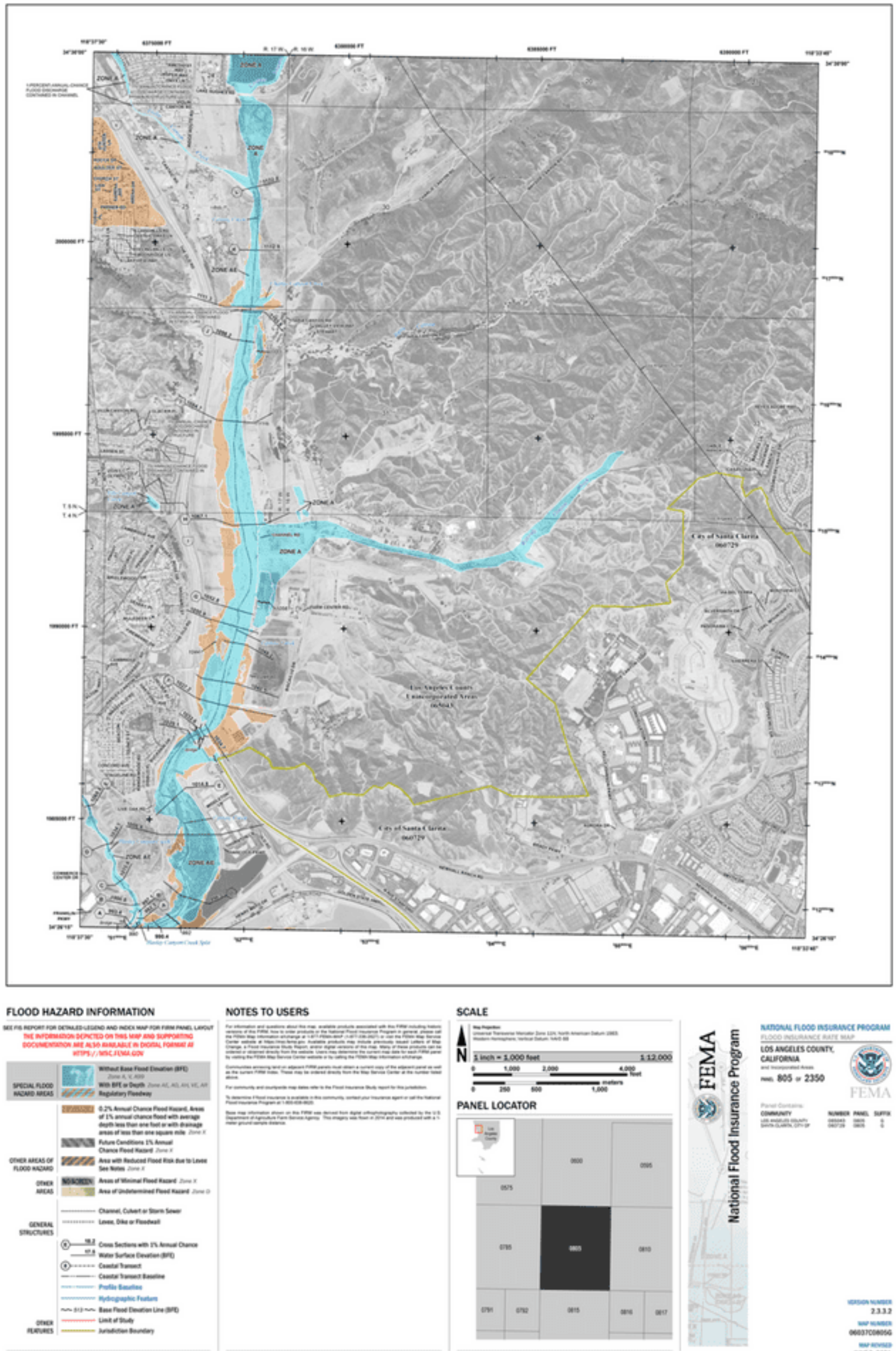

ZONE AE
ZONE A
ZONE AO (DEPTH 1)
FLOOD HAZARD INFORMATION
NOTES TO USERS
SCALE
1 inch = 500 feet
1:6,000
PANEL LOCATOR
FEMA
National Flood Insurance Program
NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
LOS ANGELES COUNTY, CALIFORNIA
PANEL 818 OF 2350
VERSION NUMBER 2.3.3.2
MAP NUMBER 06037C0818G
MAP REVISED JUNE 2, 2021


ZONE AE
ZONE D
FLOOD HAZARD INFORMATION
NOTES TO USERS
SCALE
1 inch = 500 feet
1:6,000
PANEL LOCATOR
FEMA
National Flood Insurance Program
NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
LOS ANGELES COUNTY, CALIFORNIA
PANEL 817 OF 2350

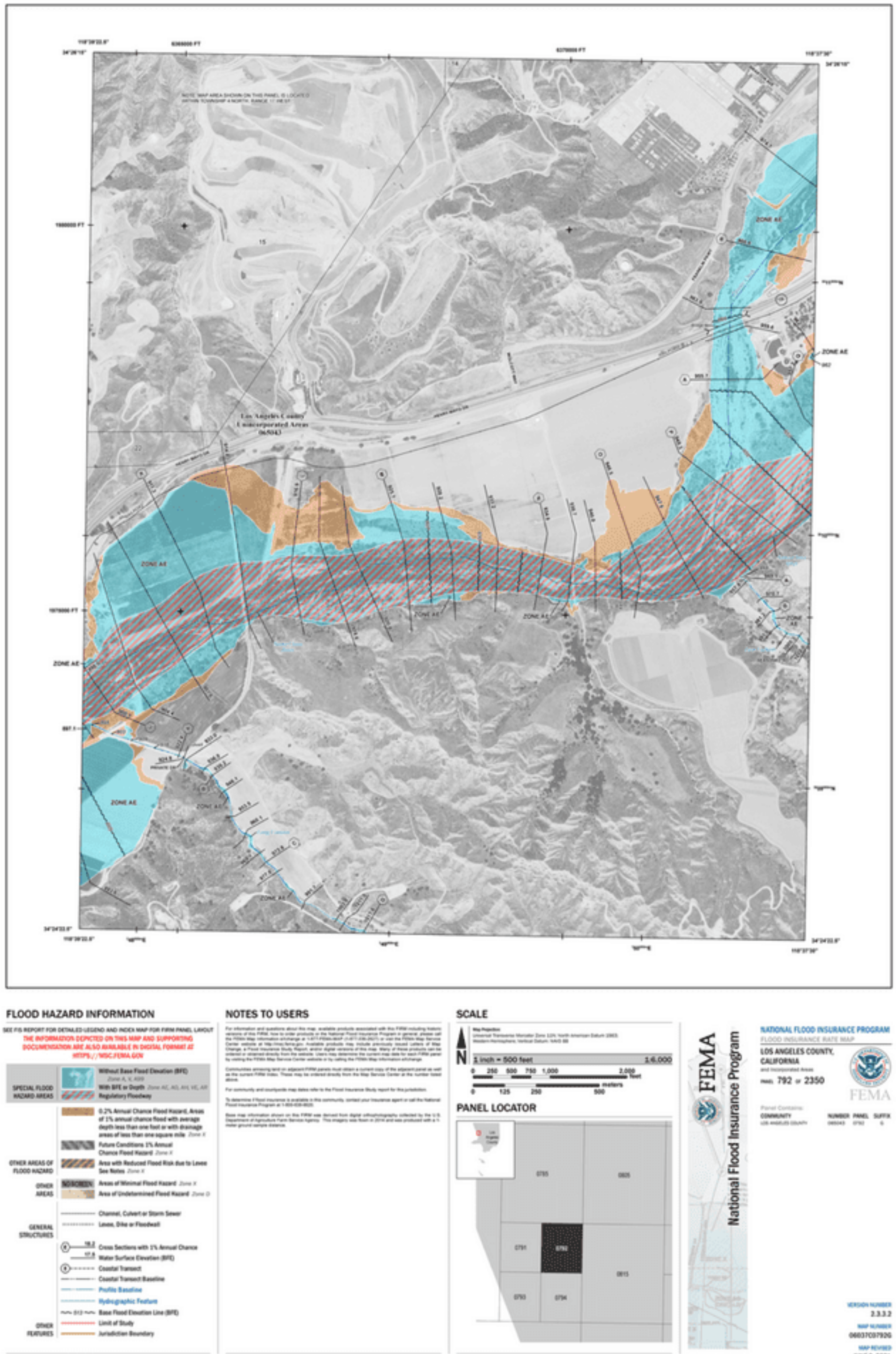

ZONE AE
City of Santa Clarita
FLOOD HAZARD INFORMATION
SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT
THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT HTTPS://MSC.FEMA.GOV
SPECIAL FLOOD HAZARD AREAS
Without Base Flood Elevation (BFE) Zone A, V, A99
With BFE or Depth Zone AE, AO, AH, VE, AR
Regulatory Floodway
0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
Future Conditions 1% Annual Chance Flood Hazard Zone X
OTHER AREAS OF FLOOD HAZARD
Area with Reduced Flood Risk due to Levee See Notes Zone X
OTHER AREAS
NO SCREEN
Areas of Minimal Flood Hazard Zone X
Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES
Channel, Culvert or Storm Sewer
Levee, Dike or Floodwall
Cross Sections with 1% Annual Chance Water Surface Elevation (BFE)
Coastal Transect
Coastal Transect Baseline
Profile Baseline
Hydrographic Feature
Base Flood Elevation Line (BFE)
OTHER FEATURES
Limit of Study
Jurisdiction Boundary
NOTES TO USERS
SCALE
N
1 inch = 500 feet
1:6,000
0 250 500 750 1,000 2,000
feet
meters
0 125 250 500
PANEL LOCATOR
0805
0810
0815
0816
0817
0818
0819
FEMA
National Flood Insurance Program
NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
LOS ANGELES COUNTY, CALIFORNIA
and Incorporated Areas
PANEL 816 OF 2350
FEMA
Panel Contains:
COMMUNITY
NUMBER
PANEL
SUFFIX
VERSION NUMBER
2.3.3.2
MAP NUMBER
06037C0816G
MAP REVISED
JUNE 2, 2021


FLOOD HAZARD INFORMATION
NOTES TO USERS
SCALE
1 inch = 1,000 feet
1:12,000
PANEL LOCATOR
FEMA
National Flood Insurance Program
NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
LOS ANGELES COUNTY, CALIFORNIA
and Incorporated Areas
PANEL 815 OF 2350
VERSION NUMBER
2.3.3.2
MAP NUMBER
06037C0815G
MAP REVISED
JUNE 2, 2021


FLOOD HAZARD INFORMATION
NOTES TO USERS
SCALE
PANEL LOCATOR
FEMA
National Flood Insurance Program



ZONE A
ZONE AE
City of Santa Clarita
060729
Los Angeles County
Unincorporated Areas
FLOOD HAZARD INFORMATION
NOTES TO USERS
SCALE
1 inch = 1,000 feet
1:12,000
PANEL LOCATOR
FEMA
National Flood Insurance Program
NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
LOS ANGELES COUNTY,
CALIFORNIA
PANEL 805 OF 2350
VERSION NUMBER
2.3.3.2
MAP NUMBER
06037C0805G
MAP REVISED
JUNE 2, 2021


ZONE AE
FLOOD HAZARD INFORMATION
NOTES TO USERS
SCALE
1 inch = 500 feet
1:6,000
PANEL LOCATOR
FEMA
National Flood Insurance Program
NATIONAL FLOOD INSURANCE PROGRAM
LOS ANGELES COUNTY, CALIFORNIA
PANEL 792 OF 2350
JUNE 2, 2021

City of Santa Clarita

2026 LHMP

Local Hazard Mitigation Plan

City of
SANTA CLARITA

23920 Valencia Blvd. Santa Clarita, CA 91355
661-259-2489