



2020 County of Los Angeles All-Hazards Mitigation Plan

Chief Executive Office - Office of Emergency Management



**2020 COUNTY OF LOS ANGELES
ALL-HAZARDS MITIGATION PLAN**

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LIST OF ACRONYMS AND ABBREVIATIONS

°F	degrees Fahrenheit
AECOM	AECOM Technical Services, Inc.
AB	Assembly Bill
AHMP	All-Hazards Mitigation Plan
Cal FIRE	California Department of Forestry and Fire Protection
Cal OES	California Office of Emergency Services
CFR	Code of Federal Regulations
CGS	California Geological Survey
CWPP	Community Wildfire Protection Plan
CPG	Comprehensive Preparedness Guide
CRS	Community Rating System
DFIRM	Digital Flood Insurance Rate Map
DHS	Department of Homeland Security
DMA	Disaster Mitigation Act
DR	Disaster Declaration Number
DSOD	Division of Safety of Dams
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FHSZ	Fire Hazard Severity Zone
GIS	Geographic Information System
LACMA	Los Angeles County Museum of Art
LRA	Local Responsibility Area
M	Magnitude
MARAC	Mutual Aid Regional Advisory Committee
NASA	National Aeronautics and Space Administration
NFIP	National Flood Insurance Program
NHM	Los Angeles County Natural History Museum
OEM	Office of Emergency Management
PGA	Peak Ground Acceleration
RL	Repetitive Loss
SFHA	Special Flood Hazard Area
SRA	State Responsibility Area
U.S.	United States

USACE United States Army Corps of Engineers
USGS United States Geological Survey
WUI wildland-urban interface



County of Los Angeles All-Hazards Mitigation Plan

Letter of Promulgation

To: Officials, Employees, and Residents of Los Angeles County

Preservation of life and property is an inherent responsibility of local, state, and federal government. The County of Los Angeles updated the 2020 All-Hazards Mitigation Plan (AHMP) to cover mitigation responsibilities of County departments as well as the unincorporated communities.

While no plan can guarantee prevention of death and destruction, well-developed plans, carried out by knowledgeable and well-trained personnel, can decrease the amount loss experienced after an emergency. The Federal Disaster Mitigation Act of 2000 (DMA 2000) requires that local jurisdictions have an updated mitigation plan in order to be eligible for mitigation project activities. The intent of the 2020 AHMP also ensures that mitigation actions are based on sound planning processes that account for the risks and capabilities of communities within Los Angeles County. Mitigation plans form the foundation for a community's long-term strategy to reduce disaster losses and break the cycle of disaster damage, reconstruction, and repeated damage.

The AHMP should be reviewed on an annual basis and approved every five years. The AHMP conforms to the requirements set forth by the Federal Emergency Management Agency (FEMA) and the California Governor's Office of Emergency Services (Cal OES). The Los Angeles County Board of Supervisors gives its full support to the 2020 All-Hazards Mitigation Plan and urges all officials, employees, and residents, individually and collectively, to share in our commitment to the effective preparedness and response to disasters.

This letter promulgates the 2020 All-Hazards Mitigation Plan which becomes effective upon approval by the Los Angeles County Board of Supervisors

Signed: 
Kathryn Barger, Chair
Los Angeles County Board of Supervisors

Date: 5.18.20

1 INTRODUCTION

1.1 HAZARD MITIGATION PLANNING

As defined in Title 44 of the Code of Federal Regulations (CFR), Subpart M, Section 206.401, hazard mitigation is “any action taken to reduce or eliminate the long-term risk to human life and property from natural hazards.” As such, hazard mitigation is any work to minimize the impacts of any type of hazard event before it occurs. Hazard mitigation aims to reduce losses from future disasters. It is a process that identifies and profiles hazards, analyzes the people and facilities at risk, and develops mitigation actions to reduce or eliminate hazard risk. The implementation of the mitigation actions, which include short- and long-term strategies that may involve planning, policy changes, programs, projects, and other activities, is the end result of this process.

In recent years, local hazard mitigation planning has been driven by a federal law, known as the Disaster Mitigation Act (DMA) of 2000. On October 30, 2000, Congress passed the DMA (Public Law 106-390), which amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988 (Stafford Act) (Title 42 of the United States Code Section 5121 et seq.) by repealing the act’s previous mitigation planning section (409) and replacing it with a new mitigation planning section (322). This new section emphasized the need for state, tribal, and local entities to closely coordinate mitigation planning and implementation efforts. This new section also provided the legal basis for the Federal Emergency Management Agency’s (FEMA’s) mitigation plan requirements for the Hazard Mitigation Assistance grant programs.

1.2 2020 ALL-HAZARDS MITIGATION PLAN SYNOPSIS

To meet the requirements of the DMA, the Los Angeles County Chief Executive Office—Office of Emergency Management (OEM) (hereinafter referred to as the Los Angeles County OEM) has prepared an All-Hazards Mitigation Plan (AHMP) (hereinafter referred to as the 2020 AHMP) to assess risks posed by natural hazards and to develop a mitigation action plan for reducing the risks in Los Angeles County. The 2020 AHMP replaces the AHMP that was approved in 2014.

The 2020 AHMP is organized to follow FEMA’s Local Mitigation Plan Review Tool, which demonstrates how local AHMPs meet the DMA regulations. As such, specific planning elements of this review tool are in their appropriate plan sections.

The 2020 AHMP structure has been updated to include the following sections:

- **Section 2 Planning Process** provides an overview of the 2020 planning process, starting with a plan update timeline. It identifies Advisory Committee members and describes their involvement with the plan update process. It also details stakeholder outreach, public involvement and continued public involvement. It provides an overview of the existing plans and reports and how they were incorporated into the 2020 AHMP and lastly lays out a plan update method and schedule. Supporting planning process documentation is listed in **Appendix A**.
- **Section 3 Community Profile** describes the planning area for the 2020 AHMP, which includes the unincorporated areas of Los Angeles County (hereinafter referred to as Unincorporated Los Angeles County). It touches on the current population and development trends in the County and discusses vulnerable populations in the County, including the growing homeless crisis. Finally, this section lists the County-owned and County-related critical facilities included in this plan. Supporting community profile information can be found in **Appendix B**.
- **Section 4 Hazard Identification and Risk Assessment** describes each of the eight hazards addressed in this plan. Additionally, it includes impact (i.e., risk assessment) tables for the planning area, vulnerable populations and critical facilities in each hazard area. An overall

summary description is also provided for each hazard. **Appendix C** contains supporting hazard identification and risk assessment information.

- **Section 5 Mitigation Strategy** details Los Angeles County's capabilities (authorities, policies, programs, and resources) available for hazard mitigation. It also discusses the County's participation in the National Flood Insurance Program (NFIP). Finally, it describes the mitigation strategy, which is the blueprint for how hazard risks will be reduced. The mitigation strategy is made up of three main components: mitigation goal(s); potential mitigation actions and projects; and a mitigation action plan.
- **Section 6 Plan Review, Evaluation, and Implementation** discusses the revisions made to the 2020 AHMP to address changes in development, progress made in local mitigation efforts and changes to priorities.
- **Section 7 Plan Adoption** contains a scanned copy of the adoption resolution.

2 PLANNING PROCESS

Section 2—Planning Process addresses Element A of the Local Mitigation Plan Regulation Checklist.

Regulation Checklist – 44 CFR 201.6 Local Mitigation Plans	
Element A: Planning Process	
A1.	Does the Plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? (Requirement §201.6(c)(1))
A2.	Does the Plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, agencies that have the authority to regulate development as well as other interests to be involved in the planning process? (Requirement §201.6(b)(2))
A3.	Does the Plan document how the public was involved in the planning process during the drafting stage? (Requirement §201.6(b)(1))
A4.	Does the Plan describe the review and incorporation of existing plans, studies, reports, and technical information? (Requirement §201.6(b)(3))
A5.	Is there discussion of how the community(ies) will continue public participation in the plan maintenance process? (Requirement §201.6(c)(4)(iii))
A6.	Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a 5-year cycle)? (Requirement §201.6(c)(4)(i))

2.1 OVERVIEW OF 2020 AHMP PLANNING PROCESS

The development of the 2020 AHMP was collaborative effort between the Los Angeles County OEM, the consulting firm AECOM Technical Services, Inc. (AECOM), an Advisory Committee, and various Los Angeles County departments and agencies. **Table 2-1** provides a timeline of the major plan update tasks and milestones over a 9-month period. **Table 2-2** lists the Advisory Committee members and how they contributed to the development of the plan.

Table 2-1. AHMP Timeline

Date	Tasks	People Involved
March 2019	Reviewed the 2014 AHMP and decided to continue efforts to streamline the plan Held 2020 AHMP Advisory Committee kick-off meeting (March 15)	AHMP Project Manager, Advisory Committee
April 2019	Determined the hazards to be profiled, including climate change (new to the 2020 AHMP), drought, dam failure, earthquake, flood, landslide, tsunami and wildfire (all addressed in the 2014 AHMP)	AHMP Project Manager, AECOM
May 2019	Collected local and regional existing plans and reports	AECOM
June 2019	Determined the Geographic Information System (GIS) strategy for risk assessment including land area/geographical boundaries and critical facilities and discussed how to incorporate people experiencing homelessness	AHMP Project Manager, AECOM, Los Angeles County OEM

Table 2-1. AHMP Timeline

Date	Tasks	People Involved
July 2019	Identified initial list of stakeholders Crafted public outreach messages for the Twitter handle @ReadyLACounty Created draft hazard figures Developed homeless people risk assessment tables Developed land area/geographic boundaries risk assessment tables Rewrote/updated the hazard profiles into a streamlined tabular format Began developing/collecting draft mitigation actions Streamlined and updated the community profile section to only address the planning area, population and development trends and County critical facilities (deleted general County information)	AHMP Project Manager, AECOM
August 2019	Tweeted public outreach messages about the 2020 AHMP Emailed stakeholders about the 2020 AHMP Conducted conference call with Los Angeles County Regional Planning (August 5) to discuss joint public outreach efforts as well as mitigation strategies Conducted meeting with Los Angeles County Public Works (August 7) to discuss 2020 AHMP, progress made to date, and existing and new mitigation strategies Developed critical facilities risk assessment tables Created draft risk assessment tables Revised plan maintenance approach from quarterly meetings to annual review questionnaires	AHMP Project Manager, AECOM, Los Angeles County Department of Regional Planning, Los Angeles County Public Works, Advisory Committee
September 2019	Updated the capability assessment tables Developed a list of potential mitigation actions and prioritized actions based on a new tiered approach Created public outreach flyers in English and Spanish and placed on the Los Angeles County OEM website Documented progress in local mitigation efforts Addressed changes in development since the 2014 AHMP Created Initial Draft AHMP	AHMP Project Manager, AECOM, Advisory Committee
October 2019	Created Public Draft AHMP Created Final Draft AHMP	AECOM

Table 2-2. Hazard Mitigation Advisory Committee

Name	Department / Agency, Title	Contribution
Emily Montanez	Los Angeles County OEM, AHMP Project Manager, Senior Program Manager	Led kick-off meeting, reviewed draft hazard figures and risk assessment tables, draft mitigation actions and initial draft plan.
Margaret Carlin	Los Angeles County OEM, GIS Project Supervisor	Provided input on GIS, reviewed draft hazard figures and risk assessment tables, draft mitigation actions and initial draft plan.
Stephanie Kim	Los Angeles County OEM, Academic Intern	Reviewed and updated the community profile, provided input on people experiencing homelessness, participated in conference calls, attended department meetings, and reviewed the initial draft plan.
Caroline Chen	Los Angeles County Department of Regional Planning, Regional Planner	Attended kick-off meeting, participated in conference call, reviewed draft hazard figures and risk assessment tables, draft mitigation actions, and initial draft plan.
Iris Chi	Los Angeles County Department of Regional Planning, Regional Planner	Attended kick-off meeting, participated in conference call, reviewed draft hazard figures and risk assessment tables, draft mitigation actions and initial draft plan.
Loni Eazell	Los Angeles County Public Works, Disaster Services Specialist	Coordinated August 7 department meeting, reviewed draft hazard figures and risk assessment tables, draft mitigation actions, and initial draft plan.
Frank Forman	Los Angeles County Fire Department, Battalion Chief	Reviewed draft hazard figures and risk assessment tables, draft mitigation actions and initial draft plan.
Andrew Gano	Glendale Fire Department, Captain	Attended kick-off meeting, reviewed draft hazard figures and risk assessment tables, draft mitigation actions, and initial draft plan.
Angine Geragoosian	Los Angeles County Public Works, Disaster Services Analyst	Attended kick-off meeting, reviewed draft hazard figures and risk assessment tables, draft mitigation actions, and initial draft plan.
Patricia Hachiya	Los Angeles County Regional Planning, Supervising Regional Planner	Attended kick-off meeting, participated in conference call, reviewed draft hazard figures and risk assessment tables, draft mitigation actions, and initial draft plan.
Jack Husted	Los Angeles County Public Works, Senior Civil Engineer	Attended August 7 meeting, reviewed draft hazard figures and risk assessment tables, draft mitigation actions, and initial draft plan.
Sheryll Jones	Cal OES Southern Region, Emergency Services Coordinator	Advised the Los Angeles County OEM about initial update process and reviewed initial draft plan.
Sinan Khan	Los Angeles County OEM, Associate Director	Reviewed draft hazard figures and risk assessment tables, draft mitigation actions and initial draft plan.

Table 2-2. Hazard Mitigation Advisory Committee

Name	Department / Agency, Title	Contribution
Diana Manzano	Area D Disaster Management, Coordinator	Attended kick-off meeting, reviewed draft hazard figures and risk assessment tables, draft mitigation actions, and initial draft plan.
John Eric Pearce	Los Angeles County Fire Department, Captain	Reviewed draft hazard figures and risk assessment tables, draft mitigation actions, and initial draft plan.
Christine Shaffer	Los Angeles County Sheriff's Department, Deputy	Reviewed draft hazard figures and risk assessment tables, draft mitigation actions, and initial draft plan.
Nathaniel VerGow	Los Angeles Homeless Services Authority, Director of Access and Engagement	Reviewed draft hazard figures and risk assessment tables, draft mitigation actions, and initial draft plan.
Steven Wallace	San Gabriel Fire Department, Interim Fire Chief	Reviewed draft hazard figures and risk assessment tables, draft mitigation actions, and initial draft plan.
Iain Watt	Los Angeles County OEM, Emergency Management Coordinator	Participated in conference call, reviewed draft hazard figures and risk assessment tables, draft mitigation actions, and initial draft plan.

2.2 OPPORTUNITIES FOR STAKEHOLDERS

On August 20, 2019, the AHMP Project Manager reached out to stakeholders via email (see **Appendix A**) about the 2020 AHMP and invited them to participate in the plan update process. The stakeholders were notified again on October 4, 2019, when a copy of the public draft plan was available for review on the Los Angeles County OEM website. 2020 AHMP stakeholders include members of the Mutual Aid Regional Advisory Committee (MARAC) for the Southern Region. The MARAC consists of: the California Office of Emergency Services (Cal OES) regional administrator, or deputy, for the Administrative Region encompassing the mutual aid region(s); regional mutual aid coordinators (fire, law enforcement, disaster medical, and other established mutual aid systems); a representative from each operational area located in the mutual aid region; representatives from two municipalities (small/large and rotates bi-annually); regional public utility representative; private utility representative; special district representative; and other designee as appointed by an individual MARAC.

The Cal OES Southern Region was the most involved stakeholder throughout the plan update process; advising the Los Angeles County OEM on scheduling and as well as the messaging to the MARAC and greater public audience.

2.3 PUBLIC INVOLVEMENT

The Los Angeles County OEM engaged the public in the plan update process through various media formats. A flyer about the 2020 AHMP (available in both English and Spanish) was placed on the Los Angeles County OEM website in September 2019. The Los Angeles County OEM also placed a copy of the public draft plan on the website for public comment on October 4, 2019. As of the drafting of the final draft plan, the Los Angeles County OEM had received no public comments to date. The plan is available here:

<https://www.lacounty.gov/emergency/County-of-los-angeles-all-hazards-mitigation-plan/>

Additionally, the Los Angeles County OEM used Twitter (@ReadyLACounty) to engage the public through a series of tweets about the 2020 AHMP, hazards in Los Angeles County, hazard mitigation planning, and the public draft plan. The public “liked” the plan development tweet series but did not provide any comments.

All public involvement documentation is located in **Appendix A**.

2.4 REVIEW AND INCORPORATION OF EXISTING PLANS AND REPORTS

The consultant reviewed existing relevant information to include in the 2020 AHMP. **Table 2-3** lists the plans and reports reviewed as well as information to be incorporated into the 2020 AHMP.

Table 2-3. Existing Plans and Reports

Plans and Reports	Information to be Incorporated into the 2020 AHMP
Los Angeles County Operational Area Emergency Response Plan (2012)	Appendix K Hazards-Specific to the operational area into Section 4 Hazard Identification and Risk Assessment
Los Angeles County 2035 General Plan (2015)	Safety element mitigation policies into Section 5 – Mitigation Strategy
Los Angeles County Floodplain Management Plan (2016)	Flood hazard profile, non-implemented flood mitigation initiatives into Section 4 - Hazard Identification and Risk Assessment
County of Los Angeles Floodplain Management Plan Progress Report 2017 – 2018	Non-implemented flood mitigation initiatives into Section 5 - Mitigation Strategy, implemented flood mitigation initiatives into Section 6 Plan Review, Evaluation, and Implementation
County of Los Angeles Repetitive Loss Area Analysis Progress Report 2017 – 2018	Non-implemented flood mitigation initiatives into Section 5 - Mitigation Strategy, implemented flood mitigation initiatives into Section 6 - Plan Review, Evaluation, and Implementation
Unincorporated Los Angeles County Community Climate Action Plan 2020	Climate change mitigation objectives into Section 5 - Mitigation Strategy
Los Angeles County Fire Department 2018 Strategic Fire Plan	Vegetation management programs into Section 5 - Mitigation Strategy
OurCounty: Los Angeles Countywide Sustainability Plan (2019)	Climate change mitigation objectives into Section 5 - Mitigation Strategy
2019 Greater Los Angeles Homeless Count Results	People experiencing homelessness count into Section 4 - Hazard Identification and Risk Assessment
Southern California Earthquake Data Center’s Earthquake Catalogs	Historic seismic data into Section 4 - Hazard Identification and Risk Assessment
Maritime Tsunami Response Playbooks: Background Information and Guidance for Response and Hazard Mitigation Use (2016)	Historical tsunami information and evaluation data into Section 4 - Hazard Identification and Risk Assessment
FEMA Flood Insurance Study, Los Angeles County, California (2018)	Historical flood information and flood hazard areas into Section 4 - Hazard Identification and Risk Assessment
U.S. Geological Survey (USGS): Rainfall and Landslides in Southern California (active)	Landslide nature, location, historical and extent information into Section 4 - Hazard Identification and Risk Assessment

2.5 CONTINUED PUBLIC PARTICIPATION

A copy of the 2020 AHMP will be kept on the Los Angeles County OEM website along with contact information. The Los Angeles County OEM will also notify residents of any changes or updates to the 2020 AHMP, including mitigation projects identified in the plan as they are implemented, via Twitter (@ReadyLACounty).

2.6 PLAN UPDATE METHOD AND SCHEDULE

The 2014 AHMP recommended quarterly meetings to discuss and track mitigation projects implemented during the lifespan of the 2014 AHMP. It is unknown how often specific departments/agencies met to track the status of their mitigation actions. For the 2020 AHMP, the plan update method and schedule has been revised to include an annual review and an Advisory Committee roundtable prior to the 5-year update. Mitigation projects will be monitored via a progress project report. Details are as follows:

- **Annual Review Worksheets:** Every 12 months from plan adoption, the AHMP Project Manager will email each member of the Advisory Committee an Annual Review Worksheet to complete. As shown in Appendix A, the Annual Review Worksheet reflects the Local Mitigation Plan Review Tool and includes the following: planning process, hazard profile, risk assessment, and mitigation strategy. Each member of the Advisory Committee will email completed worksheets back to the AHMP Project Manager to review. The AHMP Project Manager will summarize these findings and email them out to the committee. If the AHMP Project Manager believes that the 2020 AHMP needs to be updated based on the findings, then an invitation will be sent to Advisory Committee members to attend a formal AHMP update meeting.
- **Mitigation Progress Project Reports:** Mitigation actions will be monitored and updated using the Mitigation Project Progress Report. During each annual review, each department or agency currently administering a mitigation project will submit a progress report to the AHMP Project Manager. For projects that are being funded by a FEMA mitigation grant, FEMA quarterly reports may be used as the preferred reporting tool. As shown in Appendix A, the progress report will discuss the current status of the mitigation project, including any changes made to the project, identify implementation problems, and describe appropriate strategies to overcome them.
- **Advisory Committee Roundtable:** On the fourth year of the update, the AHMP Project Manager will reconvene the Advisory Committee updating membership, if necessary) and lead a tabletop exercise with the Advisory Committee to: collect the Annual Review Worksheet and any Mitigation Project Progress Reports and FEMA quarterly reports, determine hazards to be included in the 2024 AHMP, develop a new work plan, and begin the plan update process.

3 COMMUNITY PROFILE

3.1 PLANNING AREA

With approximately 4,760square miles, Los Angeles County is geographically one of the largest counties in the country. As shown in **Figure 3-1**, Los Angeles County stretches along 75 miles of the Pacific Coast of southern California and is bordered to the east by Orange County and San Bernardino County, to the north by Kern County, and to the west by Ventura County. Los Angeles County has two islands, Santa Catalina (75.00 square miles) and San Clemente (60.69 square miles), which are part of an eight-island group called the Channel Islands.

As shown in **Tables 3-1 through 3-6** and **Figures 3-2 through 3-6**, Los Angeles County is divided into five supervisorial districts, each representing approximately 2 million people in 88 cities and approximately 140 communities or 122 countywide statistical areas. The five supervisorial districts consist of 4,150 square miles, with 3,014.17 square miles located in Unincorporated Los Angeles County. The remaining area of Los Angeles County is federal land, including the Los Padres National Forest and Angeles National Forest.

For the 2020 AHMP, the planning area is defined as Unincorporated Los Angeles County. However, the plan’s risk assessment includes: Los Angeles County, Unincorporated Los Angeles County and supervisorial districts 1-5. In addition, specific countywide statistical area risk assessment information is provided in **Appendix C**.

Table 3-1. Los Angeles County Land Area

Area	Square Miles
Los Angeles County	4,760.72
Unincorporated Los Angeles County	3,041.17
Supervisorial District 1	246.19
Supervisorial District 2	161.83
Supervisorial District 3	431.21
Supervisorial District 4	439.95
Supervisorial District 5	2,807.00

Table 3-2. Supervisorial District 1

City	Countywide Statistical Area
Azusa	Arcadia
Baldwin Park	Angeles National Forest
Bell	Avocado Heights
Bell Gardens	Azusa
Claremont	Bandini Islands
Commerce	Bassett
Cudahy	Charter Oak

Table 3-2. Supervisorial District 1

City	Countywide Statistical Area
El Monte	Claremont
Huntington Park	Covina
Industry	Covina (Charter Oak)
Irwindale	Duarte
La Puente	East Los Angeles
Maywood	El Monte
Montebello	Florence – Firestone
Monterey Park	Glendora
Pico Rivera	Hacienda Heights
Pomona	La Verne
Rosemead	Lynwood
South El Monte	North Whittier
South Gate	Padua Hills
Vernon	Pellissier Village
Walnut	Pomona
West Covina	Rowland Heights
	San Jose Hills
	South El Monte
	South San Gabriel
	Sunrise Village
	Valinda
	Walnut
	Walnut Park
	West Puente Valley
	West Whittier/Los Nietos
	Whittier
	Whittier Narrows

Table 3-3. Supervisorial District 2

City	Countywide Statistical Area
Carson	Athens Village
Compton	Athens-Westmont
Culver City	Del Aire
Gardena	Del Rey
Hawthorne	East Rancho Dominguez
Inglewood	El Camino Village
Lawndale	Florence – Firestone
Los Angeles (portion)	Hawthorne
Lynwood	Ladera Heights
	Lennox
	Lynwood
	Marina del Rey
	Rancho Dominguez
	Rosewood
	Rosewood/East Gardena
	Rosewood/West Rancho Dominguez
	View Park/Windsor Hills
	Walnut Park
	West Carson
	West Rancho Dominguez
	Willowbrook
	Wiseburn

Table 3-4. Supervisorial District 3

City	Countywide Statistical Area
Agoura Hills	Angeles National Forest
Beverly Hills	Franklin Canyon
Calabasas	Marina del Rey
Hidden Hills	Miracle Mile
Malibu	Kagel/Lopez Canyons
San Fernando	Santa Monica Mountains
Santa Monica	Universal City
West Hollywood	West LA
Westlake Village	Westhills

Table 3-5. Supervisorial District 4

City	Countywide Statistical Area
Artesia	Cerritos
Avalon	Del Aire
Bellflower	East La Mirada
Cerritos	East Rancho Dominguez
Diamond Bar	East Whittier
Downey	El Camino Village
El Segundo	Hacienda Heights
Hawaiian Gardens	Harbor Gateway
Hermosa Beach	La Habra Heights
La Habra Heights	La Rambla
La Mirada	Lakewood
Lakewood	Lennox
Lomita	Long Beach
Long Beach	Lynwood
Los Angeles (portion)	Marina del Rey
Manhattan Beach	Palos Verdes Peninsula
Norwalk	Rancho Dominguez
Palos Verdes Estates	Rowland Heights
Paramount	San Clemente Island
Rancho Palos Verdes	Santa Catalina Island

Table 3-5. Supervisorial District 4

City	Countywide Statistical Area
Redondo Beach	South Whittier
Rolling Hills	Sunrise Village
Rolling Hills Estates	West Carson
Santa Fe Springs	West Whittier / Los Nietos
Signal Hill	Westfield/Academy Hills
Torrance	Whittier
Whittier	

Table 3-6. Supervisorial District 5

City	Countywide Statistical Area
Alhambra	Acton
Arcadia	Agua Dulce
Bradbury	Altadena
Covina	Anaverde
Duarte	Angeles National Forest
Glendale	Arcadia
Glendora	Azusa
La Canada – Flintridge	Bouquet Canyon
La Verne	Bradbury
Lancaster	Canyon Country
Monrovia	Castaic
Palmdale	Claremont
Pasadena	Covina
San Dimas	Covina (Charter Oak)
San Gabriel	Del Sur
San Marino	Desert View Highlands
Santa Clarita	Duarte
Sierra Madre	East Covina
South Pasadena	East Lancaster
Temple City	East Pasadena
Los Angeles City	Elizabeth Lake
Canoga Park (portion)	Glendora

Table 3-6. Supervisorial District 5

City	Countywide Statistical Area
Chatsworth (portion)	Hi Vista
Granada Hills (portion)	Kagel / Lopez Canyons
Hansen Dam (portion)	La Crescenta-Montrose
Lake View Terrace (portion)	La Verne
Mission Hills (portion)	Lake Hughes
Northridge (portion)	Lake Los Angeles
Olive View Hospital (Sylmar)	Lake Manor
Porter Ranch	Leona Valley
Shadow Hills	Littlerock
Sun Valley (portion)	Littlerock/Juniper Hills
Sunland	Littlerock/Pearblossom
Sylmar (portion)	Llano
Tujunga	Monrovia
West Hills (portion)	Newhall
	North Lancaster
	Northeast San Gabriel
	Palmdale
	Pearblossom/Llano
	Placerita Canyon
	Pomona
	Quartz Hill
	Roosevelt
	San Francisquito Canyon/Bouquet Canyon
	San Pasqual
	Sand Canyon
	Saugus
	Saugus/Canyon Country
	South Antelope Valley
	South Edwards
	Southeast Antelope Valley
	Stevenson Ranch
	Sun Village
	Twin Lakes/Oat Mountain

Table 3-6. Supervisorial District 5

City	Countywide Statistical Area
	Val Verde
	Valencia
	West Antelope Valley
	West Chatsworth
	White Fence Farms

Kern County

San Bernardino
County

Ventura
County

Orange
County

Pacific Ocean

Los Angeles



0 2.5 5 10 15 Miles

Legend

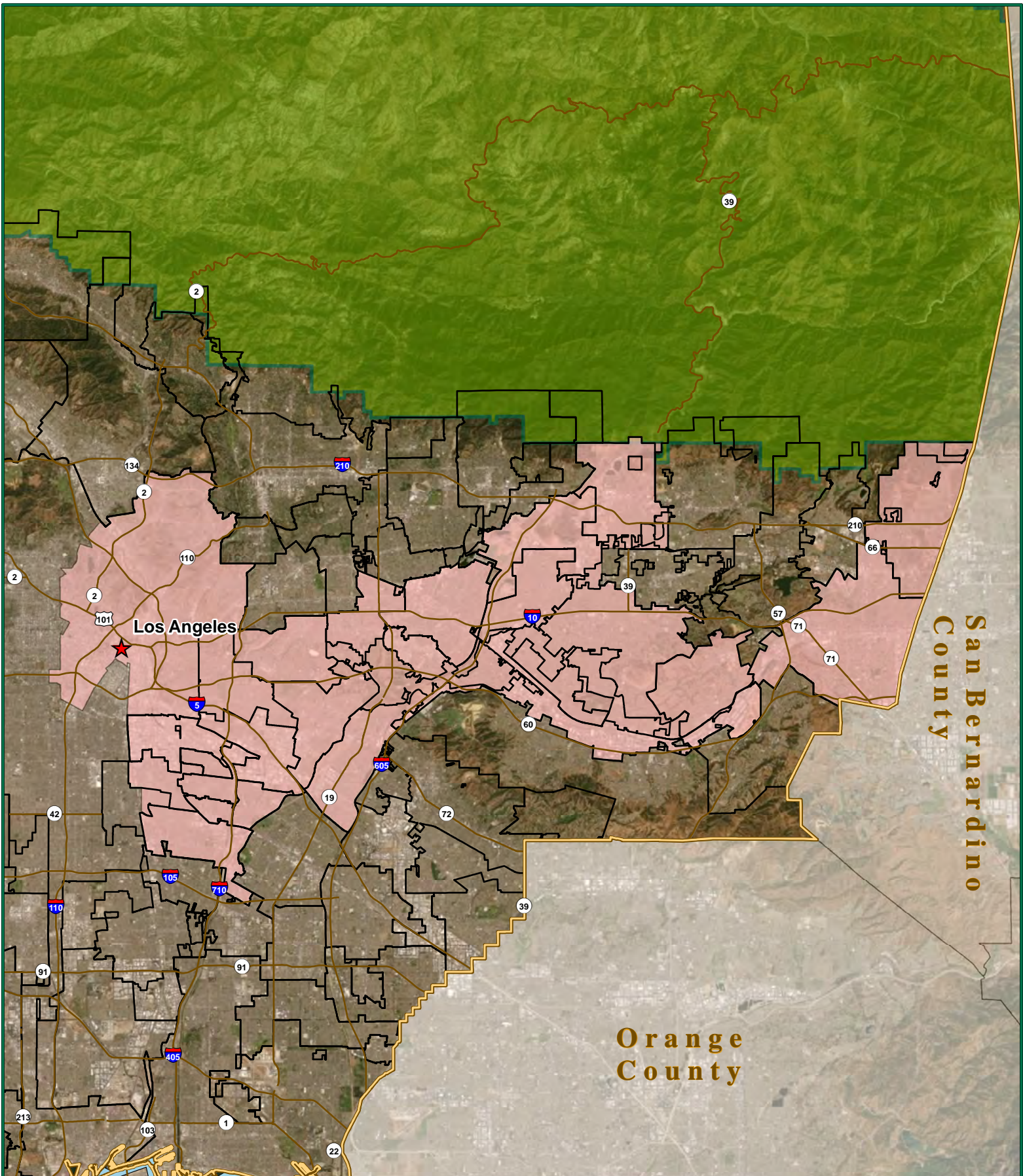
- Unincorporated County Boundary
- National Forest

Source
<https://egis3.lacounty.gov>, 2019




Los Angeles County
Figure 3-1

2020 Los Angeles County
All-Hazards Mitigation Plan





Legend

-  City Boundary
-  Supervisorial District 1 Boundary
-  National Forest

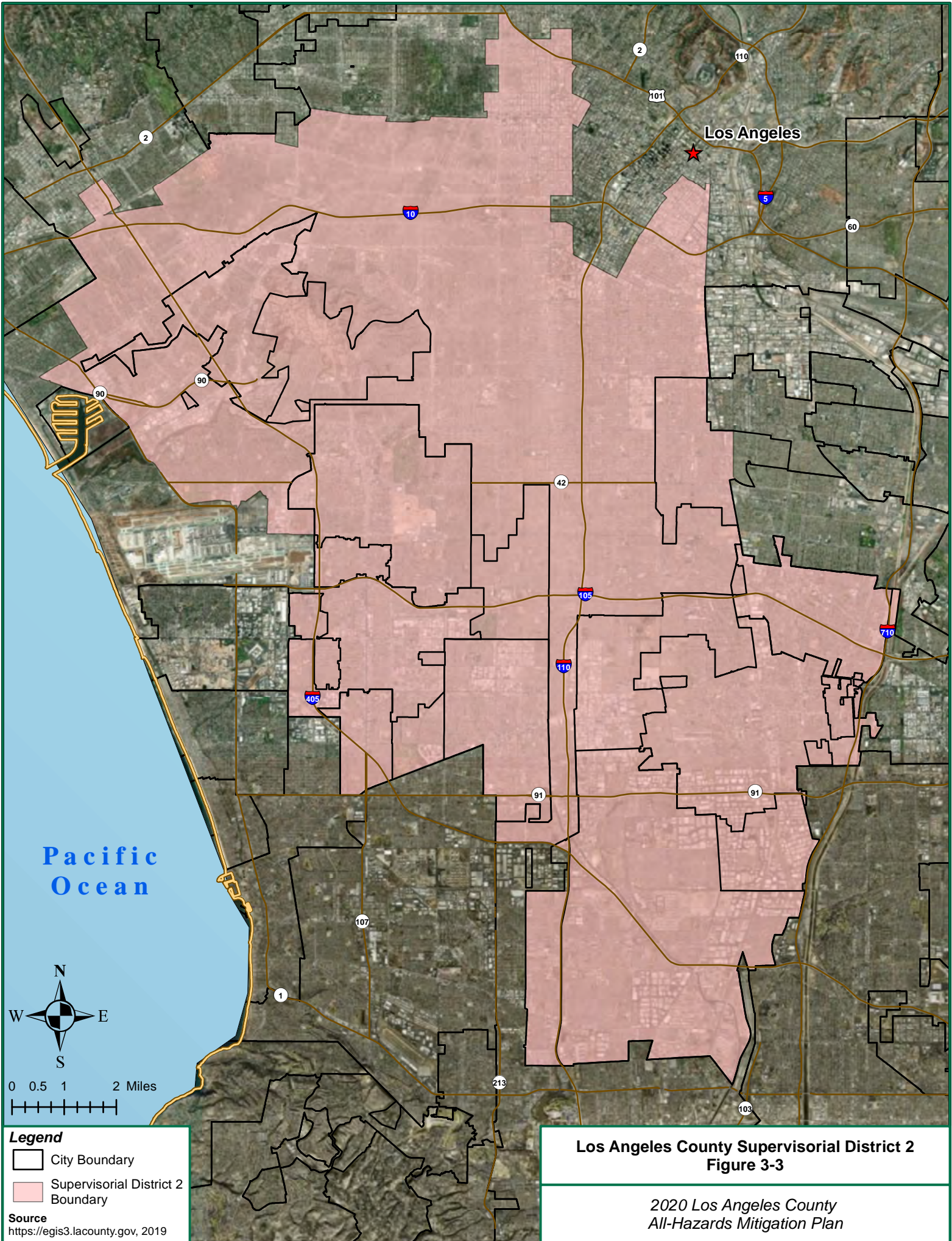
Source
<https://egis3.lacounty.gov>, 2019



0 2.5 5 Miles

Los Angeles County Supervisorial District 1
Figure 3-2

2020 Los Angeles County All-Hazards Mitigation Plan



Los Angeles

Pacific Ocean

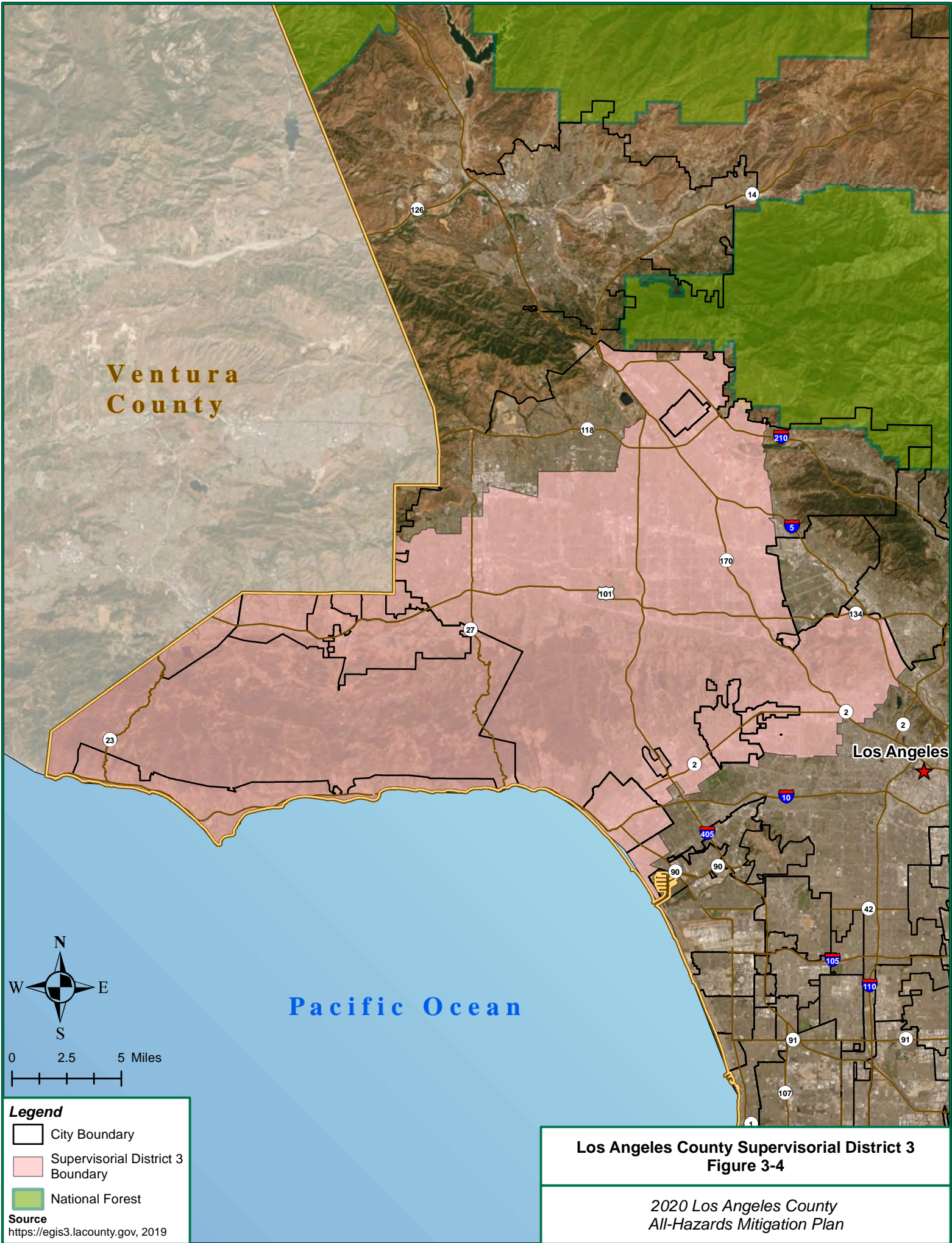


Legend
City Boundary
Supervisorial District 2 Boundary

Source
<https://egis3.lacounty.gov>, 2019

**Los Angeles County Supervisorial District 2
Figure 3-3**

*2020 Los Angeles County
All-Hazards Mitigation Plan*



Ventura
County

Pacific Ocean

Los Angeles



Legend

- City Boundary
- Supervisorial District 3 Boundary
- National Forest

Source
<https://egis3.lacounty.gov>, 2019

Los Angeles County Supervisorial District 3
Figure 3-4

*2020 Los Angeles County
All-Hazards Mitigation Plan*



Los Angeles

San Bernardino County

Orange County

Pacific Ocean



0 5 10 Miles

Legend
City Boundary
Supervisorial District 4 Boundary

Source
<https://egis3.lacounty.gov>, 2019

**Los Angeles County Supervisorial District 4
Figure 3-5**

*2020 Los Angeles County
All-Hazards Mitigation Plan*

3.2 POPULATION AND DEVELOPMENT TRENDS

Since the drafting of the 2014 AHMP, United States (U.S.) Census Bureau Intercensal Estimates from July 1, 2015 to July 1, 2018, show the number of people residing in Los Angeles County only grew from 10,097,037 to 10,105,518. While the County experienced population growth of 0.50 percent in 2015 and 0.23 percent in 2016, the County population decreased by 0.02 percent in 2017 and 0.13 percent in 2018.

The California Department of Finance noted that the decline in population can be linked in part to a decline in birth rate. Researchers at the University of Southern California Lusk Center for Real Estate also suggest that one of the biggest reasons behind Los Angeles County's growth rate slip is due the lack of housing. Despite the City of Los Angeles adding between 15,000 and 17,000 units of housing each year from 2014 to 2018, housing has become prohibitively unaffordable, which has led many young Los Angeles County residents to move out of state or put down roots in nearby Inland Empire counties, where thousands of new jobs in distribution hubs and fulfillment centers have fueled more affordable housing development.

For the 2020 AHMP, population and residential buildings are not included in the risk assessment. This information may be included in future plan updates as 2020 U.S. Census data become available.

3.3 VULNERABLE POPULATIONS

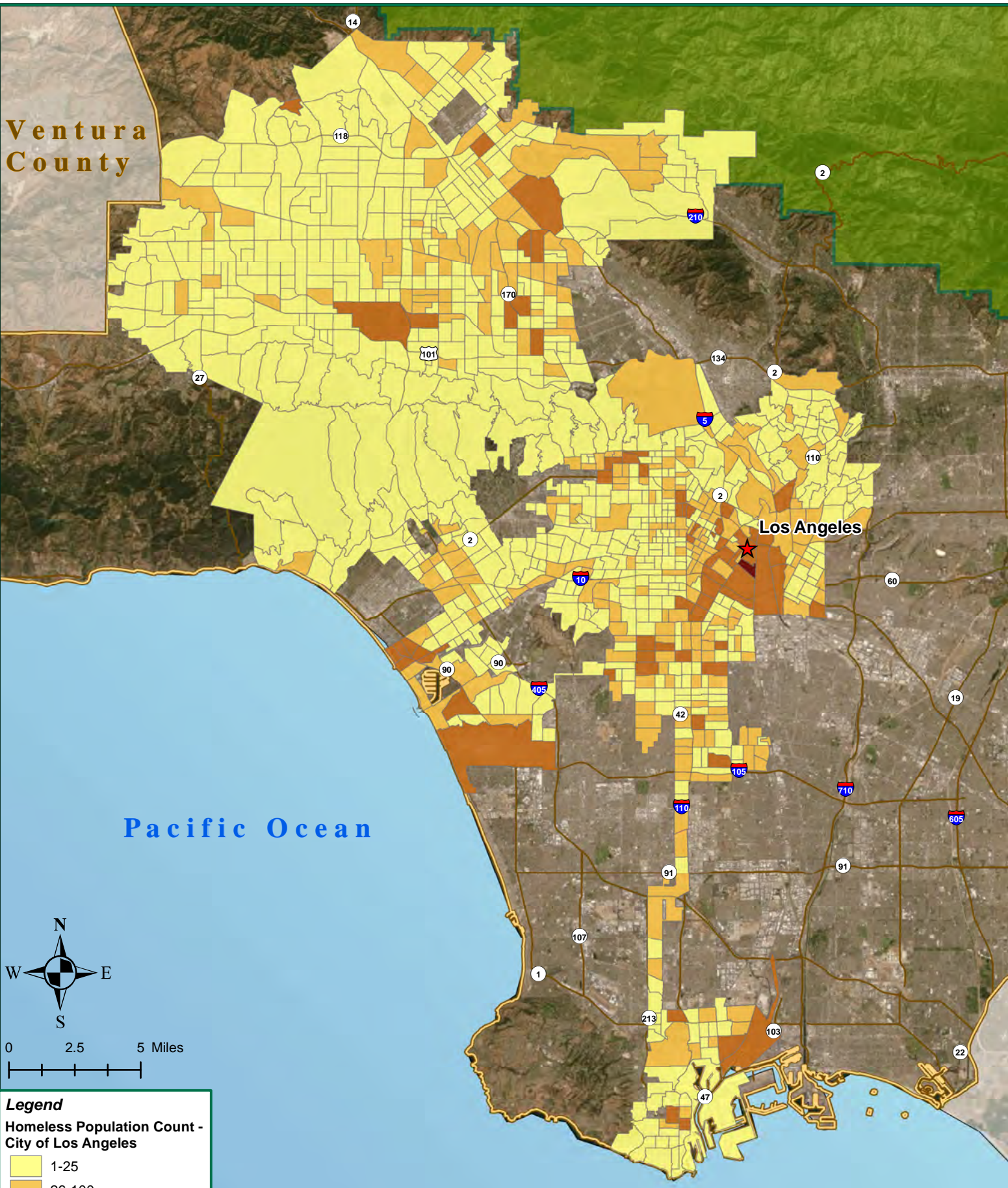
As noted by the Center for Disease Control, "Everyone must remain safe in an emergency. But for some, it's more difficult." Vulnerable or at-risk groups include people that may have difficulty communicating or accessing medical care, need help maintaining independence/accessing transportation, and/or require supervision.

For the 2020 AHMP, vulnerable population groups addressed in the risk assessment include people experiencing homelessness. People experiencing homelessness have become a regional crisis as the number of this vulnerable population group has risen to nearly 60,000 in Los Angeles County alone. **Table 3-7** and **Figures 3-7 and 3-8** show the total point-in-time number of people experiencing homelessness in the City of Los Angeles and Unincorporated Los Angeles County, as captured for the 2019 Greater Los Angeles Homeless Count.

There are several other vulnerable groups at-risk to hazards in Los Angeles County; future updates of the AHMP will expand vulnerable population categories as the 2020 U.S. Census socioeconomic status, household composition and disability, minority status and language, housing, and transportation data becomes available.

Table 3-7. People Experiencing Homelessness

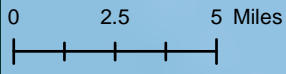
Area	Total # of People Experiencing Homelessness (Sheltered and Unsheltered)
City of Los Angeles	32,931
Unincorporated Los Angeles County	5,881



Ventura
County

Pacific Ocean

Los Angeles



- Legend**
- Homeless Population Count - City of Los Angeles**
- 1-25
 - 26-100
 - 100-1000
 - 1000+
 - National Forest

Source
Los Angeles County
Homeless Services Authority, 2019

**People Experiencing Homelessness
in the City of Los Angeles
Figure 3-7**

*2020 Los Angeles County
All-Hazards Mitigation Plan*

Kern County

San Bernardino
County

Ventura
County

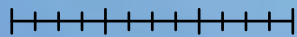
Orange
County

Los Angeles

Pacific Ocean



0 2.5 5 10 15 Miles



Legend

Homeless Population Count -
Unincorporated Los Angeles County

- 1-25
- 26-100
- 100+

Source
Los Angeles County
Homeless Services Authority, 2019

People Experiencing Homelessness in
Unincorporated Los Angeles County
Figure 3-8

2020 Los Angeles County
All-Hazards Mitigation Plan



3.4 CRITICAL FACILITIES

A critical facility provides services and functions essential to a community, especially during and after a disaster. Common types of critical facilities include: fire stations, police stations, hospitals, schools, water and waste water systems, and utilities. Critical facilities may also include places that can be used for sheltering or staging purposes, such as community centers and libraries. Critical facilities may also include large public gathering spots.

Los Angeles County does not currently maintain a centralized critical facilities database. For the 2020 AHMP, 915 major Los Angeles County-owned and Los Angeles County-related critical facilities were collected from various Los Angeles County department and agencies and also from the U.S. Department of Homeland Security's (DHS) Homeland Infrastructure-Foundation-Level Data site. Critical facility names are identify by department and include: Los Angeles County Department of Animal Care & Control (hereinafter referred to as Los Angeles County Animal Care & Control); Los Angeles County Fire Department; Los Angeles County Department of Health Services (hereinafter referred to as Los Angeles County Health Services); Los Angeles County Library; Los Angeles County Museum of Modern Art (LACMA); Natural History Museum of Los Angeles County (NHM); Los Angeles County Office of Education; Los Angeles County - Other (Offices); Los Angeles County Department of Parks & Recreation (hereinafter referred to as Los Angeles County Parks & Recreation); Los Angeles County Department of Public Health (hereinafter referred to as Los Angeles County Public Health); Los Angeles County Public Works; and the Los Angeles County Sheriff's Department. The department names and addresses were geocoded to a location and the resulting geographic features were used for the risk assessment. The results of this process are shown in **Table 3-8** and **Figure 3-9** through **Figure 3-19**. Facility-specific information is provided in **Appendix B**. Some departments and agencies have multiple facilities at the same location; hence there are duplications of facility sites.

Los Angeles County hopes to implement a coordinated data collection and database system for critical facilities; as such, future updates to this plan will likely include an expanded critical facilities list.

Table 3-8. Los Angeles County-Owned and County-Related Critical Facilities

Department / Agency	# of Facilities
Los Angeles County Animal Care & Control	7
Los Angeles County Fire Department	337*
Los Angeles County Health Services	29
Los Angeles County Library	85
LACMA & NHM	4
Los Angeles County Office of Education	37
Los Angeles County - Other (Offices)	24
Los Angeles County Parks & Recreation	117
Los Angeles County Public Health	14
Los Angeles County Public Works	230
Los Angeles County Sheriff's Department	31

Note: Los Angeles County Fire Department fire stations include those located within 59 cities and all of Unincorporated Los Angeles County. Fire stations 93, 100, 108, 128, 136, 143, and 150 as well as the Los Angeles County Fire Department camps and lifeguard stations were not included in this version of the plan. They will be added to subsequent versions.

LACMA = Los Angeles County Museum of Art, NHM = National History Museum

Kern County

San Bernardino
County

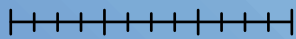
Ventura
County

Orange
County



Pacific Ocean



0 2.5 5 10 15 Miles



Legend

-  Fire Station
-  National Forest

Source
Homeland Infrastructure
Foundation-Level Data, 2019

Los Angeles County Fire Department
Figure 3-10

2020 Los Angeles County
All-Hazards Mitigation Plan



Kern County

San Bernardino
County

Ventura
County

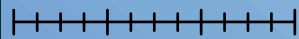
Orange
County

Pacific Ocean



Los Angeles



0 2.5 5 10 15 Miles



Legend

-  Hospital and Clinic
-  National Forest

Source
Los Angeles County Department
of Human Services, 2019

Los Angeles County Health Services
Figure 3-11

2020 Los Angeles County
All-Hazards Mitigation Plan



Kern County

San Bernardino
County

Ventura
County

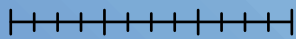
Orange
County

Pacific Ocean



Los Angeles



0 2.5 5 10 15 Miles



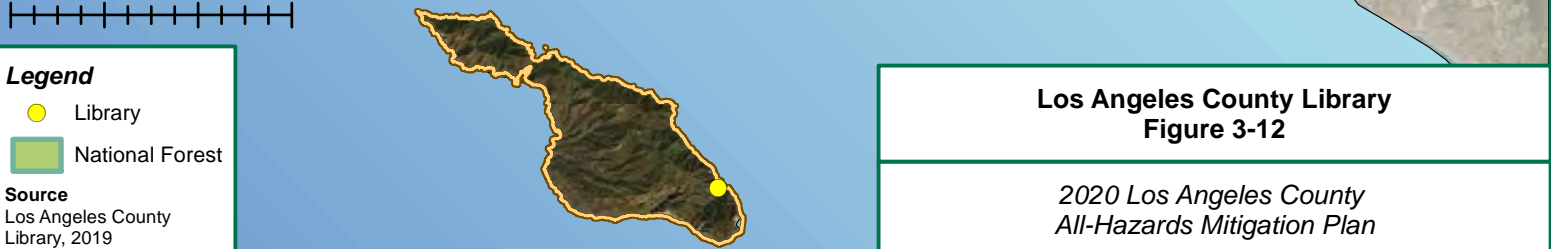
Legend

-  Library
-  National Forest

Source
Los Angeles County
Library, 2019

Los Angeles County Library
Figure 3-12

2020 Los Angeles County
All-Hazards Mitigation Plan



Kern County

San Bernardino
County

Ventura
County

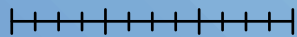
Orange
County

Los Angeles

Pacific Ocean



0 2.5 5 10 15 Miles



Legend

- Museum
- National Forest

*LACMA = Los Angeles County Museum of Art,
NHM = National History Museum

Source
Los Angeles County Museum of Art
and Museum of Natural History, 2019



LACMA & NHM*
Figure 3-13

2020 Los Angeles County
All-Hazards Mitigation Plan

Kern County

San Bernardino County

Ventura County

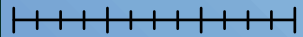
Orange County

Los Angeles



Pacific Ocean



0 2.5 5 10 15 Miles



Legend

-  School
-  National Forest

Source
Los Angeles County
Office of Education, 2019

Los Angeles County Office of Education
Figure 3-14

2020 Los Angeles County
All-Hazards Mitigation Plan



Kern County

San Bernardino
County

Ventura
County

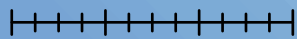
Orange
County

Pacific Ocean

Los Angeles



0 2.5 5 10 15 Miles



Legend

- Office
- National Forest

Source
lacounty.gov, 2019

Los Angeles County
Other (Offices)
Figure 3-15

2020 Los Angeles County
All-Hazards Mitigation Plan



Kern County

San Bernardino
County

Ventura
County

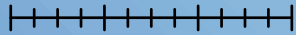
Orange
County

Los Angeles

Pacific Ocean



0 2.5 5 10 15 Miles



Legend

- Amphitheatre
- Auditorium
- Community Center
- Gymnasium
- Indoor Theater
- Senior Center
- Teen Center
- National Forest

Source
Los Angeles County
Parks and Recreation, 2019

Los Angeles County Parks & Recreation
Figure 3-16

2020 Los Angeles County
All-Hazards Mitigation Plan



Kern County

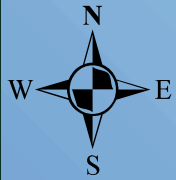
San Bernardino
County

Ventura
County

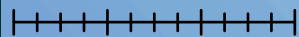
Orange
County

Pacific Ocean



Los Angeles



0 2.5 5 10 15 Miles



Legend

-  Clinic
-  National Forest

Source
Los Angeles County
Department of Public Health, 2019



Los Angeles County Public Health
Figure 3-17

2020 Los Angeles County
All-Hazards Mitigation Plan

Kern County

San Bernardino County

Ventura County

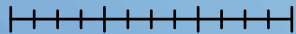
Orange County

Los Angeles

Pacific Ocean



0 2.5 5 10 15 Miles



Legend

- Communications
- Drinking Well water
- Maintenance/Operations
- Pump Station
- Stormwater Pumping
- Treatment Plant
- Yard
- Water Tank/Water Tank pump station
- National Forest

Source
Los Angeles County
Department of Public Works, 2019

Los Angeles County Public Works
Figure 3-18

2020 Los Angeles County
All-Hazards Mitigation Plan



Kern County

San Bernardino
County

Ventura
County

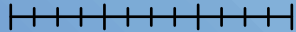
Orange
County

Los Angeles




Pacific Ocean



0 2.5 5 10 15 Miles



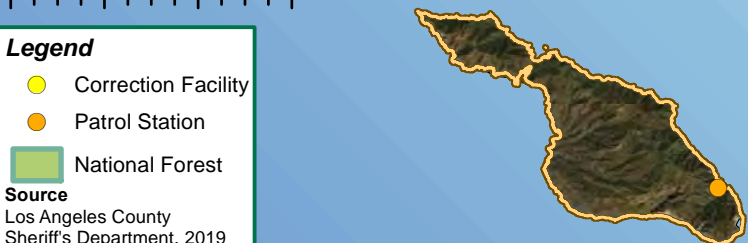
Legend

-  Correction Facility
-  Patrol Station
-  National Forest

Source
Los Angeles County
Sheriff's Department, 2019

Los Angeles County Sheriff's Department
Figure 3-19

2020 Los Angeles County
All-Hazards Mitigation Plan



4 HAZARD IDENTIFICATION AND RISK ASSESSMENT

Section 4—Hazard Identification and Risk Assessment addresses Element B of the Local Mitigation Plan Regulation Checklist.

Regulation Checklist – 44 CFR 201.6 Local Mitigation Plans
Element B: Hazard Identification and Risk Assessment
B1. Does the Plan include a description of the type, location, and extent of all natural hazards that can affect each jurisdiction(s)? (Requirement § 201.6(c)(2)(ii))
B2. Does the Plan include information on previous occurrences of hazard events and on the probability of future hazard events for each jurisdiction? (Requirement § 201.6(c)(2)(i))
B3. Is there a description of each identified hazard’s impact on the community as well as an overall summary of the community’s vulnerability for each jurisdiction? (Requirement §201.6(c)(2)(ii))
B4. Does the Plan address NFIP insured structures within the jurisdiction that have been repetitively damaged by floods? (Requirement §201.6(c)(2)(ii))

For the 2020 AHMP, the AHMP Project Manager and consultant revisited the hazards addressed in the 2014 AHMP. It was determined that the primary focus of the 2020 AHMP should be natural hazards and secondary hazards, as a result of a natural hazard. In addition, it was decided that climate change should be included in the plan, as increasing surface temperatures will likely result in more droughts and subsequently the risk of wildfires. Therefore, climate change, dam failure, drought, earthquake, flood, landslide, tsunami, and wildfire are profiled in the 2020 AHMP.

Hazard identification consists of describing the nature of the hazard, disaster history, location, extent/severity, and probability of future events. Hazard identification profiles have been developed for each of the eight hazards addressed in **Section 4.1** through **Section 4.8**. Additionally, impact (i.e., risk assessment) tables have been created for each hazard. Quantitative impact tables were prepared using GIS analysis for climate change (sea level rise), dam failure, earthquake, flood, landslide, tsunami, and wildfire, while a qualitative impact table was prepared for drought. Impacts considered include: land area, vulnerable populations and critical facilities. Overall summary descriptions have been developed as well. NFIP insured structures are discussed in **Table 4-23**. **Appendix C** contains hazard impact tables.

According to the *Comprehensive Preparedness Guide 201 (CPG 201): Threat and Hazard Identification and Risk Assessment Guide—Second Edition* (CPG 201) drought, earthquake, flood, landslide, tsunami, and wildfire are classified natural hazards, while dam failure is classified as a technological hazard (but is often a secondary hazard of other natural hazards). CPG 201 does not classify climate change. As such, the hazards profiled for this AHMP are discussed in alphabetical order and not by CPG 201 classification. **The order does not signify level of risk.**

4.1 CLIMATE CHANGE

Table 4-1. Climate Change Identification Profile

Profile	Description
Nature	<p>Climate change is defined as the average statistics of weather, which includes temperature, precipitation, and seasonal patterns in a particular region. Climate change refers to the long-term and irrevocable shift in these weather-related patterns, either regionally or globally. The Earth and its natural ecosystem are very closely tied to the climate and any permanent climate change will lead to an imbalance in the existing ecosystem, impacting the way people live, the food they grow, their health, the wildlife, the availability of water, and much more. Research indicates that much of this warming is due to human activities, primarily burning fossil fuels and clearing forests, that release carbon dioxide (CO₂) and other gases into the atmosphere, trapping in heat that would otherwise escape into space. Once in the atmosphere, these heat-trapping emissions remain there for many years (for example, CO₂ lasts about 100 years. If left unchecked, by the end of the century, CO₂ concentrations could reach levels three times higher than pre-industrial times.</p> <p>According to most climatologists, the planet is starting to experience shifts in climate patterns and increased frequency of extreme weather events at both the global and local levels. Over the next century, increasing atmospheric greenhouse gas concentrations are expected to cause a variety of changes to local climate conditions, including sea level rise and storm surge in coastal areas, reduced mountain snow pack, increased riverine flooding, and more frequent, higher temperatures (leading to extreme heat events and wildfires), particularly inland, decreasing air quality, and extended periods of drought.</p> <p>These effects of climate change are expected to negatively impact water and electricity demand and supplies in Los Angeles County. Decreasing air quality and extreme heat days will degrade public health, as well as and increase wildfire risk. And low-lying water front areas may flood or be underwater from sea level rise.</p>
Location	<p>According to the National Climate Assessment, the entire Pacific coastal region, including Los Angeles County, has been affected by climate change.</p>
History	<p>The history of the scientific discovery of climate change began in the early 19th century, when ice ages and other natural changes in paleoclimate were first suspected and the natural greenhouse effect first identified. In the late 19th century, scientists first argued that human emissions of greenhouse gases could change the climate. Many other theories of climate change were advanced, involving forces from volcanism to solar variation. In the 1960s, the warming effect of carbon dioxide gas became increasingly convincing, although some scientists also pointed out that human activities, in the form of atmospheric aerosols (e.g., "pollution"), could have cooling effects as well. During the 1970s, scientific opinion increasingly favored the warming viewpoint. By the 1990s, as a result of improving fidelity of computer models and observational work confirming the Milankovitch theory of the ice ages, a consensus position formed: greenhouse gases were deeply involved in most climate changes, and human emissions were bringing serious global warming.</p> <p>Since the 1990s, scientific research on climate change has included multiple disciplines and has expanded, significantly increasing our understanding of causal relations, links with historic data, and ability to numerically model climate change. The most recent work has been summarized in the Assessment Reports by the Intergovernmental Panel on Climate Change. Climate change is a significant and lasting change in the statistical distribution of weather patterns over periods ranging from decades to millions of years. It may be a change in average weather conditions, or in the distribution of weather around the average conditions (i.e., more or fewer extreme weather events). Climate change is caused by factors that include oceanic processes (such as oceanic circulation), biotic processes, variations in solar radiation received by Earth, plate tectonics and</p>

Table 4-1. Climate Change Identification Profile

Profile	Description
	volcanic eruptions, and human-induced alterations of the natural world; these latter effects are currently causing global warming, and "climate change" is often used to describe human-specific impacts.
Extent / Severity	<p>Over the next century, weather patterns that are considered extreme today are expected to become the norm. The average summer temperature will rise, and in inland areas 100-plus degree Fahrenheit (°F) days will occur more frequently. A temperature change map (Figure 4-1) produced by the California Nevada Climate Applications Program predict that the average temperature in the region is expected to rise between 2.5°F and 8°F. Drier conditions will also make wildfires more frequent and intense.</p> <p>The National Oceanic and Atmospheric Administration has produced a sea level rise view that shows the impacts of predicted sea level rise. As shown in Figure 4-2, a sea level rise of just 3 feet above mean higher high tide (approximate year 2050 – 2060) will result in coastal flooding of 2.25 square miles of Los Angeles County and 0.03 square miles of Unincorporated Los Angeles County, while a sea level rise of 6 feet above mean higher high tide (approximate year 2100) will result in coastal flooding of 6.13 square miles of Los Angeles County and 0.15 square miles of Unincorporated Los Angeles County.</p>
Recurrence Probability	According to the National Aeronautics and Space Administration (NASA), “the current warming trend is of particular significance because most of it is extremely likely (greater than 95 percent probability) to be the result of human activity since the mid-20 th century and proceeding at a rate that is unprecedented over decades to millennia.” NASA also states that, “scientists have high confidence that global temperatures will continue to rise for decades to come, largely due to greenhouse gases produced by human activities.”

Table 4-2. Climate Change Impact on Land Area

Area	3 Ft. Sea Level Rise		6 Ft. Sea Level Rise	
	# of Sq. Miles	% of Sq. Miles	# of Sq. Miles	% of Sq. Miles
Los Angeles County	2.25	0.05	6.13	0.13
Unincorporated Los Angeles County	0.03	0.00	0.15	0.00
Supervisory District 1	0.00	0.00	0.00	0.00
Supervisory District 2	0.03	0.02	0.07	0.04
Supervisory District 3	0.14	0.03	0.34	0.08
Supervisory District 4	1.98	0.45	5.58	1.27
Supervisory District 5	0.00	0.00	0.00	0.00

Table 4-3. Climate Change Impact on Vulnerable Populations – People Experiencing Homelessness

Area	3 Ft. Sea Level Rise		6 Ft. Sea Level Rise	
	# of Homeless	% of Homeless	# of Homeless	% of Homeless
City of Los Angeles	51	0.15	126	0.38
Unincorporated Los Angeles County	0	0.00	2	0.04

Table 4-4. Climate Change Impact on Los Angeles County Critical Facilities

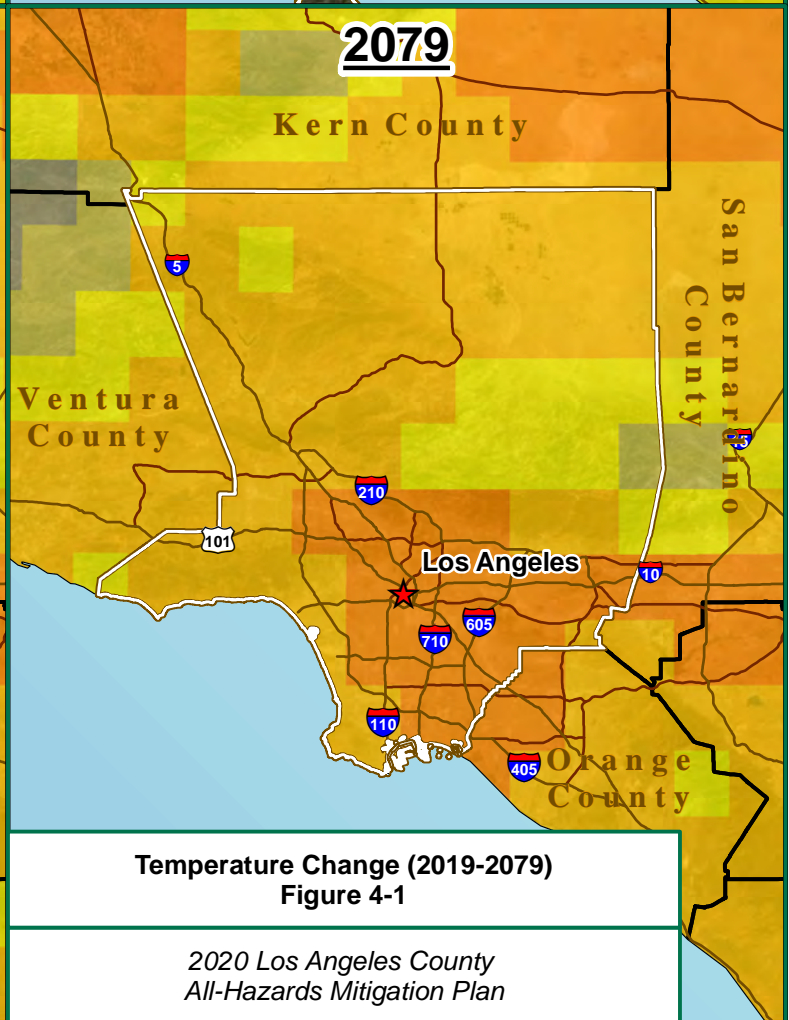
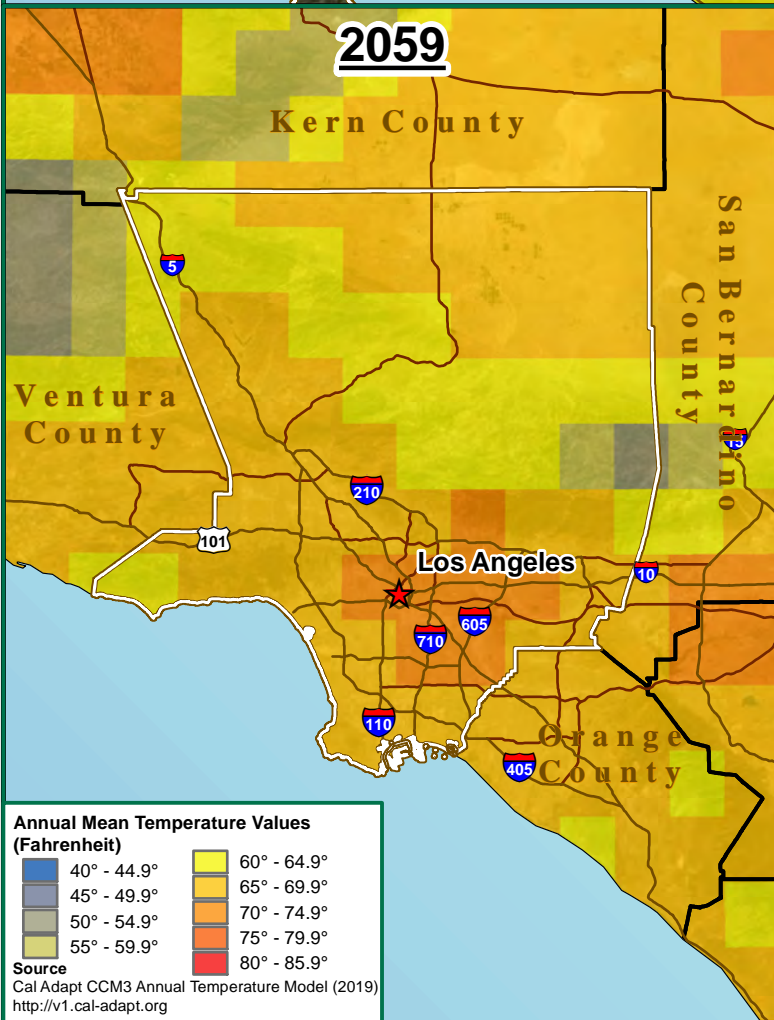
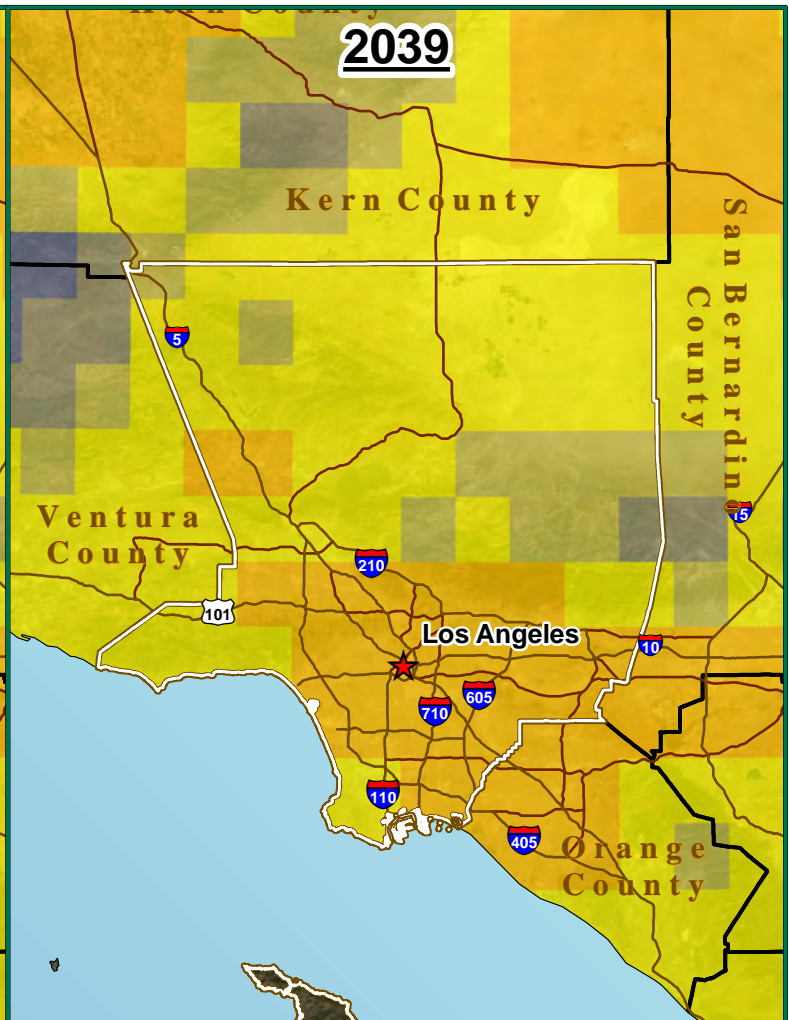
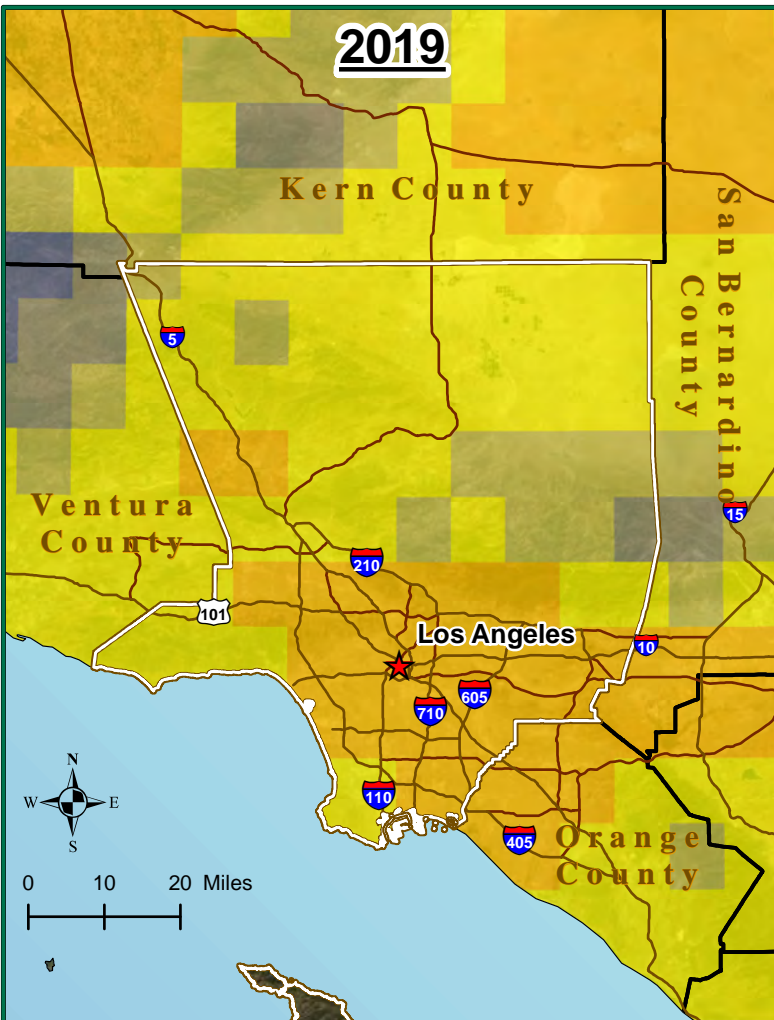
Department/ Agency	3 Ft. Sea Level Rise		6 Ft. Sea Level Rise	
	# of Facilities	% of Facilities	# of Facilities	% of Facilities
Los Angeles County Animal Care & Control	0	0.00	0	0.00
Los Angeles County Fire Department	1	0.00	5	1.4
Los Angeles County Health Services	0	0.00	0	0.00
Los Angeles County Library	0	0.00	0	0.00
LACMA & NHM	0	0.00	0	0.00
Los Angeles County Office of Education	0	0.00	0	0.00
Los Angeles County - Other (Offices)	0	0.00	0	0.00
Los Angeles County Parks & Recreation	0	0.00	0	0.00
Los Angeles County Public Health	0	0.00	0	0.00
Los Angeles County Public Works	3	1.30	6	2.61
Los Angeles County Sheriff's Department	1	3.23	0	0.00

LACMA = Los Angeles County Museum of Art

NHM = Natural History Museum

Table 4-5. Overall Summary of Vulnerability to Climate Change

Climate Change	
Summary	<p>Climate change will affect every person and every area of Los Angeles County. As noted above, the number of extreme heat days will rise, and inland County areas will experience days with temperatures in excess of 100°F more frequently. Extreme heat can trigger a variety of heat stress conditions, such as heat stroke. Higher temperatures can also contribute to the build-up of harmful pollutants and cause respiratory issues. Drier, hotter conditions will also make wildfires more frequent and intense, particularly in the High and Very High Fire Hazard Severity Zones (FHSZ). Wildfires can: burn homes, businesses, and critical facilities; interrupt transportation and utilities; and cause death to people and animals.</p> <p>In addition, mega storms that are linked to climate change will cause severe flooding in cities and form lakes in the Central Valley and Mojave Desert. Along the coast, deadly and destructive storm surges will push farther inland than they once did, which means more frequent nuisance flooding.</p> <p>Los Angeles County is addressing climate change through the Our County: Los Angeles County Sustainability Plan (2019). The plan identifies lead County entities and partners who will work together to move toward a zero-carbon energy system that quickly and drastically reduces greenhouse gas emissions by eliminating fossil fuels.</p>

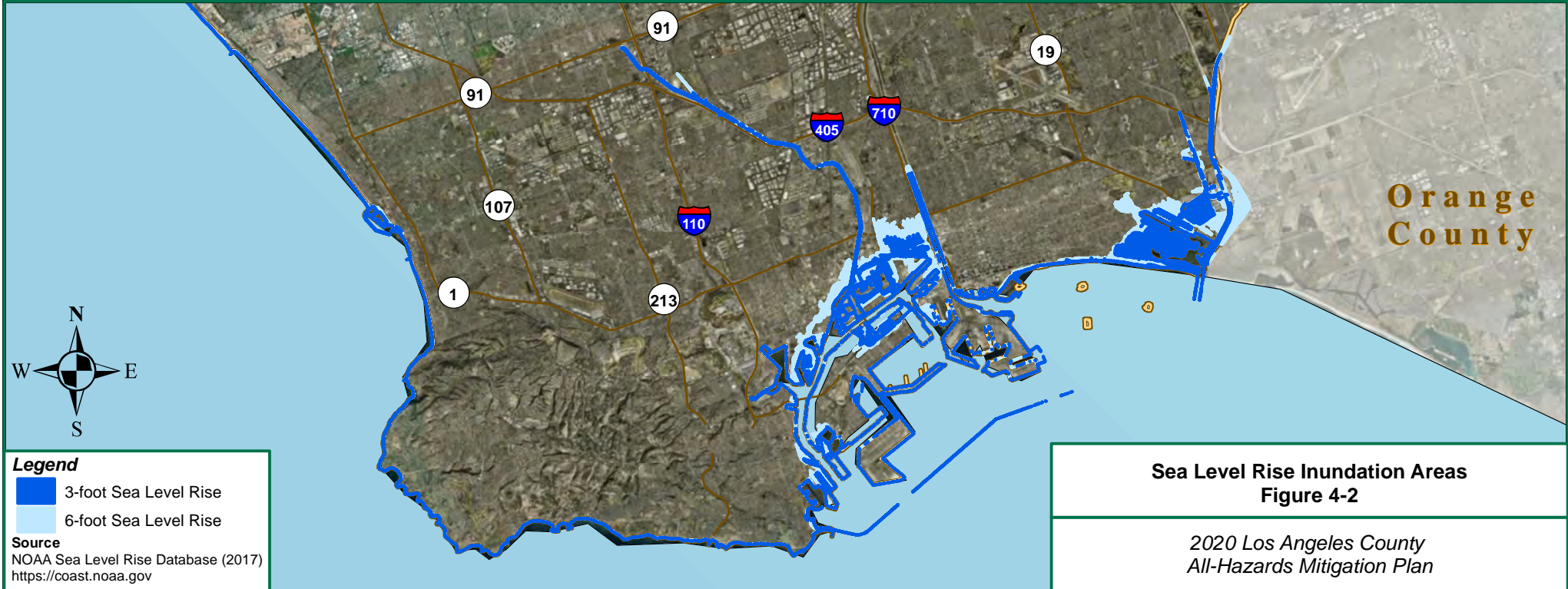


Annual Mean Temperature Values (Fahrenheit)

	40° - 44.9°		60° - 64.9°
	45° - 49.9°		65° - 69.9°
	50° - 54.9°		70° - 74.9°
	55° - 59.9°		75° - 79.9°
			80° - 85.9°

Source
 Cal Adapt CCM3 Annual Temperature Model (2019)
<http://v1.cal-adapt.org>

Temperature Change (2019-2079)
Figure 4-1



Legend

- 3-foot Sea Level Rise
- 6-foot Sea Level Rise

Source
NOAA Sea Level Rise Database (2017)
<https://coast.noaa.gov>

**Sea Level Rise Inundation Areas
Figure 4-2**

*2020 Los Angeles County
All-Hazards Mitigation Plan*

4.2 DAM FAILURE

Table 4-6. Dam Failure Identification Profile

Profile	Description
Nature	<p>Dam failure is the structural collapse of a dam that releases the water stored in the reservoir behind the dam. A dam failure is usually the result of the age of the structure, inadequate spillway capacity used in construction, or structural damage caused by an earthquake or flood. When a dam fails, a large quantity of water is suddenly released with a great potential to cause human casualties, economic loss, and environmental damage. This type of disaster is especially dangerous because it can occur suddenly, providing little warning and evacuation time for the people living downstream. The flows resulting from dam failure generally are much larger than the capacity of the downstream channels and therefore lead to extensive flooding. Flood damage occurs as a result of the momentum of the flood caused by the sediment-laden water flooding over the channel banks and impact debris carried by the flow.</p>
Location	<p>According to the California Department of Water Resource’s Division of Safety of Dams (DSOD), there are 90 dams under State jurisdiction in Los Angeles County. A dam breach inundation map shows flooding that could result from a hypothetical failure of a dam or its critical appurtenant structure. In 2017, the California Legislature passed a law requiring all State jurisdictional dam owners, except for owners of low-hazard dams, to develop inundation maps approved by DSOD and emergency action plans approved by Cal OES.</p> <p>At the time of the drafting of this plan in early July 2019, 12 State jurisdictional dams in Los Angeles County had approved dam breach inundation maps, including:</p> <ul style="list-style-type: none"> • Castaic Lake Dam: an earthen dam with a storage capacity of 323,700 acre-feet in Warm Springs Mountain • Pyramid Dam: an earthen and rock dam with a storage capacity of 178,700 acre-feet in Black Mountain • Chevy Chase 1290: an earthen dam with a storage capacity 17 acre-feet of in Pasadena • Elysian Dam: and earthen dam with a storage capacity of 167 acre-feet in Los Angeles • Lower San Fernando Dam: hydraulic fill dam with a storage capacity of 9,843 acre-feet in San Fernando • Eagle Rock Dam: an earthen dam with a storage capacity of 254 acre-feet in Pasadena • Santa Ynez Canyon Dam: an earthen dam with a storage capacity 356 acre-feet in Topanga • Devils Gate Dam: a gravity dam with a storage capacity of 2,600 acre-feet Pasadena • Palos Verdes Reservoir: an earthen dam with a storage capacity of 1,100 acre-feet in Torrance • Littlerock – Palmdale Dam: a roller-compacted concrete dam with a storage capacity of 4,600 acre-feet in Pacifico Mountain • Harold Reservoir: an earthen dam with a storage capacity of 3,870 acre-feet in Palmdale • Westlake Reservoir: an earthen dam with a storage capacity of 9,200 acre-feet in Westlake Village

Table 4-6. Dam Failure Identification Profile

Profile	Description
History	<p>Los Angeles County was the scene of the worst dam failure in United States history. The St. Francis Dam was built in San Francisquito Canyon, approximately 40 miles northwest of downtown Los Angeles, in 1924. On the night of March 12-13, 1928, the dam catastrophically failed, releasing approximately 12.4 billion gallons of water. At least 411 people were killed. Subsequent investigations determined that the dam failed as a result of defective foundations that had been built upon an unstable rock formation. As a result of the disaster, the State of California increased dam safety legislation and oversight, and created a state Board of Registration for civil engineers to regulate the industry.</p>
Extent / Severity	<p>The Federal Guidelines for Inundation Mapping of Flood Risks Associated with Dam Incidents and Failures (FEMA P-946, July 2013) defines downstream hazards for dam incidents. Downstream hazards are based “solely on the potential downstream impacts to life and property should the dam fail when operating with a full reservoir.” FEMA has developed three categories in increasing severity for downstream hazards: Low, Significant, and High. DSOD adds a fourth category of Extremely High. In Los Angeles County there are 40 dams that are classified as High, with the potential impact expected to cause loss of at least one human life, and 30 dams classified as Extremely High, with the potential impact expected to cause considerable loss of human life or result in an inundation area with a population of 1,000 or more.</p> <p>As noted in Figure 4-3, nine Extremely High hazard dams and three High hazard dams in the County have approved dam breach inundation maps for a total of 45.70 square miles (0.96 %) in Los Angeles County, and a total of 13.37 square miles (0.44 %) in Unincorporated Los Angeles County.</p>
Recurrence Probability	<p>Dams fail for a variety of reasons, including sub-standard construction materials/techniques, spillway design error, geological instability, poor maintenance, and earthquakes, and therefore recurrence probabilities are unknown. State jurisdiction dams are regulated by the DSOD and each dam undergoes inspection on an annual basis to ensure it is safe, performing as intended, and is not developing issues. However, in 2017, the United States Army Corps of Engineers (USACE) discovered that the Whittier Narrows Dam was structurally unsafe and that an intense storm could prematurely open the dam’s massive spillway and flood the area below from Pico Rivera to Long Beach. The USACE has reclassified the Whittier Narrows Dam as the agency’s highest dam priority nationally because of the risks “due to the combination of loss of life with a very high likelihood of failure only when filled by a rare flood event.” Such a storm event has only a 1 in 900 (i.e., 0.1%) chance of occurring in any given year. Construction on the dam is expected to start in 2021 and conclude by 2025.</p>

Table 4-7. Dam Failure Impact on Land Area

Area	Dam Breach Inundation	
	# of Sq. Miles	% of Sq. Miles
Los Angeles County	45.70	0.96
Unincorporated Los Angeles County	13.37	0.44
Supervisory District 1	1.40	0.57
Supervisory District 2	0.00	0.00
Supervisory District 3	24.84	5.76
Supervisory District 4	0.67	0.15
Supervisory District 5	18.00	0.64

Table 4-8. Dam Failure Impact on Vulnerable Populations – People Experiencing Homelessness

Area	Dam Breach Inundation	
	# of Homeless	% of Homeless
City of Los Angeles	1,193	3.62
Unincorporated Los Angeles County	13	0.22

Table 4-9. Dam Failure Impact on Los Angeles County Critical Facilities

Department / Agency	Dam Breach Inundation	
	# of Facilities	% of Facilities
Los Angeles County Animal Care & Control	1	14.29
Los Angeles County Fire Department	3	0.89
Los Angeles County Health Services	2	6.90
Los Angeles County Library	1	1.18
LACMA & NHM	0	0.00
Los Angeles County Office of Education	2	5.41
Los Angeles County - Other (Offices)	0	0.00
Los Angeles County Parks & Recreation	2	1.71
Los Angeles County Public Health	0	0.00
Los Angeles County Public Works	1	0.43
Los Angeles County Sheriff’s Department	3	9.68

LACMA = Los Angeles County Museum of Art

NHM = Natural History Museum

Table 4-10. Overall Summary of Vulnerability to Dam Failure

Dam Failure	
Summary	<p>There are 90 dams in Los Angeles County under State jurisdiction. Seventy dams are classified as High and Extremely High hazard and failure of these types of dams will cause loss of human life and/or result in an inundation area with a population of 1,000 or more.</p> <p>As of June 2017, all dams except those classified as Low hazard are required by the DSOD to have an Emergency Action Plan. An Emergency Action Plan identifies incidents that can lead to potential emergency conditions at a dam, identifies the areas that could be affected by the loss of a reservoir and specifies pre-planned actions to be followed to minimize property damage, potential loss of infrastructure and water resources, and potential loss of life due to failure or misoperation of a dam. Emergency Action Plans also require dam breach inundation maps to be prepared.</p> <p>While the State regulates dams to prevent failure, safeguard life, and protect property, some researchers doubt that the “overall safety of aging federal flood control systems that were not designed with climate change in mind.” They argue that as California experiences more intense storms, the aging dams in the area could fail and/or prematurely open and flood homes, schools, businesses, and roads.</p> <p>In 2016, Climate-Safe Infrastructure Bill (Assembly Bill [AB] 2800) became law and “established the Climate-Safe Infrastructure Working Group to develop recommendations to the California legislature on how to build and design our infrastructure to be safer for Californians in the face of growing climate extremes.” The Working Group’s 2018 report identified nearly 700 High hazard dams in California needing repairs and upgrades.</p>

Kern County

San Bernardino
County

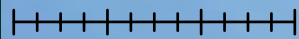
Ventura
County

Orange
County

Pacific Ocean



0 2.5 5 10 15 Miles



Legend

- Dams With Inundation Mapping
- Dam Inundation
- National Forest

Source
Department of Water Resources
Database (2019)
<https://fmds.water.ca.gov>



Dam Breach Inundation Areas
Figure 4-3

*2020 Los Angeles County
All-Hazards Mitigation Plan*



Table 4-11. Drought Identification Profile

Profile	Description
Nature	<p>Drought is a normal, recurrent feature of virtually all climatic zones, including areas of both high and low rainfall, although characteristics will vary significantly from one region to another. Drought differs from normal aridity, which is a permanent feature of the climate in areas of low rainfall. Drought is the result of a natural decline in the expected precipitation over an extended period of time, typically one or more seasons in length. Other climatic characteristics, such as high temperature, high wind, and low relative humidity, impact the severity of drought conditions. Four common definitions for drought are provided as follows:</p> <ul style="list-style-type: none"> • Meteorological drought is defined solely on the degree of dryness, expressed as a departure of actual precipitation from an expected average or normal amount based on monthly, seasonal, or annual time scales. • Hydrological drought is related to the effects of precipitation shortfalls on stream flows and reservoir, lake, and groundwater levels. • Agricultural drought is defined principally in terms of soil moisture deficiencies relative to water demands of plant life, usually crops. • Socioeconomic drought associates the supply and demand of economic goods or services with elements of meteorological, hydrologic, and agricultural drought. Socioeconomic drought occurs when the demand for water exceeds the supply as a result of weather-related supply shortfall. It may also be referred to as a water management drought. <p>A drought’s severity depends on numerous factors, including duration, intensity, and geographic extent, as well as regional water supply demands by humans and vegetation. Due to its multi-dimensional nature, drought is difficult to define in exact terms and poses difficulties in terms of comprehensive risk assessments.</p> <p>Drought differs from other natural hazards in three ways. First, the onset and end of a drought are difficult to determine due to the slow accumulation and lingering of effects of an event after its apparent end. Second, the lack of an exact and universally accepted definition adds to the confusion of its existence and severity. Third, in contrast with other natural hazards, the impact of drought is less obvious and may be spread over a larger geographic area. These characteristics have hindered the preparation of drought contingency or mitigation plans by many governments.</p>
Location	<p>The occurrence of drought is regional in nature and scope, which holds true for Los Angeles County. As such, when drought occurs it typically affects the entire County.</p>
History	<p>Drought is a cyclic part of the climate of California, occurring in both summer and winter, with an average recurrence interval between 3 and 10 years. Droughts in California over the past 100 years are listed as follows. The most recent drought from 2011 to 2015 was the driest 4-year period on record in California since recordkeeping began in 1895.</p> <ul style="list-style-type: none"> • 1917-1921, Statewide except for central Sierra Nevada and north coast • 1922-1926, Statewide except for central Sierra Nevada • 1928-1937, Statewide • 1943-1951, Statewide • 1959-1962, Statewide • 1976-1977, Statewide, except for southwestern deserts • 1987-1992, Statewide • 2007-2009, Statewide, particularly the central coast • 2011-2015, Statewide

Table 4-11. Drought Identification Profile

Profile	Description
Extent / Severity	The National Drought Mitigation Center produces drought monitor maps for the United States. It classifies droughts into five categories: D0 is the least severe, with abnormally dry conditions; and D4 is the most severe, with exceptional drought conditions. California, including Los Angeles County, was in some form of drought for 376 consecutive weeks from December 20, 2011 until March 14, 2019. As of August 13, 2019, Los Angeles County remains free of drought.
Recurrence Probability	Researchers for California’s Fourth Climate Change Assessment have noted that California has a “highly variable climate” with wet or dry periods that can span years and that are “heavily affected by extreme precipitation events.” Furthermore, climate scientists also suggest the possibility of longer and more destructive droughts with climate change. As such, California (including Los Angeles County) is likely to experience long-term droughts at least every decade.

Table 4-12. Drought Impact

Drought	
Summary	Severe droughts can impact the region’s agriculture, forests, hydropower, groundwater supply, recreation, aquatic ecosystems, as well as isolated communities that have limited water supply.

Table 4-13. Overall Summary of Vulnerability to Drought

Drought	
Summary	Climate scientists predict that Los Angeles County and the rest of southern California will get drier and northern California will get hotter. The resulting loss of snowpack in the Sierra Nevada will mean less water for all Californians—farmers, residents, utilities, and even hatchery fish. However, while drought cannot be controlled, according to the USGS, drought can be managed in two ways: through drought planning and in helping communities make the best day-to-day management decisions while the drought is taking place. During the drafting of this plan update, the Governor of California signed an executive order directing specific State agencies to develop a Water Resilience Portfolio to “ensure safe and dependable water supplies, flood protection and healthy waterways for the state’s communities, economy and environment.”

4.3 EARTHQUAKE

Table 4-14. Earthquake Identification Profile

Profile	Description
Nature	<p>An earthquake is a sudden motion or trembling caused by a release of strain accumulated in or along the edge of Earth’s tectonic plates. The effects of an earthquake can be felt far beyond the site of its occurrence. Earthquakes usually occur without warning and can cause massive damage and extensive casualties in a few seconds. Common effects of earthquakes are ground motion and shaking, surface fault ruptures, and ground failure. Ground motion is the vibration or shaking of the ground during an earthquake. When a fault ruptures, seismic waves radiate, causing the ground to vibrate. The severity of the vibration increases with the amount of energy released and decreases with distance from the causative fault or epicenter. Soft soils can amplify ground motions.</p> <p>In addition to ground motion, several secondary natural hazards can occur from earthquakes, such as the following:</p> <ul style="list-style-type: none"> • Surface Faulting: Surface faulting is the differential movement of two sides of a fault at the Earth’s surface. Displacement along faults, both in terms of length and width, varies but can be significant (i.e., up to 20 feet), as can the length of the surface rupture (i.e., up to 200 miles). Surface faulting can cause severe damage to linear structures, including railways, highways, pipelines, tunnels and dams. • Liquefaction: Liquefaction occurs when seismic waves pass through saturated granular soil, distorting its granular structure, and causing some of the empty spaces between granules to collapse. Liquefaction causes lateral spreads (i.e., horizontal movements of commonly 10 to 15 feet, but up to 100 feet), flow failures (i.e., massive flows of soil, typically hundreds of feet, but up to 12 miles), and loss of bearing strength (i.e., soil deformations causing structures to settle or tip). Liquefaction can cause severe damage to property. • Landslides/Debris Flows: Landslides/debris flows occur as a result of horizontal seismic inertia forces induced in the slopes by the ground shaking. The most common earthquake-induced landslides include shallow, disrupted landslides such as rock falls, rockslides, and soil slides. Debris flows are created when surface soil on steep slopes becomes totally saturated with water. Once the soil liquefies, it loses the ability to hold together and can flow downhill at very high speeds, taking vegetation and/or structures with it. Slide risks increase after an earthquake during a wet winter. <p>The two most common measures of earthquake intensity used in the United States are the Modified Mercalli Intensity Scale, which measures felt intensity, and peak ground acceleration (PGA), which measures instrumental intensity by quantifying how hard the earth shakes in a given location. Magnitude (M) is measured by the amplitude of the earthquake waves recorded on a seismograph using a logarithmic scale.</p>

Table 4-14. Earthquake Identification Profile

Profile	Description
Location	<p>As in most of southern and coastal California, the potential for earthquake damage exists throughout Los Angeles County because of the number of active faults in and near the County. These faults are shown on the California Geological Survey (CGS) Fault Activity Map of California. Descriptions of the active faults are provided below. The locations of the active and potentially active faults are shown on Figure 4-4. Some of the more significant faults are described below:</p> <ul style="list-style-type: none"> <p>Malibu Coast fault system: The Malibu Coast fault system includes the Malibu Coast, Santa Monica, and Hollywood faults. The system begins in the Hollywood area, extends along the southern base of the Santa Monica Mountains, and passes offshore a few miles west of Point Dume. The 1973 Point Mugu earthquake is believed to have originated on this fault system.</p> <p>Oak Ridge fault system: The Oak Ridge fault system is a steep (65 degrees) southerly dipping reverse fault that extends from the Santa Susana Mountains westward along the southerly side of the Santa Clara River Valley and into the Oxnard Plain. The system is more than 50 miles long on the mainland and may extend an equal or greater distance offshore. Several recorded earthquake epicenters on land and offshore may have been associated with the Oak Ridge fault system. Portions of the system are zoned by the state as active.</p> <p>Pine Mountain thrust fault and Big Pine fault: These two large faults occur in the mountainous portion of Ventura County north of the Santa Ynez fault; the faults are located 9 and 16 miles north of the city of Ojai, respectively. The Pine Mountain thrust fault is reported to have ruptured the ground surface for 30 miles along its length during the northern Ventura County earthquakes of November 1852.</p> <p>San Andreas fault: San Andreas is the longest and most significant fault in California. Because of clearly established historical earthquake activity, this fault has been designated as active by the State of California. The last major earthquake on this fault near Ventura County was the Fort Tejon earthquake of 1857, which was estimated at magnitude (M) 8.0 and would have caused considerable damage if there had been structures in the southern part of the County. There is a 59 % chance that an M 6.7 quake or larger will occur on this fault in the next 30 years.</p> <p>San Cayetano–Red Mountain–Santa Susana fault system: This fault system consists of a major series of north-dipping reverse faults that extend over 150 miles from Santa Barbara County into Los Angeles County. In this system, the San Cayetano fault is the greatest hazard to Ventura County; it is a major, north-dipping reverse fault that extends for 25 miles along the northern portion of the Ventura Basin. The San Fernando earthquake of 1971, described in the previous section, was caused by activity along this fault.</p> <p>Simi–Santa Rosa fault system: This fault system extends from the Santa Susana Mountains westward along the northern margin of the Simi and Tierra Rejada valleys and along the southern slope and crest of the Las Posas Hills to their westerly termination.</p> <p>Ventura-Pitas Point fault: The western half of this fault is known as the Pitas Point fault, and the eastern half is known as the Ventura fault. The Pitas Point fault extends offshore into the Pacific Ocean and is roughly 14 miles long. The Ventura fault extends into the communities of Ventura and Sea Cliff and runs roughly parallel to portions of U.S. 101 and State Route 126. The fault is roughly 12 miles long and is a left-reverse fault.</p>

Table 4-14. Earthquake Identification Profile

Profile	Description
History	<p>As shown in Figure 4-5, according to the USGS, 163 earthquakes M 5.0> have been recorded in southern California since 1769. Four of these earthquakes have been larger than M 7.0 including:</p> <ul style="list-style-type: none"> • San Juan Capistrano Earthquake (M 7.5), December 8, 1812 • Kern County Earthquake (M 7.5), July 21, 1952 • West Ventura Earthquake (M 7.1), December 21, 1812 • Ridgecrest, (M 7.1), July 6, 2019 <p>In Los Angeles County, significant earthquakes over the past 50 years include:</p> <ul style="list-style-type: none"> • La Habra (M 5.1), March 28, 2014, resulting in a few injuries and \$10 million dollars in damages • Chino Hills (M 5.5), July 29, 2008, resulting in 8 injuries and limited damages • Northridge (M 6.7), January 17, 1994, resulting in 57 deaths, 8,700 injuries and up to \$40 billion dollars in damages. • Sierra Madre (M 5.6), June 28, 199, resulting in 1 death, 100+ injuries and up to \$40 million dollars in damages. • Upland (M 5.7), February 28, 1990, resulting in 30 injuries and \$12.7 million dollars in damages • Whittier (M 5.9), October 1, 1987, resulting in 8 deaths, 200 injuries and \$358 million in damages • San Fernando (M 6.6), February 9, 1971, resulting in 58 – 65 deaths, 200 – 2,000 injuries and up to \$553 million in damages
Extent / Severity	<p>The strength of an earthquake’s ground movement can be measured by PGA. PGA measures the rate in change of motion relative to the established rate of acceleration due to gravity (g = 980 centimeters per second, per second). PGA is used to project the risk of damage from future earthquakes by showing earthquake ground motions that have a specified probability (i.e., 10%, 5%, or 2%) of being exceeded in 50 years. The ground motion values are used for reference in construction design for earthquake resistance and can also be used to assess relative hazard between sites when making economic and safety decisions.</p> <p>In 2008, CGS developed an updated map of earthquake shaking potential for California. The map shows the relative intensity of ground shaking and damage in California from anticipated future earthquakes. Regions near major, active faults are shown in red and pink and experience stronger earthquake shaking more frequently. Regions that are distant from known, active faults are shown in orange and yellow and experience lower levels of shaking less frequently. Figure 4-6 indicates the level of low-frequency shaking potential in Los Angeles County (in which local soil conditions have greater effect on low frequency). In Los Angeles County there are 3,041.91 (63.90%) square miles with violent low frequency shaking potential; and 711.01 square miles (14.93%) with extreme low frequency shaking potential. In Unincorporated Los Angeles County, there are 1,783.57 (58.65%) square miles with violent low frequency shaking potential; and 527.60 square miles (17.35%) with extreme low frequency shaking potential.</p>

Table 4-14. Earthquake Identification Profile

Profile	Description
Recurrence Probability	<p>Ongoing field and laboratory studies suggest the likely maximum magnitudes and recurrence intervals for the major local faults are as follows:</p> <ul style="list-style-type: none"> • Chatsworth fault: M 6.0-6.8, unknown recurrence interval • Hollywood fault: M 5.8-6.5, recurrence interval approximately every 1600 years • Malibu Coast fault: M 6.7, recurrence interval 2,908 years • Newport-Inglewood fault: M 6.0-7.4, unknown recurrence interval • Oak Ridge fault: M 6.9, recurrence interval 299 years • Palos Verdes fault: M 6.0-7.0 or greater, unknown recurrence interval • Red Hill fault (aka Etiwanda Avenue fault): M 6.0-7.0, unknown recurrence interval • Raymond fault: M 6.0-7.0, recurrence interval approximately 4500 years • San Andreas fault: M 6.8-8.0, recurrence interval of 140 years on Mojave segment to 300 years • San Cayetano fault: M. 6.5-7.3, unknown recurrence interval • San Fernando fault: M 6.0-6.8, recurrence interval approximately every 200 years • San Jose fault: M 6.0-6.5, unknown recurrence interval • Santa Susana fault system: M 6.6, recurrence interval 138 years • Santa Monica fault: M 6.0-7.0, unknown recurrence interval • Sierra Madre fault: M 6.0-7.0, recurrence interval several thousand years • Simi–Santa Rosa fault: M 6.7, recurrence interval 933 years • Verdugo fault: M 6.0-6.8, unknown recurrence interval • Whittier fault: M 6.0-7.2, unknown recurrence interval

Table 4-15. Seismic Hazard Impact on Land Area

Area	Violent Earthquake Shaking		Extreme Earthquake Shaking	
	# of Sq. Miles	% of Sq. Miles	# of Sq. Miles	% of Sq. Miles
Los Angeles County	3,041.91	63.90	711.01	14.93
Unincorporated Los Angeles County	1,783.57	58.65	527.60	17.35
Supervisory District 1	244.34	99.25	0.00	0.00
Supervisory District 2	161.74	99.94	0.00	0.00
Supervisory District 3	379.41	87.99	41.73	9.68
Supervisory District 4	305.40	69.42	0.00	0.00
Supervisory District 5	1,950.78	69.50	669.26	23.84

Table 4-16. Seismic Hazard Impact on Vulnerable Populations – People Experiencing Homelessness

Area	Violent Earthquake Shaking		Extreme Earthquake Shaking	
	# of Homeless	% of Homeless	# of Homeless	% of Homeless
City of Los Angeles	31,037	94.25	1,827	5.55
Unincorporated Los Angeles County	5,328	90.60	361	6.14

Table 4-17. Seismic Hazard Impact on Los Angeles County Critical Facilities

Department / Agency	Violent Earthquake Shaking		Extreme Earthquake Shaking	
	# of Facilities	% of Facilities	# of Facilities	% of Facilities
Los Angeles County Animal Care & Control	6	85.71	1	14.29
Los Angeles County Fire Department	314	93.18	19	5.64
Los Angeles County Health Services	24	82.76	5	17.24
Los Angeles County Library	79	92.94	5	5.88
LACMA & NHM	3	75.00	1	25.00
Los Angeles County Office of Education	32	86.49	5	13.51
Los Angeles County - Other (Offices)	24	100.00	0	0.00
Los Angeles County Parks & Recreation	103	88.03	14	11.97
Los Angeles County Public Health	13	92.86	1	7.14
Los Angeles County Public Works	201	87.39	21	9.13
Los Angeles County Sheriff's Department	28	90.32	2	6.45

LACMA = Los Angeles County Museum of Art

NHM = Natural History Museum

Table 4-18. Overall Summary of Vulnerability to Earthquakes

Earthquake	
Summary	<p>Over 75% of Unincorporated Los Angeles County is at risk to violent and extreme perceived shaking from future earthquakes. Violent perceived shaking can produce the potential for heavy damage. According to the USGS, this could mean that well-designed framed structures could be thrown out of plumb and substantial buildings could experience partial building collapse. In extreme shaking, the USGS notes that some well-built wooden structures could be destroyed, and most masonry and frame structures with foundations could be destroyed.</p> <p>Many people in California are looking to boost seismic regulations through the implementation of Assembly Bill (AB) 1857 and AB 2681. AB 1857 will instruct the California Building Standards Commission to increase minimum mandatory standards for most types of buildings in the state, such as apartments, office buildings, and commercial spaces, but would exempt single-family houses and duplexes, while AB 2681 will require cities and counties to create an inventory of potentially vulnerable buildings.</p>



Legend

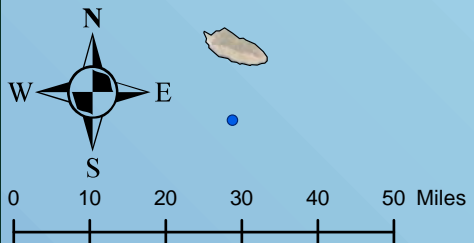
Quaternary and Younger Faults

- Inferred
- - - Moderately Constrained
- · · Well Constrained

Source
 Quaternary Fault and Fold Database
 of the United States (2018)
<https://earthquake.usgs.gov>

Major Faults in Southern California
Figure 4-4

*2020 Los Angeles County
 All-Hazards Mitigation Plan*



Legend

Earthquakes M 5.0 >

- 7+
- 6 - 7
- 5 - 6

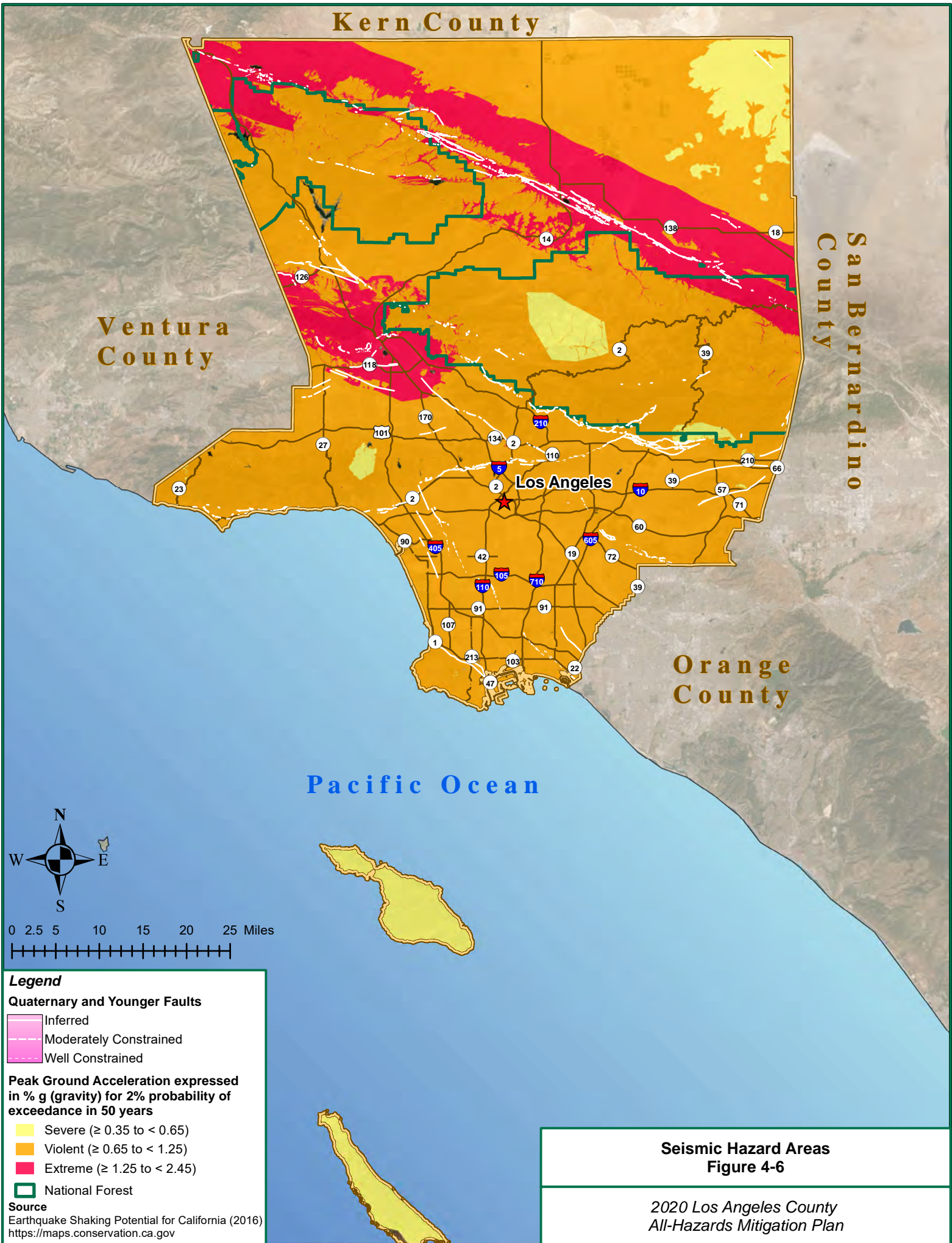
Quaternary and Younger Faults

- Inferred
- - - Moderately Constrained
- . . . Well Constrained

Source

Historic Earthquakes, 1769 to 2015 - California (Magnitude 5.0-plus) (2019)
<https://hub.arcgis.com/>
 Earthquake Catalogs 1932-2019 (2019)
<http://service.scedc.caltech.edu>

Historical Earthquakes (1769-2019)
Figure 4-5



Kern County

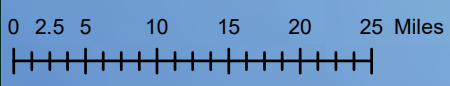
Ventura County

San Bernardino County

Orange County

Pacific Ocean

Los Angeles



Legend

Quaternary and Younger Faults

- Inferred
- Moderately Constrained
- Well Constrained

Peak Ground Acceleration expressed in % g (gravity) for 2% probability of exceedance in 50 years

- Severe (≥ 0.35 to < 0.65)
- Violent (≥ 0.65 to < 1.25)
- Extreme (≥ 1.25 to < 2.45)

National Forest

Source
 Earthquake Shaking Potential for California (2016)
<https://maps.conservation.ca.gov>

**Seismic Hazard Areas
Figure 4-6**

*2020 Los Angeles County
All-Hazards Mitigation Plan*

4.4 FLOOD

Table 4-19. Flood Identification Profile

Profile	Description
Nature	<p>A flood occurs when the existing channel of a stream, river, canyon, or other watercourse cannot contain excess runoff from rainfall or snowmelt, resulting in overflow onto adjacent lands. In coastal areas, flooding may occur when high winds or tides result in a surge of seawater into areas that are above the normal high tide line.</p> <p>Secondary hazards from floods can include:</p> <ul style="list-style-type: none"> • Erosion or scouring of stream banks, roadway embankments, foundations, footings for bridge piers, and other features. • Impact damage to structures, roads, bridges, culverts, and other features from high-velocity flow and from debris carried by floodwaters. Such debris may also accumulate on bridge piers and in culverts, increasing loads on these features or causing overtopping or backwater effects. • Destruction of crops, erosion of topsoil, and deposition of debris and sediment on croplands. • Release of sewage and hazardous or toxic materials when wastewater treatment plants are inundated, storage tanks are damaged, and pipelines are severed. <p>In areas such as Los Angeles County that do not have extended periods of below-freezing temperatures or significant snowfall, floods usually occur during the season of highest precipitation or during heavy rainfalls after prolonged dry periods. Los Angeles County is dry during the late spring, summer, and early fall, and receives most of its rain during the winter months. The rainfall season extends from November through April, with approximately 95% of the annual rainfall occurring during this period. Los Angeles County averages only 15 inches of precipitation per year; less in along the coast and the dessert, and more in the foothills and mountains.</p>
Location	<p>Los Angeles County has an extensive flood control system (Figure 4-7) that has eliminated much of their flood hazards. However, major flood sources in Los Angeles County still include Ballona Creek, Los Angeles River, Malibu Creek, Pacific Ocean, Rio Hondo River, San Gabriel River and its tributaries, Santa Clara River, Topanga Canyon, and the Pacific Ocean.</p> <p>In Unincorporated Los Angeles County, flooding sources include:</p> <ul style="list-style-type: none"> • Little Rock and Big Rock Washes: Flooding occurs when the flows reach the valley floor where the channels flatten out. This allows the flows to spread over great distances, inundating the surrounding areas. • Antelope Valley: Flooding occurs when flows from the mountains reach the broad alluvial plan in the Antelope Valley are northerly from the mountains across the broad alluvial plain. During minor storms, much of the flow percolates into the ground. In major storms, flows reach the lake at the northern County limits, where flood flows pond until evaporated. • Foothills of Santa Clarita: Flooding and mudflows occur in the foothill areas during intense rainfall, usually following fires in the upstream watershed. • Coastline: Flooding is caused by waves generated by winter storms. The occurrence of such a storm event in combination with high astronomical tides and strong winds can cause a significant wave runup and allow storm waves to reach higher than normal elevations along the coastline.

Table 4-19. Flood Identification Profile

Profile	Description
History	<p>The federal government has declared 13 flooding emergencies affecting Los Angeles County, including:</p> <ul style="list-style-type: none"> • California Flood and Erosion (Disaster Declaration Number [DR]-15), February 5, 1954 • California Flooding (DR-47), December 23, 1955 • California Heavy Rainstorms, Flood (DR-82), April 4, 1958 • California Floods (DR-122), March 6, 1962 • California Severe Storms, Flooding (DR-138), October 24, 1962 • California Severe Storms, Heavy Rains, Flooding (DR-145), February 25, 1963 • California Flooding (DR-270), August 15, 1969 • California Winter Storms Flooding (DR-547), February 15, 1978 • Southern California Winter Storms (DR-615), February 7 and 21, 1980 • Coastal Storms (DR-812), December 21, 1988 • California Winter Storms (DR-935), February 12 and 19, 1992 • California Winter Storms (DR-979), January 7, 1993-February 19, 1993 • California Severe Winter Storms, Flooding, and Mudslides (DR-4305), January 18, 2017-January 23, 2017
Extent / Severity	<p>The magnitude of flooding that is used as the standard for floodplain management in the United States is a flood with a probability of occurrence of 1% in any given year. This flood is also known as the 100-year flood (i.e., base flood). The 100-year flood, as well as the 500-year flood (0.2%), are considered Special Flood Hazard Areas (SFHA) and identified on FEMA’s Digit Flood Insurance Rate Maps (DIFRM). The Los Angeles County Digital Flood Rate Insurance Map (DFIRM) (Figure 4-8) identifies 4.19 square miles (0.09%) with a 1% annual chance of flooding, and 243.32 square miles (5.11%) with a 0.2% annual chance of flooding. In Unincorporated Los Angeles County, there are 1.23 square miles (0.04%) with a 1% annual chance of flooding, and an additional 64.77 square miles (2.13 %) with a 0.2% annual chance of flooding.</p>
Recurrence Probability	<p>Floods can occur at any time, but are most common with annual winter storms packed with subtropical moisture. Severe flooding is most likely to occur during strong El Niño events, generally ranging from 2 to 7 years and lasting from as little as 6 months to as long as 4 years.</p>

Table 4-20. Flood Impact on Land Area

Area	0.2% Annual Chance of Flooding		1% Annual Chance of Flooding	
	# of Sq. Miles	% of Sq. Miles	# of Sq. Miles	% of Sq. Miles
Los Angeles County	243.32	5.11	4.19	0.09
Unincorporated Los Angeles County	64.77	2.13	1.23	0.04
Supervisory District 1	27.14	11.02	0.90	0.37
Supervisory District 2	19.32	11.94	0.20	0.12
Supervisory District 3	4.38	1.01	1.31	0.30
Supervisory District 4	80.06	18.20	0.32	0.07
Supervisory District 5	112.39	4.00	1.45	0.05

Table 4-21. Flood Impact on Vulnerable Populations – People Experiencing Homelessness

Area	0.2% Annual Chance of Flooding		1% Annual Chance of Flooding	
	# of Homeless	% of Homeless	# of Homeless	% of Homeless
City of Los Angeles	1,601	4.86	87	0.26
Unincorporated Los Angeles County	170	2.88	0	0.00

Table 4-22. Flood Impact on Los Angeles County Critical Facilities

Department / Agency	0.2% Annual Chance of Flooding		1% Annual Chance of Flooding	
	# of Facilities	% of Facilities	# of Facilities	% of Facilities
Los Angeles County Animal Care & Control	2	28.57	0	0.00
Los Angeles County Fire Department	46	13.65	0	0.00
Los Angeles County Health Services	5	17.24	0	0.00
Los Angeles County Library	15	17.65	0	0.00
LACMA & NHM	0	0.00	0	0.00
Los Angeles County Office of Education	5	13.51	0	0.00
Los Angeles County - Other (Offices)	2	8.33	0	0.00
Los Angeles County Parks & Recreation	8	6.84	0	0.00
Los Angeles County Public Health	0	0	0	0.00
Los Angeles County Public Works	41	17.38	1	0.43
Los Angeles County Sheriff's Department	5	16.13	0	0.000

LACMA = Los Angeles County Museum of Art

NHM = Natural History Museum

Table 4-23. Overall Summary of Vulnerability to Floods

Flood	
Summary	<p>Los Angeles County has a long history of moderate to severe flooding during major storms. In the Los Angeles basin area, an extensive flood control system has eliminated much of this problem. However, in the less densely populated areas where relatively few flood controls have been constructed, flooding remains a problem. In areas with alluvial fans, flood flows discharge from the mountainous canyons in an uncontrolled manner onto the desert floor, thereby resulting in widespread damage to agricultural land, buildings, and infrastructure. In the foothill areas that experience intense rainfall, mudflows pose a risk to those downstream. Finally, along the coast, waves generated by winter storms in combination with high astronomical tides and strong winds can cause a significant wave runup, resulting in erosion and coastal flooding to low-lying portions of the shoreline.</p> <p>According to the Los Angeles County Public Works, there are 55 Repetitive Loss (RL) properties in 22 RL areas of Unincorporated Los Angeles County as of the last submitted 2019 Community Rating System (CRS) Recertification. A Repetitive Loss (RL) property is any insurable building for which two or more claims of more than \$1,000 were paid by the National Flood Insurance Program (NFIP) in any rolling 10-year period, since 1978. Updated location information about RL properties in Unincorporated Los Angeles County were not available during the drafting of this plan. Data from 2011 showed that 26 RL properties were located in the SFHA. At the time, the Los Angeles County Public Works stated, “the majority of the repetitive losses are associated with localized urban drainage flood problems, even for properties within a FEMA-designated flood zone.” The Los Angeles County Public Works oversees RL mitigation projects.</p>

Kern County

San Bernardino
County

Ventura
County

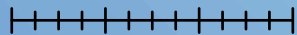
Orange
County

Los Angeles

Pacific Ocean



0 2.5 5 10 15 Miles



Legend

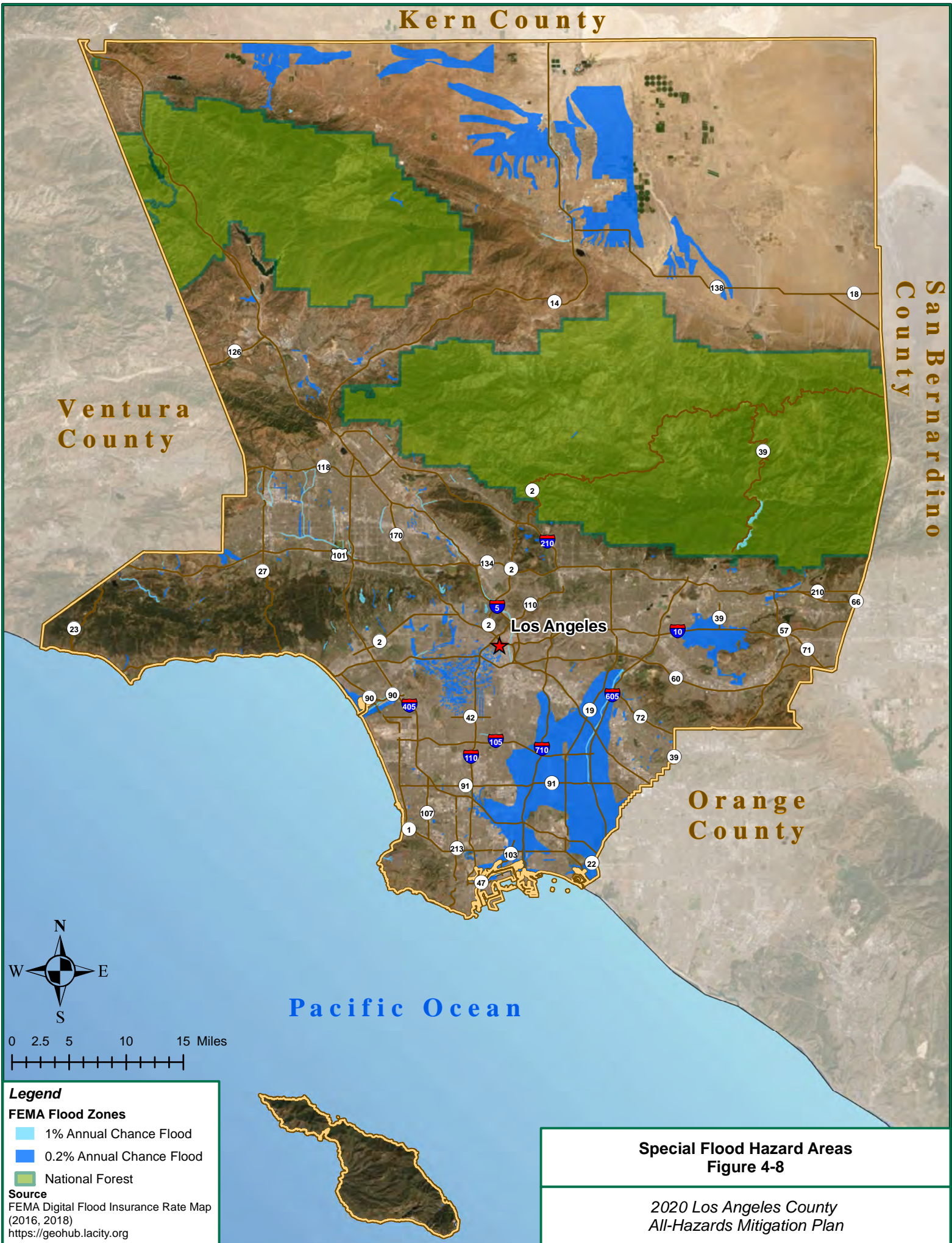
- Debris Basin
- Concrete Lined Channels
- Soft Bottom Channels
- LACFCD levees
- USACE levees
- National Forest

Source
DPW (2019)
<http://egjsgcx.isd.lacounty.gov>

Los Angeles County Flood Control System
Figure 4-7

2020 Los Angeles County
All-Hazards Mitigation Plan





4.5 LANDSLIDE

Table 4-24. Landslide Identification Profile

Profile	Description
Nature	<p>Landslide is a general term for the dislodging and fall of a mass of soil or rocks along a sloped surface, or for the dislodged mass itself. The term is used for varying phenomena, including mudflows, mudslides, debris flows, rock falls, rockslides, debris avalanches, debris slides, and slump-earth flows. Landslides may result from a wide range of combinations of natural rock, soil, or artificial fill. The susceptibility of hillside and mountainous areas to landslides depends on variations in geology, topography, vegetation, and weather. Landslides may also occur because of indiscriminate development of sloping ground or the creation of cut-and-fill slopes in areas of unstable or inadequately stable geologic conditions.</p> <p>Additionally, landslides often occur together with other natural hazards, thereby exacerbating conditions, as described below:</p> <ul style="list-style-type: none"> • Shaking due to earthquakes can trigger events ranging from rock falls and topples to massive slides. • Intense or prolonged precipitation that causes flooding can also saturate slopes and cause failures leading to landslides. • Wildfires can remove vegetation from hillsides, significantly increasing runoff and landslide potential. • Landslides into a reservoir can indirectly compromise dam safety; a landslide can even affect the dam itself. • Another type of landslide occurs in areas cut by perennial streams. As floodwaters erode channel banks, rivers have undercut clay-rich sedimentary rocks along their south bank, thereby destabilizing the ground and causing the ground above it to slide.
Location	<p>In 2011, CGS created a deep-seated landslide grip map to show the relative likelihood of deep landslides in California. The map combines landslide inventory, geology, rock strength, slope, average annual rainfall and earthquake shaking potential layers to create classes of landslide susceptibility. As shown in Figure 4-9, the map shows areas of low landslide susceptibility, mainly, the Los Angeles Basin, to areas of high susceptibility, including the Santa Monica Mountains, the San Gabriel Mountains, the Sierra Pelona Mountains, the Baldwin Hills, the Puente Hills, and the Palos Verdes Hills.</p>

Table 4-24. Landslide Identification Profile

Profile	Description
History	<p>Like much of California, Los Angeles County has experienced landslides. Landslides in Los Angeles are generally triggered by intense and/or prolonged rainfall but can also occur after an earthquake. Notable recent landslides in Los Angeles County include:</p> <ul style="list-style-type: none"> • January 1994, the Northridge earthquake triggered more than 11,000 landslides, with the majority concentrated in the Santa Susana Mountains and the mountains north of the Santa Clara River valley. Most of the triggered landslides were shallow highly disrupted falls and slides. However, the larger disrupted slides were reactivations of previously existing landslides. • March 1995, heavy rains weakened the geologically unstable Pacific Palisades bluffs. A 300-foot section gave way and buried part of Pacific Coast Highway under up to 30 feet of rain-soaked earth, rock, and debris. • March 2005, a slide near Sunset Mesa caused 20,000 cubic yards of debris to cover the Pacific Coast Highway. • January 2018, a hillside in Malibu gave way leaving a house uninhabitable. • December 2018, heavy rain on the Woolsey Fire burned hillsides created debris flows and mudslides in and around Malibu causing several road closures. • January 2019, sections of the Pacific Coast Highway near the Ventura County line were closed due to mudslides.
Extent / Severity	<p>Figure 4-9 shows deep seated landslide susceptibility areas in Los Angeles County. According to the Susceptibility to Deep-Seated Landslides grip map, there are 750.02 square miles (15.75%) of land in Los Angeles County located in the Classes IX and X. In Unincorporated Los Angeles County, there are 577.63 square miles (18.99%) in this hazard area.</p>
Recurrence Probability	<p>Shallow landslides can occur at any time during the winter but are more likely happen when the ground is nearly saturated. According to the USGS, in Southern California “at least 10 inches of rainfall during the winter is needed to nearly saturate the ground. After this point, a rain burst of 0.2 to 0.25 inches in one hour has been observed to trigger abundant shallow landslides.” However, deep-seated landslides generally need deep infiltration of rainfall (which can take weeks or months to occur) to be triggered.</p> <p>Based on the above, both shallow and deep-seated landslides are likely to occur after significant rainfall. Significant rainfall is most common with winter storms packed with subtropical moisture. Significant rainfall is most likely to occur during strong El Niño events, generally ranging from 2 to 7 years.</p>

Table 4-25. Landslide Impact on Land Area

Area	Deep-Seated Landslide Class IX and X	
	# of Sq. Miles	% of Sq. Miles
Los Angeles County	750.02	15.75
Unincorporated Los Angeles County	577.63	18.99
Supervisorial District 1	17.29	7.02
Supervisorial District 2	2.73	1.68
Supervisorial District 3	114.61	26.58
Supervisorial District 4	105.12	23.89
Supervisorial District 5	509.31	18.14

Table 4-26. Landslide Impact on Vulnerable Populations – People Experiencing Homelessness

Area	Deep-Seated Landslide Class IX and X	
	# of Homeless	% of Homeless
City of Los Angeles	234	0.71
Unincorporated Los Angeles County	325	5.55

Table 4-27. Landslide Impact on County Critical Facilities

Department / Agency	Deep-Seated Landslide Class IX and X	
	# of Facilities	% of Facilities
Los Angeles County Animal Care & Control	0	0.00
Los Angeles County Fire Department	7	2.08
Los Angeles County Health Services	0	0.00
Los Angeles County Library	0	0.00
LACMA & NHM	0	0.00
Los Angeles County Office of Education	1	2.70
Los Angeles County - Other (Offices)	0	0.00
Los Angeles County Parks & Recreation	2	1.71
Los Angeles County Public Health	0	0.00
Los Angeles County Public Works	37	16.09
Los Angeles County Sheriff's Department	1	3.23

LACMA = Los Angeles County Museum of Art

NHM = Natural History Museum

Table 4-28. Overall Summary of Vulnerability to Landslides

Landslide	
Summary	<p>Areas prone to landslide include existing old landslides, base of slopes, base of minor drainage hollows, base or top of an old fill slope, base or top of a steep cut slope, and developed hillsides where leach field septic systems are used. In Los Angeles County, the majority of landslide-prone areas include the Santa Monica Mountains, the San Gabriel Mountains, the Sierra Pelona Mountains, the Baldwin Hills, the Puente Hills, and the Palos Verdes Hills. Landslides may: cause injury or death to those trapped; break utility lines; block/damage roadways; damage foundations, chimneys, or surrounding land; and lead to flash flooding and additional landsliding.</p> <p>In Los Angeles County, landslide risks are mitigated through the Hillside Management Area Ordinance & Hillside Design Guidelines (Table 5-3).</p>

Kern County

San Bernardino
County

Ventura
County

Orange
County

Pacific Ocean


ROCK STRENGTH

1 2 3

SLOPE CLASS	ROCK STRENGTH		
	1	2	3
1	0	0	0
2	0	V	VII
3	0	V	VII
4	II	VIII	IX
5	VI	IX	X
6	VII	IX	X
7	VIII	IX	X
8	VIII	IX	X

LANDSLIDE SUSCEPTIBILITY CLASSES

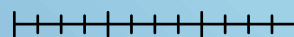
(0 III V VI VII VIII IX X)
increasing susceptibility →

 National Forest

Source
Susceptibility to Deep-Seated
Landslides in California (2018)
<https://maps.conservation.ca.gov>



0 2.5 5 10 15 Miles



Deep-Seated Landslide Susceptibility Area
Figure 4-9

2020 Los Angeles County
All-Hazards Mitigation Plan

4.6 TSUNAMI

Table 4-29. Tsunami Identification Profile

Profile	Description
Nature	<p>A tsunami is a series of traveling ocean waves of extremely long length, generated by disturbances associated primarily with earthquakes occurring below or near the ocean floor. Subduction zone earthquakes at plate boundaries often cause tsunamis. However, tsunamis can also be generated by underwater landslides or volcanic eruptions, the collapse of volcanic edifices, and—in very rare instances—large meteorite impacts in the ocean.</p> <p>In the deep ocean, a tsunami may have a length from wave crest to wave crest of 100 miles or more, but a wave height of only a few feet or less. Thus, the wave period can be up to several hours, and wavelengths can exceed several hundred miles. Therefore, tsunamis are unlike typical wind-generated swells on the ocean, which might have a period of about 10 seconds and a wavelength of up to 300 feet. Tsunamis cannot be felt aboard ships and they cannot be seen from the air or the open ocean. In deep water, the waves may reach speeds exceeding 700 miles per hour.</p> <p>Tsunamis arrive as a series of successive crests (high water levels) and troughs (low water levels). These successive crests and troughs can occur anywhere from 5 to 90 minutes apart; however, they usually occur 10 to 45 minutes apart.</p> <p>Tsunamis not only affect beaches that are open to the ocean, but also bay mouths, tidal flats, and the shores of large coastal rivers. Tsunami waves can also diffract around land masses. Because tsunamis are asymmetrical, the waves may be much stronger in one direction than another, depending on the nature of the source and the surrounding geography. However, tsunamis do propagate outward from their source, so coasts in the shadow of affected land masses are safer.</p>
Location	<p>Figure 4-10 shows tsunami evacuation area based on Maximum Phase as described in the California Tsunami Evacuation Playbook. This map illustrates coastal land areas that can become submerged due to tsunami run-up. The area of land subject to inundation is a factor of:</p> <ul style="list-style-type: none"> • Distance of shoreline from the tsunami-generating event • Magnitude of the earthquake causing the event; duration and period of waves • Run-up elevations • Tidal level at time of occurrence • Location along shore and direction of shore in respect to propagated waves • Topography of the seabed <p>In Los Angeles County, areas at risk to the maximum tsunami run up include the ports of Long Beach and Los Angeles, Catalina Island, and areas in the cities of Los Angeles, Long Beach, Manhattan Beach, Redondo Beach, Hermosa Beach, El Segundo, Palos Verdes, Santa Monica, and Malibu. In Unincorporated Los Angeles County, the five coastal zones (i.e., Marin Del Rey, Santa Catalina Island, Santa Monica Mountains, San Clemente Island, and Ballona Wetlands Area A) are subject to inundation.</p>

Table 4-29. Tsunami Identification Profile

Profile	Description
History	<p>Between 1923 and 2011, 11 major tsunami events occurred in Los Angeles County, including:</p> <ul style="list-style-type: none"> • April 13, 1923, a M 7.2 earthquake in Kamchatka caused a tsunami in Los Angeles. • August 30, 1930, a probable meteotsunami (i.e., a tsunami of meteorological origin) with a 10-foot run-up amplitude hit Santa Monica. • April 1, 1946, a M 8.8 earthquake in the Aleutian Islands caused tsunamis with run-up amplitudes ranging from 1 to 6 feet in Catalina Island, Los Angeles, and Long Beach, breaking ships from their moorings. • November 4, 1952, a M 9.0 earthquake in Kamchatka caused tsunamis with run-up amplitudes ranging from 1 to 2 feet in Santa Monica, Los Angeles, and Long Beach. • March 9, 1957, a M 8.6 earthquake in the Aleutian Islands caused tsunamis with run-up amplitudes ranging from 1 to 2 feet in Santa Monica, Los Angeles, and Long Beach. • May 22, 1960, a M 9.5 earthquake in Chile caused tsunamis with run-up amplitudes ranging from 2 to 5 feet in Catalina Island, Los Angeles, Long Beach, and Santa Monica. One person died, 800 small craft were unmoored, 200 boats were damaged, and 40 boats were sunk. The tsunamis resulting in \$1 million dollars in damages. • March 28, 1964, a M 9.2 earthquake in Alaska caused tsunamis with run-up amplitudes ranging from 2 to 3 feet in Catalina Island, Los Angeles, Long Beach, and Santa Monica. One longshoreman was killed, 100 boats were unmoored, and 7 boats were sunk. The tsunamis caused approximately \$350 thousand dollars in damages. • November 29, 1975, a M 7.1 earthquake in Hawaii caused a tsunami with a run-up amplitude of 4 feet in Catalina Island, damaging docks and boats. • September 29, 2009, a M 8.0 earthquake in Samoa caused a tsunami with a 1-foot run-up amplitude in Los Angeles. • February 27, 2010, a M 8.8 earthquake in Chile caused tsunamis with run-up amplitudes ranging from 1 to 3 feet in Catalina Island, Los Angeles, Long Beach, and Santa Monica, causing minor damage to docks and boats. • March 11, 2011, a M 9.0 earthquake in Japan caused tsunamis with run-up amplitudes ranging from 2 to 3 feet in Catalina Island, Los Angeles, Long Beach, Redondo Beach, and Santa Monica, damaging docks and boats.
Extent / Severity	<p>Figure 4-10 shows the maximum considered tsunami runup from a number of extreme tsunami sources. There are 43.35 square miles (0.91%) in Los Angeles County located in this hazard area. In Unincorporated Los Angeles County there are 2.07 square miles (0.07%) at risk to a maximum tsunami runup.</p>
Recurrence Probability	<p>According to University of Southern California engineers, the “likelihood of a large tsunami to strike California would be hard to predict.... small tsunamis will swell into California (which includes coastal Los Angeles County) every few years.”</p> <p>Additionally, Cal OES and CGS are preparing a new type of tsunami hazard map, the probabilistic tsunami hazard analysis map, which will show potential tsunami events that have a 1000-year average return occurrence. The maps are expected to be completed in 2020.</p>

Table 4-30. Tsunami Impact on Land Area

Area	Maximum Tsunami Inundation Area	
	# of Sq. Miles	% of Sq. Miles
Los Angeles County	43.35	0.91
Unincorporated Los Angeles County	2.07	0.07
Supervisory District 1	0.00	0.00
Supervisory District 2	0.12	0.08
Supervisory District 3	2.65	0.61
Supervisory District 4	18.00	4.09
Supervisory District 5	0.00	0.00

Table 4-31. Tsunami Impact on Vulnerable Populations – People Experiencing Homelessness

Area	Maximum Tsunami Inundation Area	
	# of Homeless	% of Homeless
City of Los Angeles	622	1.89
Unincorporated Los Angeles County	20	0.34

Table 4-32. Tsunami Impact on County Critical Facilities

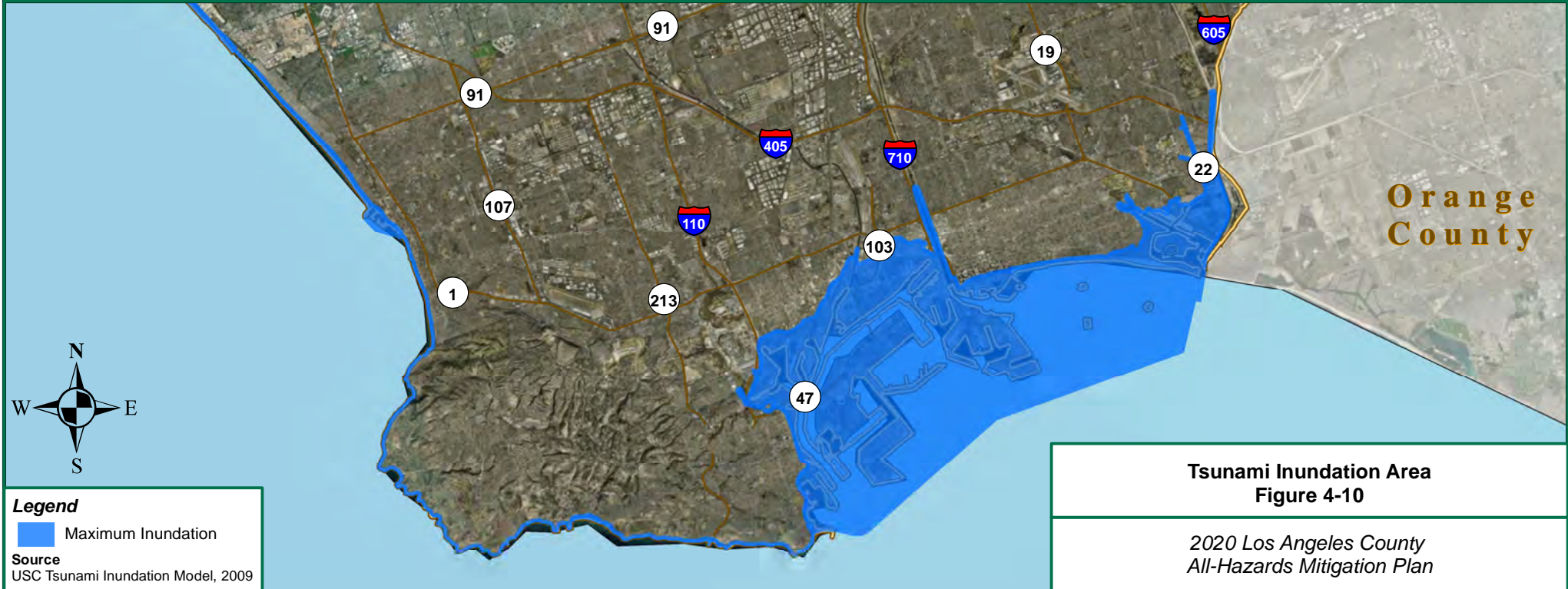
Department / Agency	Maximum Tsunami Inundation Area	
	# of Facilities	% of Square Facilities
Los Angeles County Animal Care & Control	0	0.00
Los Angeles County Fire Department	14	4.15
Los Angeles County Health Services	0	0.00
Los Angeles County Library	1	1.18
LACMA & NHM	0	0.00
Los Angeles County Office of Education	0	0.00
Los Angeles County - Other (Offices)	1	4.17
Los Angeles County Parks & Recreation	0	0.00
Los Angeles County Public Health	0	0.00
Los Angeles County Public Works	15	6.52
Los Angeles County Sheriff's Department	1	3.23

LACMA = Los Angeles County Museum of Art

NHM = Natural History Museum

Table 4-33. Overall Summary of Vulnerability to Tsunamis

Tsunami	
Summary	<p>In Southern California, an earthquake could trigger an underwater avalanche or submarine landslide in the Santa Monica Bay and produce a tsunami that could inundate low-lying areas of Los Angeles County. In fact, according to researchers a locally generated tsunami could bring water as high as 5 feet in Marina del Rey, 7 feet in Manhattan Beach, 8 feet at the ports, and 11 feet in Redondo Beach. Such a tsunami could flood homes and destroy many small boats in nearby harbors, thereby creating dangerous debris.</p> <p>Researchers warn that California needs to be better prepared for tsunamis and while new deep-sea sensors have helped in tsunami detection, they are better suited for far-away tsunamis rather than local tsunamis.</p> <p>Cal OES and CGS lead Tsunami Preparedness Week in California annually. During this week, governmental agencies, such as the Los Angeles County OEM, and community organizations, participate in exercises, test warning systems and response plans, and host community events to promote tsunami awareness.</p>



4.7 WILDFIRE

Table 4-34. Wildfire Identification Profile

Profile	Description
Nature	<p>Wildfires spread by consuming flammable vegetation. This fire type often begins unnoticed, spreads quickly, and is usually signaled by dense smoke that may be visible from miles around. Wildfires can be caused by human activities (e.g., unattended burns, campfires, or off-road vehicles without spark arresting muffles) or by natural events such as lightning.</p> <p>Wildfires often occur in forests or other highly vegetated areas. In addition, wildfires can be classified as forest, urban, interface or intermix fires, and prescribed burns.</p> <p>The following three factors contribute significantly to wildfire behavior and can be used to identify wildfire hazard areas:</p> <ul style="list-style-type: none"> • Topography describes slope increases, which influences wildfire spread rate increases. South-facing slopes are also subject to more solar radiation, making them drier and thereby intensifying wildfire behavior. However, ridge tops may mark the end of wildfire spread since fire spreads more slowly or may even be unable to spread downhill. • Fuel is the type and condition of vegetation that plays a significant role in wildfire spread occurrence. Certain plant types are more susceptible to burning or will burn with greater intensity. Dense or overgrown vegetation increases the amount of combustible material available as fire fuel (referred to as the “fuel load”). The living-to-dead plant matter ratio is also important. Certain climate changes may increase wildfire risk significantly during prolonged drought periods, as both living and dead plant matter moisture content decreases. Both the horizontal and vertical fuel load continuity is also an important factor. • Weather is the most variable factor affecting wildfire behavior. Temperature, humidity, wind, and lightning can affect ignition opportunities and fire spread rate. Extreme weather, such as high temperatures and low humidity, can lead to extreme wildfire activity. Climate change increases fire to vegetation ignition susceptibility due to longer dry seasons. By contrast, cooling and higher humidity often signal reduced wildfire occurrence and easier containment. <p>Wildfire frequency and severity sometimes result from other hazard impacts, such as lightning, drought, and infestations (e.g., damage caused by spruce-bark beetle infestations). If not promptly controlled, wildfires may grow into an emergency or disaster. Even small fires can threaten lives and resources and destroy improved properties. In addition to affecting people, wildfires may severely affect livestock and pets. Such events may require emergency water/food, evacuation, and shelter.</p> <p>Indirect wildfire effects can be catastrophic. In addition to stripping the land of vegetation and destroying forest resources, large, intense fires can harm the soil, waterways, and the land itself. Soil exposed to intense heat may lose its capability to absorb moisture and support life. Exposed soils erode quickly and exacerbate river and stream siltation; thereby increasing flood potential, harming aquatic life, and degrading water quality. Vegetation-stripped lands are more susceptible to increased debris flow hazards.</p>
Location	<p>Public Resources Code 4201 4204 and Government Code 51175 89 directed the California Department of Forestry and Fire Protection (Cal FIRE) to map areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors. These FHSZ are represented as very high, high, or moderate. Specifically, the maps were created using data and models describing development patterns, potential fuels over a 30- to 50-year time horizon, expected fire behavior, and expected burn probabilities. The maps are divided into local responsibility areas (LRAs) and state responsibility areas (SRAs). LRAs generally include cities, cultivated agriculture lands, and portions of the desert. LRA fire protection is typically provided by city fire departments, fire protection districts, counties, and by Cal FIRE under contract to the local government. SRA is a</p>

Table 4-34. Wildfire Identification Profile

Profile	Description
	<p>legal term defining the area where the state has financial responsibility for wildfire protection. The Los Angeles County Fire Department is one of six contract counties, which has executed a contract with the State of California to provide wildland fire protection on SRA.</p> <p>Figure 4-11 displays the areas of Los Angeles County most susceptible to wildfires and indicates areas of local or state responsibility. Very high FHSZs are generally located in mountainous or hillside areas, including the Santa Monica Mountains, San Gabriel Mountains, Palos Verdes Hills, and Puente Hills.</p>
History	<p>As shown in Figure 4-12, wildfires are a common occurrence in Los Angeles County. Some of the County’s most destructive fires have occurred since 2000, including:</p> <ul style="list-style-type: none"> • The Grand Prix Fire started on October 21, 2003 and burned a total of 50,618 acres between Claremont and Lytle Creek. The fire destroyed 136 homes and was ruled “accidental but human-initiated.” • The Simi Fire started on October 25, 2003 and burned a total of 107,570 acres between Simi Hills and southeastern Simi Valley, in eastern Ventura County and western Los Angeles County, California. It destroyed 37 homes and 278 out buildings. The cause of the fire remains unknown. • The Day Fire started on October 30, 2006 and burned a total of 161,816 acres. The fire primarily burned the Los Padres National Forest. The cause of the fire was human-ignited debris. • The Ranch Fire started on October 20, 2007 and burned a total of 58,410 acres near Townsend Peak in the Angeles National Forest. The cause of the fire was equipment. • The Station Fire started on September 22, 2009 and burned a total of 160,883 acres in the Angeles National Forest. The Station Fire is the largest recorded fire in Los Angeles County. It destroyed 89 residences and another 120 buildings of significance. Two firefighters were killed. The cause of the fire was arson. • The Woolsey Fire started November 8, 2018 and burned a total of 96,949 acres in Los Angeles and Ventura counties including Thousand Oaks, Agoura Hills, Calabasas, the Santa Monica Mountains, Malibu, and West Hills. A total of 1,643 structures were destroyed and 3 people were killed. The cause of the fire is under investigation.
Extent / Severity	<p>As shown on Cal FIRE’s FHSZ maps, in Los Angeles County, there are 386.06 square miles (8.11%) located in the very high LRA FHSZ, 625.01 square miles (13.13%) in the very high SRA FHSZ, and 132.77 square miles (2.79%) in the high SRA FHSZ. In Unincorporated Los Angeles County, this includes: 23.53 square miles (0.77%) of very high LRA FHSZ; 610.94 square miles (20.09%) of very high SRA FHSZ; and 132.06 square miles (4.34%) of high SRA FHSZ.</p>
Recurrence Probability	<p>The climate in Los Angeles County is characterized as Mediterranean dry-summer featuring cool, wet winters and warm, dry summers. High moisture levels during the winter rainy season significantly increase the growth of plants. However, the vegetation is dried during the long, hot summers, decreasing plant moisture content and increasing the ratio of dead fuel to living fuel. As a result, fire susceptibility increases dramatically, particularly in late summer and early autumn. In addition, the presence of chaparral, a drought-resistant variety of vegetation that is dependent on occasional wildfires, is expected in Mediterranean dry-summer climates. The history of plant succession in Los Angeles County is important in predicting fire susceptibility. For several years after a fire has occurred, easily flammable herbaceous species thrive and increase the likelihood of new fires. When woody species become re-established, they contribute to a lower overall level of fire susceptibility for approximately 10 years. However, after this period, the slow aging plant community becomes ever more likely to burn because of increased levels of dead plant material and lowered plant moisture levels.</p>

Table 4-34. Wildfire Identification Profile

Profile	Description
	<p>Additionally, a local meteorological phenomenon, known as the Santa Ana winds, contributes to the high incidence of wildfires in Los Angeles County. These winds originate during the autumn months in the hot, dry interior deserts to the north and east of Los Angeles County. They often sweep west into the County, bringing extremely dry air and high wind speeds that further desiccate plant communities during the period of the year when the constituent species have very low moisture content. The effect of these winds on existing fires is particularly dangerous; the winds can greatly increase the rate at which fires spread.</p> <p>Based on the conditions described above and the history of occurrence in Los Angeles County (1,000-acre plus fires every 1-3 years), future events are very likely to occur. The extent of future events will depend on specific conditions at the time of the fire.</p>

Table 4-35. Wildfire Impact on Land Area

Area	Very High LRA FHSZ		High SRA FHSZ		Very High SRA FHSZ	
	# of Sq. Miles	% of Sq. Miles	# of Sq. Miles	% of Sq. Miles	# of Sq. Miles	% of Sq. Miles
Los Angeles County	386.06	8.11	132.77	2.79	625.01	13.13
Unincorporated Los Angeles County	23.54	0.77	132.06	4.34	610.94	20.09
Supervisory District 1	31.42	12.76	0.00	0.00	1.13	0.46
Supervisory District 2	3.25	2.01	0.00	0.00	0.00	0.00
Supervisory District 3	140.58	32.60	0.01	0.00	92.18	21.38
Supervisory District 4	45.78	10.41	1.11	0.25	86.61	19.69
Supervisory District 5	164.90	5.87	131.65	4.69	444.99	15.85

Table 4-36. Wildfire Impact on Vulnerable Populations – People Experiencing Homelessness

Area	Very High LRA FHSZ		High SRA FHSZ		Very High SRA FHSZ	
	# of Homeless	% of Homeless	# of Homeless	% of Homeless	# of Homeless	% of Homeless
City of Los Angeles	1,291	3.92	0	0.00	0	0.00
Unincorporated Los Angeles County	88	1.49	58	0.99	465	7.91

Table 4-37. Wildfire Impact on County Critical Facilities

Department / Agency	Very High LRA FHSZ		High SRA FHSZ		Very High SRA FHSZ	
	# of Facilities	% of Facilities	# of Facilities	% of Facilities	# of Facilities	% of Facilities
Los Angeles County Animal Care & Control	1	14.29	0	0.00	1	14.29
Los Angeles County Fire Department	39	11.57	1	0.30	14	4.15
Los Angeles County Health Services	1	3.45	0	0.00	0	0.00
Los Angeles County Library	7	8.24	1	1.18	2	2.35
LACMA & NHM	1	25.00	0	0.00	0	0.00
Los Angeles County Office of Education	3	8.11	0	0.00	3	8.11
Los Angeles County - Other (Offices)	0	0.00	0	0.00	0	0.00
Los Angeles County Parks & Recreation	13	11.11	1	0.85	12	10.26
Los Angeles County Public Health	52	22.61	4	1.74	41	17.83
Los Angeles County Public Works	0	0.00	0	0.00	0	0.00
Los Angeles County Sheriff's Department	3	9.68	1	3.23	3	9.68

FHSZ = Fire Hazard Severity Zone

LACMA = Los Angeles County Museum of Art

LRA = Local Responsibility Area

NHM = Natural History Museum

SRA = State Responsibility Area

Table 4-38. Overall Summary of Vulnerability to Wildfires

Wildfire	
Summary	<p>Wildfires are not only capable of burning down vegetation, homes, critical facilities, and infrastructure, but they can also cause loss of life to humans and animals, soil erosion, debris flows, air pollution, serious health problems, and restriction of access to recreational areas.</p> <p>The areas in Los Angeles County that are most susceptible to wildfires are generally located in mountainous or hillside areas, including the Santa Monica Mountains, San Gabriel Mountains, Palos Verdes Hills, and Puente Hills. However, the areas that pose greatest risk to people are generally along the wildland-urban interface (WUI) or intermix. These areas are the transition zones between wildlands and human development and often where areas of housing and vegetation commingle.</p> <p>According to researchers at the United States Forest Service, fires in the WUI areas have not deterred redevelopment. In fact, according to the same researchers, there is a push to return the area to “normal” as soon as possible. California has the strictest fire regulations in the country, which supersede any type of local regulations. However, the rules do not apply to existing homes built before 1991, with the average home in California built decades prior. And unlike earthquakes and floods, there is not a retrofit type of program to encourage homeowners to bring their homes up to current fire requirements.</p>

Kern County

San Bernardino
County

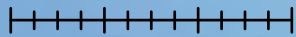
Ventura
County

Orange
County

Pacific Ocean



0 2.5 5 10 15 Miles



Legend

Fire Hazard Severity Zones

Local Responsibility Area (LRA)

Very High

State Responsibility Area (SRA)

Very High

High

Moderate

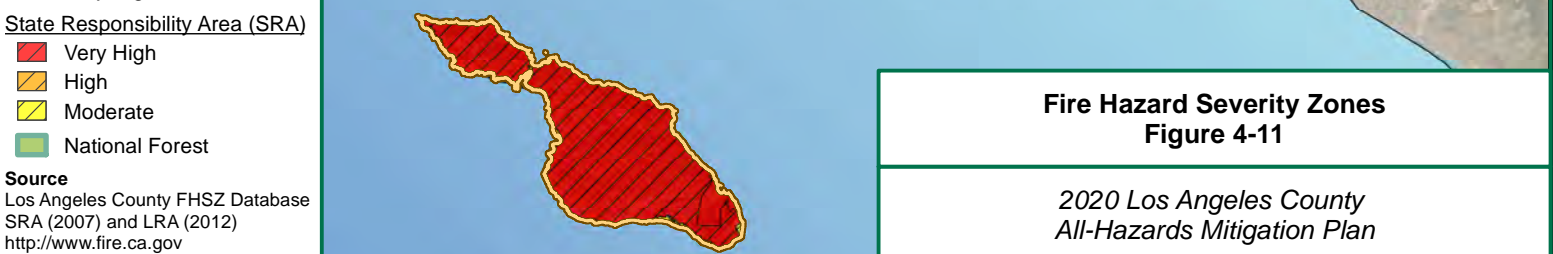
National Forest

Source

Los Angeles County FHSZ Database
SRA (2007) and LRA (2012)
<http://www.fire.ca.gov>

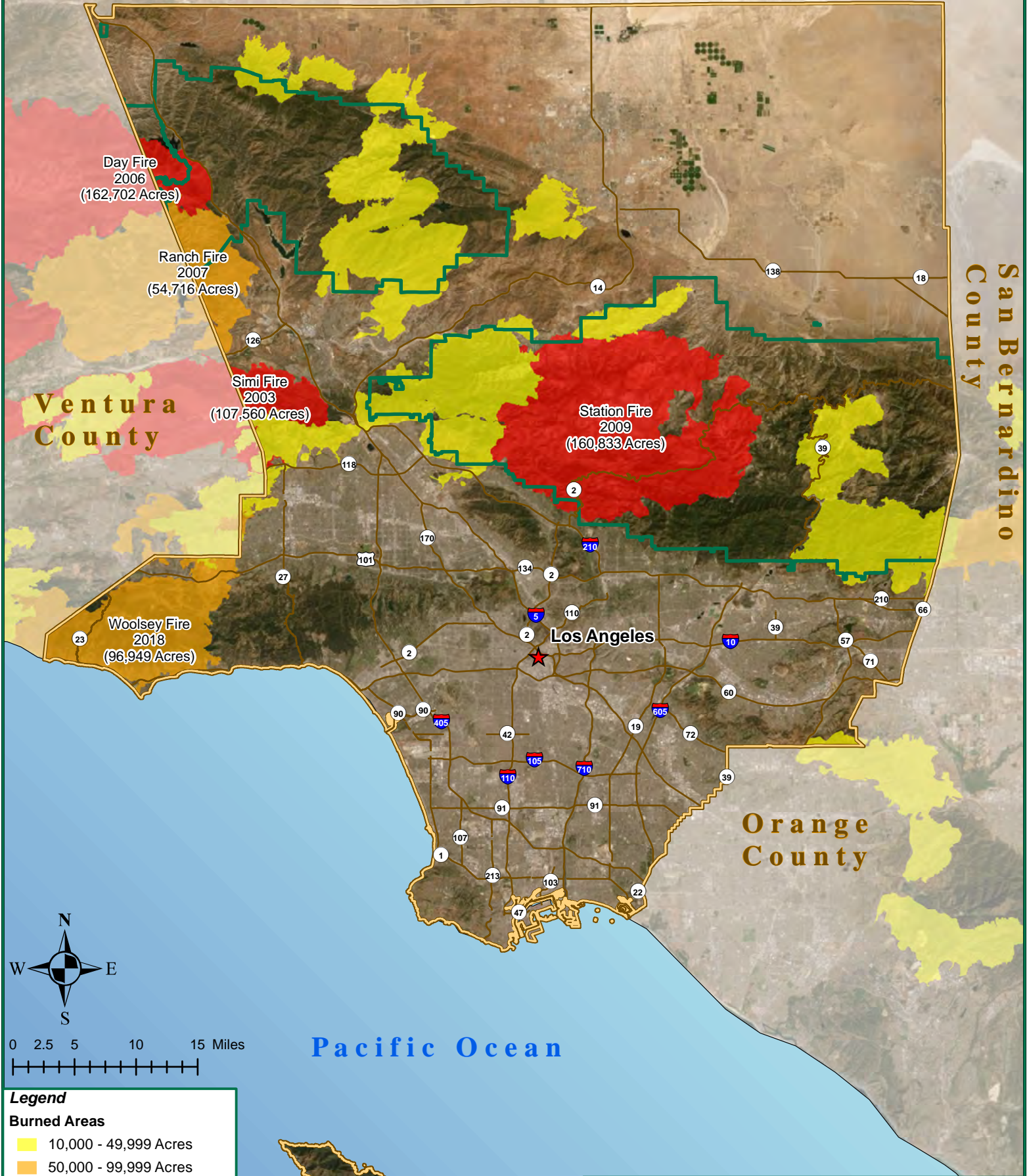
Fire Hazard Severity Zones
Figure 4-11

2020 Los Angeles County
All-Hazards Mitigation Plan



Kern County

San Bernardino
County

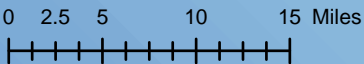


Ventura
County

Los Angeles

Orange
County

Pacific Ocean



Legend

Burned Areas

- 10,000 - 49,999 Acres
- 50,000 - 99,999 Acres
- 100,000+ Acres

□ National Forest

Source
Fire Resource and Assessment Program
Fire Perimeters Database (2019)
<http://frap.fire.ca.gov>

Recent Wildfires (2000-2018)
Figure 4-12

*2020 Los Angeles County
All-Hazards Mitigation Plan*

5 MITIGATION STRATEGY

Section 5—Mitigation Strategy addresses Element C of the Local Mitigation Plan Regulation Checklist.

Regulation Checklist – 44 CFR 201.6 Local Mitigation Plans
Element C: Mitigation Strategy
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 § 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 § 201.6(c)(3)(i))
C3. Does the Plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? (Requirement §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 §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 §201.6(c)(3)(iv)); (Requirement §201.6(c)(3)(iii))
C6. Does the Plan describe a process by which local governments will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? (Requirement §201.6(c)(4)(ii))

5.1 AUTHORITIES, POLICIES, PROGRAMS, AND RESOURCES

Los Angeles County’s existing authorities, policies, programs and resources available for hazard mitigation are listed in **Table 5-1** through **Table 5-3**. These tables have been updated since the 2014 AHMP to reflect any changes in human, technical, financial, legal, and regulatory resources.

As identified in **Table 5-4**, Los Angeles County is looking to expand and improve upon its hazard mitigation authorities by codifying development standards to guide development in the WUI areas, creating an Urban Forest Management Plan and continuing to work with communities to develop Community Wildfire Protection Plans (CWPPs).

Table 5-1 Human and Technical Resources for Hazard Mitigation

Staff/Personnel	Department / Agency	Principal Activities Related to Hazard Mitigation
<p>Planner(s), engineer(s) and technical staff with knowledge of land development, land management practices, and human-caused and natural hazards.</p>	<p>Los Angeles County Department of Regional Planning</p>	<p>Develops and maintains the Los Angeles County 2035 General Plan, including the safety element.</p> <p>Develops area plans based on the Los Angeles County 2035 General Plan, to provide more specific guidance for the development of more specific areas.</p> <p>Reviews private development projects and proposed capital improvements projects and other physical projects involving property for consistency and conformity with the Los Angeles County 2035 General Plan.</p> <p>Anticipates and acts on the need for new plans, policies, and code changes.</p> <p>Applies the approved plans, policies, code provisions, and other regulations to proposed land uses.</p>
<p>Engineer(s), Building Inspectors/Code Enforcement Officers or other professional(s), and technical staff trained in construction requirements</p>	<p>Los Angeles County Public Works</p>	<p>Oversees the effective, efficient, fair, and safe enforcement of the 2017 County of Los Angeles Building Code.</p>
<p>Engineers, construction Project Managers, and supporting technical staff</p>	<p>Los Angeles County Public Works</p>	<p>Provides direct or contract civil, structural, and mechanical engineering services, including contract, project, and construction management.</p>
<p>Engineer(s), Project Manager(s), technical staff, equipment operators, and maintenance and construction staff</p>	<p>Los Angeles County Public Works</p>	<p>Maintains and operates of a wide range of local equipment and facilities and assists members of the public. This includes providing sufficient clean fresh water, reliable sewer services, street maintenance, storm drainage systems, street cleaning, street lights and traffic signals.</p>
<p>Floodplain Administrator</p>	<p>Los Angeles County Public Works</p>	<p>Enforces the floodplain management ordinance, ensures that new development proposals do not increase flood risk, and that new developments are not located below the 100-year flood level. In addition, the floodplain administrator is responsible for planning and managing flood risk reduction projects throughout the County.</p>
<p>Emergency Manager</p>	<p>Los Angeles County OEM</p>	<p>Maintains and updates the Los Angeles County Operational Area Emergency Response Plan for Unincorporated Los Angeles County. In addition, coordinates local response and relief activities in the Emergency Operation Center, and works closely with local, state, and federal partners to support planning and training and to provide information and coordinate assistance.</p>

Table 5-1 Human and Technical Resources for Hazard Mitigation

Staff/Personnel	Department / Agency	Principal Activities Related to Hazard Mitigation
Procurement Services Manager	Los Angeles County Internal Services Department	Provides a full range of municipal financial services, administers several licensing measures.
Comptroller	Los Angeles County Auditor – Controller	Provides financial services including grant financial services.
County Counsel	Los Angeles County Counsel	Provides legal services for the County.
Fire Chief	Los Angeles County Fire Department	Provides fire protection services including response, fire prevention, and mitigation activities for the County.
Sheriff	Los Angeles County Sheriff’s Department	Provides law enforcement services in the County.

Table 5-2. Financial Resources for Hazard Mitigation

Type	Administrator	Purpose	Amount
General Fund	Chief Executive Office	Program operations and specific projects.	Variable.
General Obligation Bonds	Los Angeles County Auditor - Controller	General obligation bonds are appropriately used for the construction and/or acquisition of improvements to real property broadly available to residents and visitors. Such facilities include but are not limited to: libraries, hospitals, parks, public safety facilities, and cultural and educational facilities.	Variable.
Special Tax and Revenue Bonds	Comptroller	Revenue bonds are used to finance capital projects that: 1) have an identified budgetary stream for repayment (e.g., specified fees, tax receipts); 2) generate project revenue but rely on a broader pledge of general fund revenues to reduce borrowing costs; or 3) finance the acquisition and installation of equipment for the local jurisdiction’s general governmental purposes.	Variable.
Vegetation Management Program	Cal FIRE	Cost-sharing program between Cal FIRE and private land owners, which focuses on the use of prescribed fire, mechanical, biological, and chemical means addressing wildland fire fuel hazards and other resource management issues on SRA and LRA lands	Project-specific.
Wildfire Emergency and Mitigation Funds	Cal FIRE	Administers funding from the FEMA, Bureau of Land Management, and U.S. Forest Service for certain types of wildfire emergency and mitigation funding	Project-specific.
California Residential Mitigation Program	California Earthquake Authority	Created by the California Earthquake Authority and the Governor’s Office of Emergency Services, Earthquake Brace + Bolt: Funds to Strengthen Your Foundation is the first incentive program offered by the California Residential Mitigation Program.	Project-specific.
Public Health Emergency Preparedness Cooperative Agreement.	Center for Disease Control	Funds are intended to upgrade state and local public health jurisdictions’ preparedness and response to bioterrorism, outbreaks of infectious diseases, and other public health threats and emergencies.	Grant award based on specific projects as they are identified.
Hazard Mitigation Grant Program	FEMA	Supports pre- and post-disaster mitigation plans and projects. Available to California communities after a presidentially declared disaster has occurred in California, administered by Cal OES.	Grant award based on specific projects as they are identified.
Pre-Disaster Mitigation grant program	FEMA	Supports pre-disaster mitigation plans and projects. Available on an annual basis as a nationally competitive grant, administered by Cal OES.	Grant award based on specific projects as they are identified.

Table 5-2. Financial Resources for Hazard Mitigation

Type	Administrator	Purpose	Amount
Flood Mitigation Assistance grant program	FEMA	Mitigates repetitively flooded structures and infrastructure. Available on an annual basis, distributed to California communities, administered by Cal OES.	Grant award based on specific projects as they are identified.
Homeland Security Preparedness Technical Assistance Program	FEMA/DHS	Build and sustain preparedness technical assistance activities in support of the four homeland security mission areas (i.e., prevention, protection, response, recovery) and homeland security program management.	Grant award based on specific projects as they are identified.
Assistance to Firefighters Grant Program	FEMA/U.S. Fire Administration	Provides equipment, protective gear, emergency vehicles, training, and other resources needed to protect the public and emergency personnel from fire and related hazards. Available to fire departments and nonaffiliated emergency medical services providers.	Grant awards based on specific projects as they are identified.
Land and Water Conservation Funds	U.S. Department of the Interior	Supports the protection of federal public lands and waters and voluntary conservation on private land.	Project-specific.
Community Action for a Renewed Environment	U.S. Environmental Protection Agency (EPA)	Through financial and technical assistance offers an innovative way for a community to organize and take action to reduce toxic pollution (e.g., stormwater) in its local environment. Through this program, a community creates a partnership that implements solutions to reduce releases of toxic pollutants and minimize people’s exposure to them.	Grant award based on specific projects as they are identified.
Clean Water State Revolving Fund	EPA	A loan program that provides low-cost financing to eligible entities on state and tribal lands for water quality projects, including all types of non-point source, watershed protection or restoration, estuary management projects, and more traditional municipal wastewater treatment projects.	Variable.
Community Block Grant Program Entitlement Communities Grants	U.S. Department of Housing and Urban Development	Acquisition of real property, relocation and demolition, rehabilitation of residential and non-residential structures, construction of public facilities and improvements, such as water and sewer facilities, streets, neighborhood centers, and the conversion of school buildings for eligible purposes.	Grant award based on specific projects as they are identified.

Table 5-3. Legal and Regulatory Resources for Hazard Mitigation

Name	Description	Hazards Addressed	Emergency Management	Potential to Affect Development
Los Angeles County 2035 General Plan (2015)	Describes hazard areas and lists goals and policies to reduce the potential risk of death, injuries, and economic damage resulting from natural and human-caused hazards.	Seismic and geotechnical, flood and inundation hazards, and fire hazards.	Mitigation, Preparedness, Response	Yes
Comprehensive Floodplain Management Plan (2016)	Reviews existing floodplain management programs in the County and recommends enhancements to them through 35 mitigation actions.	Flood	Mitigation	Yes
Los Angeles County Fire Department 2018 Strategic Fire Plan	Identifies and prioritizes pre-fire and post-fire management strategies and tactics meant to reduce the loss of values at risk in Los Angeles County.	Wildfire	Preparedness, Mitigation	Yes
Greater Los Angeles County Region Integrated Regional Water Management Plan (2014)	Identifies a comprehensive set of solutions to achieve the several objectives over the 25-year planning horizon including reducing flood risk in flood prone areas by either increasing protection or decreasing needs using integrated flood management approaches and adapting to and mitigate against climate change vulnerabilities.	Flood, Climate Change	Mitigation	Yes
Unincorporated County Community Climate Action Plan 2020 (2015)	Provides a roadmap for successfully implementing greenhouse gas reduction measures in the County. It is a component of the General Plan Air Quality Element, the Community Climate Action Plan actions are closely tied to many of the goals, policies, and programs of the General Plan, as well as to several other existing programs in the County.	Climate Change	Mitigation	Yes
County of Los Angeles Local Coastal Programs	Requires coastal cities and counties to establish coastal resource conservation and development programs.	Climate change, flood	Prevention, Mitigation	Yes
Los Angeles County Floodplain Management Ordinance	Promotes the public health, safety, and general welfare. Additionally, aims to minimize public and private losses due to flood conditions in specific areas by legally enforceable regulations applied uniformly throughout the community to all publicly and privately owned land in flood prone, mudslide (i.e., mudflow) or flood related erosion areas.	Flood	Mitigation	Yes

Table 5-3. Legal and Regulatory Resources for Hazard Mitigation

Name	Description	Hazards Addressed	Emergency Management	Potential to Affect Development
Hillside Management Area Ordinance & Hillside Design Guidelines	Required for development in Hillside Management Areas, which are defined as areas with 25% or greater natural slopes. The guidelines include specific and measurable design techniques that can be applied to residential, commercial, industrial, and other types of projects.	Landslide	Mitigation	Yes
Los Angeles County Fuel Modification Code	Requires the review aspects such as structure location and type of construction, topography, slope, amount and arrangement of vegetation, and overall site settings for a new structure or an addition that is equal to or greater than 50% of the existing square footage. The objective of this approval plan process is to create defensible space necessary for effective fire protection of homes in the FHSZs.	Wildfire	Preparedness, Mitigation	Yes
California Fire Plan	Requires the County of Los Angeles Fire Plan Unit to implement the California Fire Plan, a statewide framework for minimizing costs and losses from wildland fires. The Fire Plan Unit uses a GIS platform to identify high hazard/high value areas and communities at risk in the wildland-urban interface.	Wildfire	Preparedness, Mitigation	Yes
Los Angeles County Brush Clearance Program	Legally declares both improved and unimproved properties a public nuisance, and where necessary, requires the clearance of hazardous vegetation. These measures create “Defensible Space” for effective fire protection of property, life, and the environment. The Brush Clearance Program is a joint effort between the County of Los Angeles Fire Department and the County of Los Angeles Department of Agricultural Commissioner/Weights and Measures, Weed Hazard, and Pest Abatement Bureau (Weed Abatement Division).	Wildfire	Mitigation	No

5.2 NFIP PARTICIPATION

The NFIP aims to reduce the impact of flooding to residential and non-residential buildings. It does so by providing insurance to property owners and by encouraging communities to adopt and enforce floodplain management regulations. Los Angeles County entered the NFIP in 1980, and the first Los Angeles County DFIRM was issued on December 2, 1980. The Los Angeles County Public Works enforces the County’s floodplain management ordinance and participate in FEMA’s Community Assisted Visits, which occur on a 3- to 5-year cycle. According to Los Angeles County Public Works, as of September 30, 2018, there are 1,553 floodplain policies in force in Unincorporated Los Angeles County.

Los Angeles County also participates in the CRS program. The CRS program is a voluntary program for communities that engage in community floodplain management activities, which exceed the minimum NFIP standards. CRS communities benefit from reduced insurance rates and improved floodplain management programs. Los Angeles County is currently a Class 7 CRS community; therefore, homeowners who live in the SFHA can receive a 5 to 15 percent discount on their flood insurance policy.

5.3 MITIGATION GOALS

Mitigation goals are defined as general guidelines that explain what a community wants to achieve in terms of hazard and loss prevention. Goal statements are typically long-range, policy-oriented statements representing community-wide vision. The 2020 AHMP goals are as follows:

- Build a culture and practice of disaster resilience.
- Better plan for, respond to, and recover from, hazards and disasters, including climate change, drought, earthquake, dam failure, flood, landslide, tsunami, and wildfire that affect Los Angeles County.
- More successfully adapt to hazards and disasters, including climate change, drought, earthquake, dam failure, flood, landslide, tsunami, and wildfire that affect Los Angeles County.

5.4 POTENTIAL MITIGATION ACTIONS AND PROJECTS

Mitigation actions and projects help achieve the goals of the AHMP. For the 2020 AHMP, potential mitigation actions to be considered are listed below in **Table 5-4** and include the following hazard mitigation categories: education and awareness; natural systems protection; structure and infrastructure projects; preparedness and response; and local plans and regulations. This list addresses every hazard profiled in this plan and is based on the plan’s risk assessment as well as lessons learned from recent disasters. It was developed using: FEMA success stories and best management practices; FEMA job aids; local and regional plans and reports; and input from subject matter experts and pertinent Los Angeles County departments and agencies.

Table 5-4. Potential Mitigation Actions and Projects

Red Flag Warning Public Outreach	
Project Description	Create an online and offline public outreach campaign for Red Flag Warnings. Include information about: what is a Red Flag Warning; what land may be closed; and what individuals should do to be prepared as well as what activities should be avoided. Tailor outreach material to various target groups, including people experiencing homelessness, and older, younger and non-English speaking residents.
Type of Project	Education and Awareness Programs

Table 5-4. Potential Mitigation Actions and Projects

Hazard(s) Mitigated	Wildfire
Project Source	Red Flag Working Group and Los Angeles County Homeless Initiatives
Pros	Education can help reduce the risk of human-caused fires Public outreach is generally low-cost Public outreach to homeless individuals can help built rapport with County agencies
Cons	Maybe difficult to reach some target groups
Vegetation Management Program	
Project Description	Continue to implement the County’s Vegetation Management Program. The Los Angeles County Fire Department Vegetation Management Unit works closely with the Fire Plan Unit and the Air and Wildland Division’s Prescribed Fire Office to implement projects. The Vegetation Management Unit provides the State and County with required paperwork for prescribed burning, mechanical, biological and chemical treatment methods used in project areas.
Type of Project	Natural Systems Protection
Hazard(s) Mitigated	Wildfire
Project Source	Los Angeles County Fire Department
Pros	Program has been implemented in Los Angeles County for the last 40 years and are generally cost effective Can be used selectively to treat the most vulnerable areas
Cons	Often requires ongoing maintenance Can cause soil disturbance and increase sedimentation and erosion Prescribed fire and chemical application methods require close supervision
Fireproof Coating of Critical Assets	
Project Description	Fireproof coat critical facilities in Very High FHSZs which will allow structures to extend their strength in the event of a fire.
Type of Project	Structure and Infrastructure Projects
Hazard(s) Mitigated	Wildfire
Project Source	Los Angeles County Public Works
Pros	Generally cost-effective and non-toxic
Cons	None
Auxiliary Power for Critical Facilities	
Project Description	Determine which critical facilities require or improve upon auxiliary power in order to remain functional during de-energization or “Public Safety Power Shut-Offs” and/or general loss of power and install auxiliary power systems. Auxiliary power systems may include back-up generators, local Solar Photovoltaic plus storage, and microgrids.
Type of Project	Structure and Infrastructure Projects
Hazard(s) Mitigated	Wildfire specifically, but also applies to all hazards
Project Source	Los Angeles County Public Works and Los Angeles County Department of Public Health

Table 5-4. Potential Mitigation Actions and Projects

Pros	Provides emergency power to keep critical facilities operational and functional
Cons	Diesel generators can be expensive to operate and contribute to air pollution
Earthquake-Resistant Ductile Iron Pipes Replacement	
Project Description	Replace aging critical pipes in extreme or violent shaking hazard areas and Class IX and X landslide hazard areas to improve seismic reliability/safeguard critical water distribution lines against the potential destructive impacts of large-scale earthquakes and accompanying landslides.
Type of Project	Structural and Infrastructure Projects
Hazard(s) Mitigated	Landslides, Earthquakes
Project Source	Los Angeles County Public Works
Pros	Improves water reliability Restores those without service more rapidly
Cons	None
Watershed Ecosystem Restoration	
Project Description	Modernize existing flood control retention facilities to improve flood protection, water quality and ecological health. Potential projects include: Arroyo Seco and Compton Creek.
Type of Project	Natural Systems Protection
Hazard(s) Mitigated	Climate Change, Flood, Tsunami
Project Source	County of Los Angeles Repetitive Property Loss Area Analysis Progress Report (2017 – 2018), OurWaterLA
Pros	Reduces the risk of flooding to the surrounding neighborhoods Provides new recreational space and safety amenities
Cons	Additional studies needed to determine best approaches
Green Streets / Living Streets	
Project Description	Implement the Green Street Master Plan with the goal of identifying 110 feasible sites. A green street is a stormwater management approach that incorporates vegetation, soil, and engineered systems (e.g., permeable pavements) to slow, filter, and cleanse stormwater runoff from impervious surfaces. In addition to the traditional green street approach, incorporate “complete streets” design strategies to provide more room for emergency response vehicles and create defensible space in plaza areas and around buildings.
Type of Project	Natural Systems Protection, Preparedness and Response
Hazard(s) Mitigated	Stormwater/Flood, Climate Change
Project Source	Los Angeles County Public Works, EPA, OurCounty: Los Angeles Countywide Sustainability Plan
Pros	Protects water quality in rivers and streams by removing pollutants Replenishes groundwater supplies Absorbs carbon

Table 5-4. Potential Mitigation Actions and Projects

	Improves air quality and neighborhood aesthetics Improves pedestrian and bicycle safety
Cons	Requires selected site suitability to do utility conflicts, and geotechnical and environmental characteristics
Coordinated Data Collection and Database Systems	
Project Description	Create coordinated data collection and database system in which intake and assessment information can be entered in real time and can support multiple users at the same time. Components can include critical facilities and vulnerable populations.
Type of Project	Preparedness and Response
Hazard(s) Mitigated	All hazards
Project Source	Chief Information Office
Pros	Coordinated systems
Cons	Different data collection needs may require parallel databases
Brush Clearance Program	
Project Description	Expand the County’s Brush Clearance Program to include a grant fundable mitigation component for qualified low-income and/or older homeowners that have properties that are found to be non-compliant. Instead of warning property owners and imposing infractions for inadequate fire hazard reduction, Los Angeles County will work with the homeowner to develop and implement a fire reduction plan.
Type of Project	Natural Systems Protection, Preparedness and Response
Hazard(s) Mitigated	Wildfire
Project Source	Los Angeles County Fire Department
Pros	Proactive, not reactive approach to working with homeowners to reducing wildfire fuel hazards
Cons	Often requires ongoing maintenance
Wildland Urban-Interface Ordinance	
Project Description	Codifying development standards to guide development in the WUI areas that face a severe threat of wildfires.
Type of Project	Local Plans and Regulations
Hazard(s) Mitigated	Wildfire
Project Source	Draft Safety Element Update for Los Angeles County 2035 General Plan, Los Angeles County Sustainability Plan
Pros	Additional review of development in WUIs will enable best practices are incorporated in the project design.
Cons	Additional regulations may be perceived as too burdensome by property owners.
Urban Forest Management Plan	
Project Description	Create Urban Forest Management Plan for Los Angeles County with a well-defined scope that includes comprehensive tree inventory, assessment of tree health, identification of shade-poor neighborhoods, cost-benefit analysis of tree vs shade-

Table 5-4. Potential Mitigation Actions and Projects

	structure interventions, urban forest financing plan, and a plan for sustainable management.
Type of Project	Local Plans and Regulations
Hazard(s) Mitigated	Climate Change, Drought
Project Source	Los Angeles County Sustainability Plan (Los Angeles County Chief Sustainability Office), A Greater L.A. Climate Action Framework (L.A. Regional Collaborative for Climate Action and Sustainability, and Los Angeles County 2035 General Plan
Pros	Extreme heat is the greatest health threat to Los Angeles County residents. Providing shade will help mitigate the effects of extreme heat in disadvantaged neighborhoods. Residents from these communities may not have private vehicles and encounter problems traveling to cooling centers; they may also have limited access to air conditioning.
Cons	The inability of residents to pay for water to establish newly planted trees may hinder the establishment of an urban forest. Countywide water conservation measures during times of drought may also conflict with efforts to establish and maintain an urban forest. In such situations, shade structures may fulfill the same needs.
Community Wildfire Protection Plans	
Project Description	Continue to work with communities to develop CWPPs. CWPPs enable communities to plan how they will reduce the risk of wildfire by identifying strategic sites and methods for fuel reduction projects across the landscape and jurisdictional boundaries.
Type of Project	Local Plans and Regulations
Hazard(s) Mitigated	Wildfire
Project Source	Los Angeles County Fire Department 2018 Strategic Fire Plan
Pros	Opportunity to establish a localized definition and boundary for the WUI. Priority funding is often given to projects and treatment areas identified in a CWPP.
Cons	May be difficult to get collaboration from stakeholders.
Pre-Disaster Professional Support	
Project Description	Hire skilled professionals within each County department/agency that are dedicated to disaster planning.
Type of Project	Local Plans and Regulations, Preparedness and Response
Hazard(s) Mitigated	All hazards
Project Source	Los Angeles County Fire Department
Pros	Positions would work within their respective organizations and collaboratively with all County departments to ensure continuity of planning efforts
Cons	Funding
Fuel Trailer Project	
Project Description	Acquire 26 fuel trailers for last mile distribution. Each trailer to hold 2 days of fuel supply.
Type of Project	Preparedness and Response

Table 5-4. Potential Mitigation Actions and Projects

Hazard(s) Mitigated	Fire
Project Source	Los Angeles County Fire Department
Pros	Cognitive operations, building redundancy
Cons	None

5.5 MITIGATION ACTION PLANS

A mitigation action plan is a prioritized list of proposed mitigation projects and actions that a community hopes to implement to reduce its risks and vulnerabilities and achieves its goals. The priorities for the 2020 AHMP include projects and actions that will:

- Remedy or prevent a major health/safety hazard.
- Build a culture and practice of disaster resilience that will prevent new risks.
- Meet FEMA HMA grant criteria, including project eligibility, benefit cost review (i.e., reasonable costs or cost effectiveness), and performance period.

Mitigation actions that met two or more of the above prioritization criteria are listed in **Table 5-5** as high priority projects. Mitigation actions that met one prioritization criterion are listed in **Table 5-6** as medium priority projects.

Table 5-5. High Priority Mitigation Action Plan

Project Name	Implementation Details
Red Flag Warning Public Outreach	Department/Agency: LAHSA, Los Angeles County OEM, Los Angeles County Fire Department, and Los Angeles County Sheriff’s Department Potential Funding Source: FEMA grants Performance Period: 6 months development, implementation prior to every summer/fall
Vegetation Management Program	Department/Agency: Los Angeles County Fire Department Potential Funding Source: Cal FIRE, FEMA grants Performance Period: Ongoing
Fireproof Coating of Critical Facilities	Department/Agency: Los Angeles County Public Works and Los Angeles County Department of Public Health Potential Funding Source: Cal FIRE, FEMA grants Performance Period: 1-3 years
Auxiliary Power for Critical Facilities	Department/Agency: Los Angeles County Public Works Potential Funding Source: FEMA grants Performance Period: Ongoing
Earthquake-Resistant Ductile Iron Pipes Replacement	Department/Agency: Los Angeles County Public Works Potential Funding Source: FEMA grants Performance Period: Ongoing
Brush Clearance Program	Department/Agency: Los Angeles County Fire Department Potential Funding Source: Cal FIRE, FEMA grants Performance Period: Ongoing
Community Wildfire Protection Plans	Department/Agency: Los Angeles County Fire Department Potential Funding Source: Cal FIRE, FEMA grants Performance Period: Ongoing

Table 5-5. High Priority Mitigation Action Plan

Project Name	Implementation Details
Fuel Trailer Project	Department/Agency: Los Angeles County Fire Department Potential Funding Source: Cal FIRE, FEMA grants Performance Period: 1 year

Table 5-6. Medium Priority Mitigation Action Plan

Project Name	Implementation Details
Watershed Ecosystem Restoration	Department/Agency: Los Angeles County Public Works Potential Funding Source: EPA, U.S. Department of Interior grants Performance Period: 3-5 years
Green Streets / Living Streets	Department/Agency: Los Angeles County Public Works Potential Funding Source: EPA grants Performance Period: 3-5 years
Coordinated Data Collection & Database Systems	Department/Agency: Los Angeles County OEM Potential Funding Source: County funds Performance Period: 1-2years, Ongoing
Wildland Urban-Interface Ordinance	Department/Agency: Los Angeles County Department of Regional Planning, Los Angeles County Fire Department Potential Funding Source: County funds Performance Period: 6 months-1 year
Urban Forest Management Plan	Department/Agency: Chief Sustainability Office Potential Funding Source: County funds Performance Period: 1-2 years
Pre-Disaster Professional Support	Department/Agency: Los Angeles County Fire Department Potential Funding Source: County funds, FEMA grants Performance Period: Ongoing

5.6 PLAN INTEGRATION

With the exception of two mitigation actions that were implemented by the Los Angeles County Department of Coroner and the Los Angeles County Department of Regional Planning (**Section 6.2**), no other elements of the 2014 AHMP were incorporated with relevant Los Angeles County programs and plans due to a mismatch in update timeframes, lack of funding, and/or changes in department/agency personnel or programmatic priorities.

Moving forward, the 2020 AHMP will be integrated with other relevant County plans and programs as follows:

- The 2020 AHMP Project Manager will work with the Los Angeles County Public Works to incorporate the flood risk assessment and flood mitigation actions into the Comprehensive

Floodplain Management Plan. The Comprehensive Floodplain Management Plan is currently being updated and is expected to be completed in 2021.

- The 2020 AHMP Project Manager will work with the Los Angeles County Department of Regional Planning to ensure that the 2020 AHMP's hazard profiles, mitigation goals, and mitigation projects align with those addressed in the General Plan's Safety Element. The Safety Element is currently being updated and is expected to be completed in 2021.
- The 2020 AHMP Project Manager will work with the Los Angeles County OEM to ensure that the hazard profiles are included in the Los Angeles County Operational Area Emergency Response Plans and Annexes as they are updated.
- The Los Angeles County Fire Department will continue to conduct its vegetation management and brush clearance programs (**Table 5-5**) through its fire hazard reduction programs and the California Fire Plan.
- The Los Angeles County Public Works will implement green street/living street mitigation projects (**Table 5-6**) through its Green Streets Master Plan. It will also implement any watershed ecosystem restoration projects (**Table 5-6**) through its new Watershed Management Division.

6 PLAN REVIEW, EVALUATION, AND IMPLEMENTATION

Section 6—Plan Review, Evaluation, and Implementation addresses Element D of the Local Mitigation Plan Regulation Checklist.

Regulation Checklist – 44 CFR 201.6 Local Mitigation Plans
Element D: Plan Review, Evaluation, and Implementation
D1. Was the plan revised to reflect changes in development? (Requirement § 201.6(d)(3))
D2. Was the plan revised to reflect progress in local mitigation efforts? (Requirement § 201.6(d)(3))
D3. Was the plan revised to reflect changes in priorities? Requirement §201.6(d)(3))

6.1 CHANGES IN DEVELOPMENT

As noted in **Section 3.2**, the slowing population growth is in part due to the lack of housing. Most economists agree that building new housing is key to addressing the state’s housing crisis. During the drafting of the 2020 AHMP, nearly 28,000 units were under construction in Los Angeles County. In the City of Los Angeles, developers have targeted properties in older neighborhoods, rather than undeveloped land in the city’s outskirts. However, as the State of California pushes for greater growth in order to meet the governor’s goal of 3.5 million new units by 2025, there is growing concern that without land-use restrictions, new development will occur in fire-prone and other hazard areas of the County. These concerns are addressed within the 2020 AHMP mitigation strategy.

6.2 PROGRESS IN LOCAL MITIGATION EFFORTS

The 2014 AHMP Mitigation Actions Matrix was reviewed by each of the coordinating County agencies identified on the matrix in order to determine mitigation action status. Mitigation actions that were identified as not having been implemented or deferred were considered for **Table 5-4**. Mitigation actions that were identified as completed are shown in **Table 6-1**.

In addition, the consultant reviewed the County of Los Angeles Floodplain Management Plan 2018 Progress Report to determine mitigation action status. Flood mitigation actions that were listed as “no progress” were considered for **Table 5-4**.

Table 6-1. Completed Local Mitigation Efforts

Coordinating Agency	Project Description
Los Angeles County Department of Coroner	Purchased equipment to set up an off-site mobile morgue. This equipment was incorporated into the business continuity plan in case the main facility is unusable and would help to avoid unnecessary exposure of employees or the public to biological, radiological, or chemical agents.
Los Angeles County Department of Regional Planning	Updated building codes on January 1, 2017.

6.3 CHANGES IN PRIORITIES

The 2014 AHMP’s Mitigation Action Matrix was prioritized using the, technical, administrative, political, legal, environmental and economic (STAPLEE) method, which FEMA recommended (FEMA 386-9) as a

prioritization procedure in the early to mid-2000s. While the STAPLEE has been replaced in the 2020 AHMP by a more streamlined prioritization process, the priorities have not changed. These priorities are:

- To remedy or prevent a major health/safety hazard, a mitigation project must have political support.
- To build a culture and practice of disaster resilience, a mitigation project must have social support.
- To meet FEMA HMA grant criteria, a mitigation project must be technically, legally, environmentally, and economically feasible and the jurisdiction must have the administrative capabilities to implement it.

7 PLAN ADOPTION

Section 7—Plan Adoption addresses Element E of the Local Mitigation Plan Regulation Checklist.

Regulation Checklist – 44 CFR 201.6 Local Mitigation Plans
Element E: Plan Adoption
E1. Does the Plan include documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval? (Requirement §201.6(c)(5))
E2. For multi-jurisdictional plans, has each jurisdiction requesting approval of the plan documented formal plan adoption? (Requirement §201.6(c)(5))

7.1 FORMAL ADOPTION

The 2020 AHMP was formally adopted by the Los Angeles County Board of Supervisors via resolution on May 12, 2020. A scanned copy of the resolution is included as **Figure 7-2**. It will also be kept on file with the Los Angeles County OEM and additional be sent to Cal OES and FEMA.

ADOPTION RESOLUTION

MOTION BY SUPERVISOR KATHRYN BARGER

May 12, 2020

Approve the 2020 All-Hazards Mitigation Plan

The Federal Disaster Mitigation Act of 2000 (DMA 2000) requires that local jurisdictions have an approved mitigation plan in order to be eligible for mitigation project activities. The intent of the 2020 AHMP ensures that mitigation actions are based on sound planning processes that account for the risks and capabilities of communities within Los Angeles County. Mitigation plans form the foundation for a community’s long-term strategy to reduce disaster losses and break the cycle of disaster damage, reconstruction, and repeated damage.

Disasters can result in losses of life, property, and infrastructure, causing lasting devastation in communities. To reduce such losses, hazard mitigation planning exists in order to lessen the impacts of any type of disaster before it happens. In accordance with the Disaster Mitigation Act of 2000, the Federal Emergency Management Agency (FEMA) requires the County to maintain a Hazard Mitigation Plan that is updated every five years, in order to be eligible for disaster grant funds. This 2020 All-Hazards Mitigation Plan fulfills this requirement and replaces the 2014 plan version.

MOTION

SOLIS _____

RIDLEY-THOMAS _____

KUEHL _____

HAHN _____

BARGER _____

FEMA is authorized through federal legislation to provide funding for disaster relief, recovery and hazard mitigation planning. Hazard mitigation measures are any sustainable actions taken to reduce or eliminate long-term risk to people and property from future disasters. To support this, FEMA administers the Hazard Mitigation Grant Program (HMGP). The purpose of the HMGP is to help communities implement measures following a Presidential Major Disaster Declaration, which is authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act.

A current and approved plan for the Los Angeles County Operational Area is required to be eligible for all future federal hazard mitigation grant funding opportunities and will also demonstrate the County of Los Angeles' (County) ongoing commitment to pre-disaster hazard mitigation programs.

This updated Plan contains current community profiles, hazard and risk assessments, and corresponding mitigation strategies, and focuses on natural hazards and threats. It also articulates a mitigation action plan for reducing risks in unincorporated County, thereby also providing a valuable repository of information for County departments preparing applications for mitigation grants. The most recent addition to the Plan is the inclusion of information regarding climate change and how it may impact our hazards and threats.

The County's updated Plan is compliant with mitigation plan criteria and has successfully undergone a review by state and FEMA mitigation planners.

I, THEREFORE, MOVE that the Board of Supervisors approve the 2020 All-Hazards Mitigation Plan.

#

SUP:KB:ead



County of Los Angeles All-Hazards Mitigation Plan

Letter of Promulgation

To: Officials, Employees, and Residents of Los Angeles County

Preservation of life and property is an inherent responsibility of local, state, and federal government. The County of Los Angeles updated the 2020 All-Hazards Mitigation Plan (AHMP) to cover mitigation responsibilities of County departments as well as the unincorporated communities.

While no plan can guarantee prevention of death and destruction, well-developed plans, carried out by knowledgeable and well-trained personnel, can decrease the amount loss experienced after an emergency. The Federal Disaster Mitigation Act of 2000 (DMA 2000) requires that local jurisdictions have an updated mitigation plan in order to be eligible for mitigation project activities. The intent of the 2020 AHMP also ensures that mitigation actions are based on sound planning processes that account for the risks and capabilities of communities within Los Angeles County. Mitigation plans form the foundation for a community's long-term strategy to reduce disaster losses and break the cycle of disaster damage, reconstruction, and repeated damage.

The AHMP should be reviewed on an annual basis and approved every five years. The AHMP conforms to the requirements set forth by the Federal Emergency Management Agency (FEMA) and the California Governor's Office of Emergency Services (Cal OES). The Los Angeles County Board of Supervisors gives its full support to the 2020 All-Hazards Mitigation Plan and urges all officials, employees, and residents, individually and collectively, to share in our commitment to the effective preparedness and response to disasters.

This letter promulgates the 2020 All-Hazards Mitigation Plan which becomes effective upon approval by the Los Angeles County Board of Supervisors

Signed: Kathryn Barger
Kathryn Barger, Chair
Los Angeles County Board of Supervisors

Date: 5.18.20

APPENDIX A—PLANNING PROCESS

From: Stephanie Kim

Sent: Tuesday, August 20, 2019 2:44 PM

To: XXX@monosheriff.org; XXX@ocsd.org; XXX@rivco.org; XXX@ontarioca.gov; XXX@inyocounty.us; XXX@co.imperial.ca.us; XXX@laquintaca.gov; XXX@sbcoem.org; XXX@mono.ca.gov; XXX@lcf.ca.gov; XXX@sa.ocgov.com; XXX@rivco.org; XXX@cbc-city.org; XXX@inyocounty.us; XXX@cityofbishop.com; XXX@sandiego.gov; XXX@rivco.org; XXX@octa.net; XXX@sbc-sd.org; XXX@sandiego.gov; XXX@octa.net; XXX@rcoe.us; XXX@dgs.ca.gov; XXX@sbc-sd.org; XXX@lawa.org; XXX@rivco.org; XXX@lausd.net; XXX@inyocounty.us; XXX@octa.net; XXX@ranchomirageca.gov; XXX@rivco.org; XXX@inyocounty.us; XXX@sbccd.edu; XXX@morongo-nsn.gov; XXX@noaa.gov; XXX@cityofredlands.org; XXX@morongo-nsn.gov; XXX@coachella.org; XXX@ocsd.org; XXX@sbc-sd.org; XXX@cityoftemecula.org; XXX@santabarbaraca.gov; XXX@mwdh2o.com; XXX@sbc-sd.org; XXX@kerncountyfire.org

Cc: XXX@ceooem.lacounty.gov

Subject: Los Angeles County Hazard Mitigation Plan Update

Dear Stakeholders,

We are reaching out to let you know that the Los Angeles County Office of Emergency Management is in the process of updating its' All-Hazards Mitigation Plan. I'm attaching our public outreach flyer for your information. We will send out an additional email when our draft plan goes out to public comment later this fall. If you have any questions or would like to be part of the plan update process, please contact me!

Emily Montanez

emontanez@ceooem.lacounty.gov

(323) 980-2813

Stephanie Kim
Academic Intern
LA County CEO Office of Emergency Management

2019 County of Los Angeles All-Hazards Mitigation Plan



The Los Angeles County Office of Emergency Management is updating the County's All-Hazards Mitigation Plan! Over the next few months, we will re-assess risks posed by natural disasters and review and revise existing strategies as well as develop new ones to protect life and property future events.

Natural disasters addressed in our plan include: climate change, dam failure, drought, flood, earthquake, landslide, tsunami, and wildfire.

Once our plan is completed and approved by FEMA, the County will be re-eligible to apply for and receive certain types of non-emergency disaster assistance, including funding for mitigation projects identified in our plan.

To learn more about hazard mitigation planning, please visit: <https://www.fema.gov/hazard-mitigation-planning>.

To learn more about our plan and/or participate in our planning process, please visit our website lacounty.gov/emergency or our Twitter account [@ReadyLACounty](https://twitter.com/ReadyLACounty).





Ready Los Angeles County
@ReadyLACounty

Official Account of the Los Angeles County Office of Emergency Management for disaster & preparedness information. Please note change @LACOOEM to @ReadyLACounty

Los Angeles County
LACOA.org
Joined January 2012

 **Ready Los Angeles County**
@ReadyLACounty [Follow](#)

We are updating the County of Los Angeles All-Hazards Mitigation Plan in order to help protect life and property from future disaster events. To learn more about our plan, please follow our Twitter account [@ReadyLACounty](#).



12:03 PM - 6 Aug 2019

2 Retweets 4 Likes 

  2  4





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- LACOA.org
- Joined January 2012



Ready Los Angeles County

@ReadyLACounty



Our updated All-Hazards Mitigation Plan will address climate change, dam failure, drought, flood, earthquake, landslide, tsunami, and wildfire. What natural hazard concerns you the most?



11:36 AM - 21 Aug 2019

2 Retweets 1 Like



Reply Retweet 2 Like 1





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12:03 PM - 6 Aug 2019

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2019 AHMP - Annual Review Worksheet

HMP Section	Questions	Yes	No	Comments
PLANNING PROCESS	Has your County department/agency (or other type of organization) done any public outreach activities regarding the AHMP or a mitigation project? If yes, please describe.			
	Has your County department/agency (or other type of organization) integrated any of the AHMP's elements into other plans or policies? If yes, please describe.			
HAZARD IDENTIFICATION	Has a disaster occurred in this reporting period that affected your department/agency (or other type of organization)?			
	Do you know of new hazard studies, reports and/or mapping available for Los Angeles County? If so, what are they?			
RISK ASSESSMENT	Does your County department/agency have any new critical assets that should be included in the 2024 AHMP risk assessment?			
	Have there been changes in development trends that could create additional risks?			
MITIGATION STRATEGY	Are there different or additional resources (financial, technical, and human) that are now available for mitigation planning?			
	Should new mitigation actions be added?			

2019 AHMP - Mitigation Project Progress Report

Progress Report Period From (date):		To (date):	
Project Title:			
Project ID:			
Description of Project:			
Implementing Department/Agency:			
Supporting Department/Agencies:			
Contact Name:			
Contact E-mail:			
Contact Number:			
Grant/Finance Administrator:			
Total Project Cost:			
Anticipated Cost Overrun/Underrun:			
Date of Project Approval:			
Project Start Date:			
Anticipated Completion Date:			

Summary of Progress of Project for this Reporting Period

1. What was accomplished during this reporting period?

2. What obstacles, problems, or delays did the project encounter, if any?

3. How were the problems resolved?

APPENDIX B—COMMUNITY PROFILE

Table B-1. Los Angeles County Critical Facilities

Department / Agency	Facility Name
Los Angeles County Animal Care & Control	Agoura Animal Care Center
Los Angeles County Animal Care & Control	Baldwin Park Animal Care Center
Los Angeles County Animal Care & Control	Carson Animal Care Center
Los Angeles County Animal Care & Control	Castaic Animal Care Center (Castaic)
Los Angeles County Animal Care & Control	Downey Animal Care Center
Los Angeles County Animal Care & Control	Lancaster County Animal Care Center
Los Angeles County Animal Care & Control	Palmdale Animal Care Center
Los Angeles County Fire Department	Bob Hope Airport Fire Department
Los Angeles County Fire Department	City of Alhambra Fire Department - Training Facility
Los Angeles County Fire Department	City of Alhambra Fire Department Station 71 - Headquarters
Los Angeles County Fire Department	City of Alhambra Fire Department Station 72 - Southeast District
Los Angeles County Fire Department	City of Alhambra Fire Department Station 73 - Northwest
Los Angeles County Fire Department	City of Alhambra Fire Department Station 74 - Southwest
Los Angeles County Fire Department	City of Arcadia Fire Department Station 105
Los Angeles County Fire Department	City of Arcadia Fire Department Station 106 - Headquarters
Los Angeles County Fire Department	City of Arcadia Fire Department Station 107
Los Angeles County Fire Department	City of Avalon Fire Department
Los Angeles County Fire Department	City of Beverly Hills Fire Department Station 1 - Headquarters
Los Angeles County Fire Department	City of Beverly Hills Fire Department Station 2
Los Angeles County Fire Department	City of Beverly Hills Fire Department Station 3
Los Angeles County Fire Department	City of Burbank Fire Department Station 11 - Headquarters
Los Angeles County Fire Department	City of Burbank Fire Department Station 12
Los Angeles County Fire Department	City of Burbank Fire Department Station 13
Los Angeles County Fire Department	City of Burbank Fire Department Station 14
Los Angeles County Fire Department	City of Burbank Fire Department Station 15
Los Angeles County Fire Department	City of Burbank Fire Department Station 16
Los Angeles County Fire Department	City of Compton Fire Department Station 1 - Headquarters
Los Angeles County Fire Department	City of Compton Fire Department Station 2
Los Angeles County Fire Department	City of Compton Fire Department Station 3
Los Angeles County Fire Department	City of Compton Fire Department Station 4
Los Angeles County Fire Department	City of Downey Fire Department Station 1 - Headquarters
Los Angeles County Fire Department	City of Downey Fire Department Station 2
Los Angeles County Fire Department	City of Downey Fire Department Station 3
Los Angeles County Fire Department	City of Downey Fire Department Station 4
Los Angeles County Fire Department	City of Glendale Fire Department Station 21
Los Angeles County Fire Department	City of Glendale Fire Department Station 22
Los Angeles County Fire Department	City of Glendale Fire Department Station 23
Los Angeles County Fire Department	City of Glendale Fire Department Station 24
Los Angeles County Fire Department	City of Glendale Fire Department Station 25
Los Angeles County Fire Department	City of Glendale Fire Department Station 26
Los Angeles County Fire Department	City of Glendale Fire Department Station 27
Los Angeles County Fire Department	City of Glendale Fire Department Station 28
Los Angeles County Fire Department	City of Long Beach Fire Department - Beach Operations
Los Angeles County Fire Department	City of Long Beach Fire Department - Headquarters
Los Angeles County Fire Department	City of Long Beach Fire Department Station 1
Los Angeles County Fire Department	City of Long Beach Fire Department Station 10
Los Angeles County Fire Department	City of Long Beach Fire Department Station 11
Los Angeles County Fire Department	City of Long Beach Fire Department Station 12
Los Angeles County Fire Department	City of Long Beach Fire Department Station 13
Los Angeles County Fire Department	City of Long Beach Fire Department Station 14
Los Angeles County Fire Department	City of Long Beach Fire Department Station 15
Los Angeles County Fire Department	City of Long Beach Fire Department Station 16
Los Angeles County Fire Department	City of Long Beach Fire Department Station 17
Los Angeles County Fire Department	City of Long Beach Fire Department Station 18
Los Angeles County Fire Department	City of Long Beach Fire Department Station 19

Table B-1. Los Angeles County Critical Facilities

Department / Agency	Facility Name
Los Angeles County Fire Department	San Gabriel Fire Department Station 1 - Headquarters
Los Angeles County Fire Department	San Gabriel Fire Department Station 2
Los Angeles County Fire Department	San Marino Fire Department
Los Angeles County Fire Department	Sierra Madre Volunteer Fire Department
Los Angeles County Fire Department	South Pasadena Fire Department
Los Angeles County Fire Department	The City of El Segundo Fire Department Station 1 - Headquarters
Los Angeles County Fire Department	The City of El Segundo Fire Department Station 2
Los Angeles County Fire Department	Torrance Fire Department Fire Station 1 - Headquarters
Los Angeles County Fire Department	Torrance Fire Department Fire Station 2
Los Angeles County Fire Department	Torrance Fire Department Fire Station 3
Los Angeles County Fire Department	Torrance Fire Department Fire Station 4
Los Angeles County Fire Department	Torrance Fire Department Fire Station 5
Los Angeles County Fire Department	Torrance Fire Department Fire Station 6
Los Angeles County Fire Department	Vernon Fire Department
Los Angeles County Health Services	Antelope Valley Health Center
Los Angeles County Health Services	Bellflower Health Center
Los Angeles County Health Services	Central Public Health Center
Los Angeles County Health Services	Curtis R. Tucker Health Center
Los Angeles County Health Services	Dollarhide Health Center
Los Angeles County Health Services	East Los Angeles Health Center
Los Angeles County Health Services	East San Gabriel Valley Health Center
Los Angeles County Health Services	Edward R. Roybal Comprehensive Health Center
Los Angeles County Health Services	El Monte Comprehensive Health Center
Los Angeles County Health Services	Glendale Health Center
Los Angeles County Health Services	H. Claude Hudson Comprehensive Health Center
Los Angeles County Health Services	Harbor-UCLA Medical Center
Los Angeles County Health Services	High Desert Regional Health Center
Los Angeles County Health Services	Hubert H. Humphrey Comprehensive Health Center
Los Angeles County Health Services	La Puente Health Center
Los Angeles County Health Services	LAC + USC Medical Center
Los Angeles County Health Services	Lake Los Angeles Community Clinic
Los Angeles County Health Services	Littlerock Community Clinic
Los Angeles County Health Services	Long Beach Comprehensive Health Center
Los Angeles County Health Services	Martin Luther King, Jr. Outpatient Center
Los Angeles County Health Services	Mid Valley Comprehensive Health Center
Los Angeles County Health Services	Olive View-UCLA Medical Center
Los Angeles County Health Services	Rancho Los Amigos National Rehabilitation Center
Los Angeles County Health Services	San Fernando Health Center
Los Angeles County Health Services	South Valley Health Center
Los Angeles County Health Services	Torrance Health Center
Los Angeles County Health Services	Vaughn School Based Health Center
Los Angeles County Health Services	West Valley Health Center
Los Angeles County Health Services	Wilmington Health Center
Los Angeles County Library	A C Bilbrew Library
Los Angeles County Library	Acton Agua Dulce Library
Los Angeles County Library	Agoura Hills Library
Los Angeles County Library	Alondra Library
Los Angeles County Library	Angelo M. Iacoboni Library
Los Angeles County Library	Anthony Quinn Library
Los Angeles County Library	Artesia Library
Los Angeles County Library	Avalon Library
Los Angeles County Library	Baldwin Park Library
Los Angeles County Library	Bell Gardens Library
Los Angeles County Library	Bell Library
Los Angeles County Library	Carson Library

Table B-1. Los Angeles County Critical Facilities

Department / Agency	Facility Name
Los Angeles County Library	Castaic Library
Los Angeles County Library	Charter Oak Library
Los Angeles County Library	Chet Holifield Library
Los Angeles County Library	City Terrace Library
Los Angeles County Library	Claremont Helen Renwick Library
Los Angeles County Library	Clifton M. Brakensiek Library
Los Angeles County Library	Compton Library
Los Angeles County Library	Cudahy Library
Los Angeles County Library	Culver City Julian Dixon Library
Los Angeles County Library	Diamond Bar Library
Los Angeles County Library	Dr. Martin Luther King, Jr. Library
Los Angeles County Library	Duarte Library
Los Angeles County Library	East Los Angeles Library
Los Angeles County Library	East Rancho Dominguez Library
Los Angeles County Library	El Camino Real Library
Los Angeles County Library	El Monte Library
Los Angeles County Library	Florence Express Library
Los Angeles County Library	Gardena Mayme Dear Library
Los Angeles County Library	George Nye Jr. Library
Los Angeles County Library	Graham Library
Los Angeles County Library	Hacienda Heights Library
Los Angeles County Library	Hawaiian Gardens Library
Los Angeles County Library	Hawthorne Library
Los Angeles County Library	Hermosa Beach Library
Los Angeles County Library	Hollydale Library
Los Angeles County Library	Huntington Park Library
Los Angeles County Library	La Canada Flintridge Library
Los Angeles County Library	La Crescenta Library
Los Angeles County Library	La Mirada Library
Los Angeles County Library	La Puente Library
Los Angeles County Library	La Verne Library
Los Angeles County Library	Lake Los Angeles Library
Los Angeles County Library	Lancaster Library
Los Angeles County Library	Lawndale Library
Los Angeles County Library	Leland R. Weaver Library
Los Angeles County Library	Lennox Library
Los Angeles County Library	Littlerock Library
Los Angeles County Library	Live Oak Library
Los Angeles County Library	Lloyd Taber-Marina del Rey Library
Los Angeles County Library	Lomita Library
Los Angeles County Library	Los Nietos Library
Los Angeles County Library	Lynwood Library
Los Angeles County Library	Malibu Library
Los Angeles County Library	Manhattan Beach Library
Los Angeles County Library	Masao W. Satow Library
Los Angeles County Library	Maywood Cesar Chavez Library
Los Angeles County Library	Montebello Library
Los Angeles County Library	Norwalk Library
Los Angeles County Library	Norwood Library
Los Angeles County Library	Paramount Library
Los Angeles County Library	Pico Rivera Library
Los Angeles County Library	Quartz Hill Library
Los Angeles County Library	Rivera Library
Los Angeles County Library	Rosemead Library
Los Angeles County Library	Rowland Heights Library

Table B-1. Los Angeles County Critical Facilities

Department / Agency	Facility Name
Los Angeles County Library	San Dimas Library
Los Angeles County Library	San Fernando Library
Los Angeles County Library	San Gabriel Library
Los Angeles County Library	Sorensen Library
Los Angeles County Library	South El Monte Library
Los Angeles County Library	South Whittier Library
Los Angeles County Library	Stevenson Ranch Library
Los Angeles County Library	Sunkist Library
Los Angeles County Library	Temple City Library
Los Angeles County Library	Topanga Library
Los Angeles County Library	View Park Bebe Moore Campbell Library
Los Angeles County Library	Walnut Library
Los Angeles County Library	West Covina Library
Los Angeles County Library	West Hollywood Library
Los Angeles County Library	Westlake Village Library
Los Angeles County Library	Willowbrook Library
Los Angeles County Library	Wiseburn Library
Los Angeles County Library	Woodcrest Library
LACA & MNH	La Brea Tarpits
LACA & MNH	Los Angeles County Museum of Art
LACA & MNH	Natural History Museum
LACA & MNH	William S. Hart Museum
Los Angeles County Office of Education	Afflerbaugh-Paige Camp
Los Angeles County Office of Education	Alma Fuerte Public
Los Angeles County Office of Education	Animo City of Champions Charter High
Los Angeles County Office of Education	Aspire Antonio Maria Lugo Academy
Los Angeles County Office of Education	Aspire Ollin University Preparatory Academy
Los Angeles County Office of Education	Central Juvenile Hall
Los Angeles County Office of Education	Da Vinci RISE High
Los Angeles County Office of Education	Environmental Charter Middle
Los Angeles County Office of Education	Environmental Charter Middle - Inglewood
Los Angeles County Office of Education	Intellectual Virtues Academy
Los Angeles County Office of Education	International Polytechnic High
Los Angeles County Office of Education	Jardin de la Infancia
Los Angeles County Office of Education	Kirby, Dorothy Camp
Los Angeles County Office of Education	L.A. County High School for the Arts
Los Angeles County Office of Education	LA's Promise Charter High #1
Los Angeles County Office of Education	LA's Promise Charter Middle #1
Los Angeles County Office of Education	Lashon Academy
Los Angeles County Office of Education	Los Angeles County Special Education
Los Angeles County Office of Education	Los Angeles International Charter High
Los Angeles County Office of Education	Los Padrinos Juvenile Hall
Los Angeles County Office of Education	Magnolia Science Academy
Los Angeles County Office of Education	Magnolia Science Academy 2
Los Angeles County Office of Education	Magnolia Science Academy 3
Los Angeles County Office of Education	Magnolia Science Academy 5
Los Angeles County Office of Education	McNair Camp
Los Angeles County Office of Education	Nidorf, Barry J.
Los Angeles County Office of Education	North Valley Military Institute College Preparatory Academy
Los Angeles County Office of Education	Odyssey Charter
Los Angeles County Office of Education	Onizuka Camp
Los Angeles County Office of Education	Optimist Charter
Los Angeles County Office of Education	Phoenix Academy Residential Education Center
Los Angeles County Office of Education	Renaissance County Community
Los Angeles County Office of Education	Road to Success Academy at Campus Kilpatrick

Table B-1. Los Angeles County Critical Facilities

Department / Agency	Facility Name
Los Angeles County Office of Education	Rockey, Glenn Camp
Los Angeles County Office of Education	Scott, Joseph Camp
Los Angeles County Office of Education	Soleil Academy Charter
Los Angeles County Office of Education	Valiente College Preparatory Charter
Los Angeles County – Other (offices)	1000 S. Fremont Ave.
Los Angeles County – Other (offices)	1055 Wilshire Blvd.
Los Angeles County – Other (offices)	1100 North Eastern Ave.
Los Angeles County – Other (offices)	1104 N. Mission Rd.
Los Angeles County – Other (offices)	12300 Lower Azusa Rd.
Los Angeles County – Other (offices)	12400 Imperial Highway
Los Angeles County – Other (offices)	12860 Crossroads Parkway South
Los Angeles County – Other (offices)	1320 North Eastern Ave.
Los Angeles County – Other (offices)	13837 Fiji Way
Los Angeles County – Other (offices)	1816 S. Figueroa
Los Angeles County – Other (offices)	210 W. Temple St.
Los Angeles County – Other (offices)	211 W. Temple St.
Los Angeles County – Other (offices)	313 N Figueroa St.
Los Angeles County – Other (offices)	3175 West Sixth St.
Los Angeles County – Other (offices)	320 West Temple St.
Los Angeles County – Other (offices)	425 Shatto Place
Los Angeles County – Other (offices)	550 South Vermont Ave.
Los Angeles County – Other (offices)	5770 S. Eastern Ave.
Los Angeles County – Other (offices)	5898 Cherry Ave.
Los Angeles County – Other (offices)	5905 Wilshire Blvd.
Los Angeles County – Other (offices)	700 W. Main St.
Los Angeles County – Other (offices)	7400 East Imperial Highway
Los Angeles County – Other (offices)	900 South Fremont Ave.
Los Angeles County – Other (offices)	Kenneth Hahn Hall of Administration
Los Angeles County Parks & Recreation	Acton Park
Los Angeles County Parks & Recreation	Adventure Park
Los Angeles County Parks & Recreation	Adventure Park
Los Angeles County Parks & Recreation	Allen J. Martin Park
Los Angeles County Parks & Recreation	Alondra Community Regional Park
Los Angeles County Parks & Recreation	Alondra Community Regional Park
Los Angeles County Parks & Recreation	Amelia Mayberry Park
Los Angeles County Parks & Recreation	Amelia Mayberry Park
Los Angeles County Parks & Recreation	Amigo Park
Los Angeles County Parks & Recreation	Arcadia Community Regional Park
Los Angeles County Parks & Recreation	Arcadia Community Regional Park
Los Angeles County Parks & Recreation	Athens Park
Los Angeles County Parks & Recreation	Athens Park
Los Angeles County Parks & Recreation	Bassett Park
Los Angeles County Parks & Recreation	Bassett Park
Los Angeles County Parks & Recreation	Bassett Park
Los Angeles County Parks & Recreation	Belvedere Community Regional Park
Los Angeles County Parks & Recreation	Belvedere Community Regional Park
Los Angeles County Parks & Recreation	Bodger Park
Los Angeles County Parks & Recreation	Carolyn Rosas Park
Los Angeles County Parks & Recreation	Castaic Regional Sports Complex
Los Angeles County Parks & Recreation	Castaic Regional Sports Complex
Los Angeles County Parks & Recreation	Charles S. Farnsworth Park
Los Angeles County Parks & Recreation	Charles S. Farnsworth Park
Los Angeles County Parks & Recreation	Charles S. Farnsworth Park
Los Angeles County Parks & Recreation	Charles S. Farnsworth Park
Los Angeles County Parks & Recreation	Charter Oak Park

Table B-1. Los Angeles County Critical Facilities

Department / Agency	Facility Name
Los Angeles County Parks & Recreation	City Terrace Park
Los Angeles County Parks & Recreation	City Terrace Park
Los Angeles County Parks & Recreation	Col. Leon H. Washington Park
Los Angeles County Parks & Recreation	Col. Leon H. Washington Park
Los Angeles County Parks & Recreation	Crescenta Valley Community Regional Park
Los Angeles County Parks & Recreation	Crescenta Valley Community Regional Park
Los Angeles County Parks & Recreation	Dalton Park
Los Angeles County Parks & Recreation	Del Aire Park
Los Angeles County Parks & Recreation	Del Aire Park
Los Angeles County Parks & Recreation	Devil's Punchbowl Natural Area and Nature Center
Los Angeles County Parks & Recreation	Dexter Park
Los Angeles County Parks & Recreation	Dexter Park
Los Angeles County Parks & Recreation	Don Knabe Community Regional Park
Los Angeles County Parks & Recreation	Don Knabe Community Regional Park
Los Angeles County Parks & Recreation	Don Knabe Community Regional Park
Los Angeles County Parks & Recreation	East Rancho Dominguez Park
Los Angeles County Parks & Recreation	East Rancho Dominguez Park
Los Angeles County Parks & Recreation	East Rancho Dominguez Park
Los Angeles County Parks & Recreation	El Cariso Community Regional Park
Los Angeles County Parks & Recreation	El Cariso Community Regional Park
Los Angeles County Parks & Recreation	El Cariso Community Regional Park
Los Angeles County Parks & Recreation	Enterprise Park
Los Angeles County Parks & Recreation	Eugene A. Obregon Park
Los Angeles County Parks & Recreation	Eugene A. Obregon Park
Los Angeles County Parks & Recreation	Franklin D. Roosevelt Park
Los Angeles County Parks & Recreation	Franklin D. Roosevelt Park
Los Angeles County Parks & Recreation	George Lane Park
Los Angeles County Parks & Recreation	George Lane Park
Los Angeles County Parks & Recreation	George Washington Carver Park
Los Angeles County Parks & Recreation	Hacienda Heights Community and Rec Center
Los Angeles County Parks & Recreation	Hacienda Heights Community and Rec Center
Los Angeles County Parks & Recreation	Hacienda Heights Community and Rec Center
Los Angeles County Parks & Recreation	Helen Keller Park
Los Angeles County Parks & Recreation	Hollywood Bowl
Los Angeles County Parks & Recreation	Jackie Robinson Park
Los Angeles County Parks & Recreation	Jackie Robinson Park
Los Angeles County Parks & Recreation	Jesse Owens Community Regional Park
Los Angeles County Parks & Recreation	Jesse Owens Community Regional Park
Los Angeles County Parks & Recreation	John Anson Ford Amphitheatre
Los Angeles County Parks & Recreation	John Anson Ford Amphitheatre
Los Angeles County Parks & Recreation	Kenneth Hahn State Recreation Area
Los Angeles County Parks & Recreation	Ladera Park
Los Angeles County Parks & Recreation	Ladera Park
Los Angeles County Parks & Recreation	Ladera Park
Los Angeles County Parks & Recreation	Lennox Park
Los Angeles County Parks & Recreation	Lennox Park
Los Angeles County Parks & Recreation	Lennox Park
Los Angeles County Parks & Recreation	Loma Alta Park
Los Angeles County Parks & Recreation	Loma Alta Park
Los Angeles County Parks & Recreation	Los Angeles County Arboretum and Botanic Garden
Los Angeles County Parks & Recreation	Manzanita Park
Los Angeles County Parks & Recreation	Mary M. Bethune Park
Los Angeles County Parks & Recreation	Mary M. Bethune Park
Los Angeles County Parks & Recreation	Mona Park
Los Angeles County Parks & Recreation	Mona Park

Table B-1. Los Angeles County Critical Facilities

Department / Agency	Facility Name
Los Angeles County Parks & Recreation	Pamela County Park
Los Angeles County Parks & Recreation	Pamela County Park
Los Angeles County Parks & Recreation	Pathfinder Community Regional Park
Los Angeles County Parks & Recreation	Pearblossom County Park
Los Angeles County Parks & Recreation	Peter F Schabarum Regional County Park
Los Angeles County Parks & Recreation	Rimgrove Park
Los Angeles County Parks & Recreation	Rowland Heights Park
Los Angeles County Parks & Recreation	Roy Campanella Park
Los Angeles County Parks & Recreation	Ruben F Salazar Park
Los Angeles County Parks & Recreation	Ruben F Salazar Park
Los Angeles County Parks & Recreation	Ruben F Salazar Park
Los Angeles County Parks & Recreation	San Angelo Park
Los Angeles County Parks & Recreation	San Fernando Recreation Park and Aquatic Center
Los Angeles County Parks & Recreation	Saybrook Park
Los Angeles County Parks & Recreation	Sorensen Park
Los Angeles County Parks & Recreation	South Coast Botanic Garden
Los Angeles County Parks & Recreation	Stephen Sorensen Park
Los Angeles County Parks & Recreation	Sunshine Park
Los Angeles County Parks & Recreation	Ted Watkins Memorial Park
Los Angeles County Parks & Recreation	Ted Watkins Memorial Park
Los Angeles County Parks & Recreation	Tesoro Adobe Historic Park
Los Angeles County Parks & Recreation	Val Verde Community Regional Park
Los Angeles County Parks & Recreation	Val Verde Community Regional Park
Los Angeles County Parks & Recreation	Valleydale Park
Los Angeles County Parks & Recreation	Valleydale Park
Los Angeles County Parks & Recreation	Vasquez Rocks Natural Area and Nature Center
Los Angeles County Parks & Recreation	Veterans Memorial Community Regional Park
Los Angeles County Parks & Recreation	Victoria Community Regional Park
Los Angeles County Parks & Recreation	Victoria Community Regional Park
Los Angeles County Parks & Recreation	Walnut Nature Park
Los Angeles County Parks & Recreation	Whittier Narrows Recreation Area
Los Angeles County Parks & Recreation	William S. Hart Regional Park
Los Angeles County Parks & Recreation	William Steinmetz Park
Los Angeles County Parks & Recreation	William Steinmetz Park
Los Angeles County Parks & Recreation	William Steinmetz Park
Los Angeles County Public Health	Antelope Valley Health Center
Los Angeles County Public Health	Central Public Health Center
Los Angeles County Public Health	Curtis R. Tucker Health Center
Los Angeles County Public Health	Glendale Health Center
Los Angeles County Public Health	Hollywood/Wilshire Public Health Center
Los Angeles County Public Health	Martin Luther King, Jr. Center for Public Health
Los Angeles County Public Health	Monrovia Public Health Center
Los Angeles County Public Health	North Hollywood Public Health Center
Los Angeles County Public Health	Pacoima Public Health Center
Los Angeles County Public Health	Pomona Public Health Center
Los Angeles County Public Health	Ruth-Temple Public Health Center
Los Angeles County Public Health	Simms/Mann Health and Wellness Center
Los Angeles County Public Health	Torrance Public Health Center
Los Angeles County Public Health	Whittier Public Health Center
Los Angeles County Public Works	Big Dalton Dam
Los Angeles County Public Works	Big Tujunga Dam
Los Angeles County Public Works	Brackett Field Airport
Los Angeles County Public Works	Cogswell Dam
Los Angeles County Public Works	Compton/Woodley Airport
Los Angeles County Public Works	Devil's Gate Dam

Table B-1. Los Angeles County Critical Facilities

Department / Agency	Facility Name
Los Angeles County Public Works	Eaton Wash Dam
Los Angeles County Public Works	General Wm. J. Fox Airfield
Los Angeles County Public Works	Live Oak Dam
Los Angeles County Public Works	Morris Dam
Los Angeles County Public Works	Pacoima Dam
Los Angeles County Public Works	Puddingstone Dam
Los Angeles County Public Works	Puddingstone Diversion Dam
Los Angeles County Public Works	PW Headquarters Building
Los Angeles County Public Works	PW ITD – Mount Wilson Radio Antenna Tower
Los Angeles County Public Works	PW ITD – Mount Wilson Radio Facility Bldg.
Los Angeles County Public Works	PW OSD - Eaton Yard – Maintenance Office
Los Angeles County Public Works	PW RMD – 518-B Maintenance Yard
Los Angeles County Public Works	PW RMD – Baldwin Park Maintenance Yard
Los Angeles County Public Works	PW RMD - Div 446 Maintenance Yard
Los Angeles County Public Works	PW RMD – Div. #116 Maintenance Yard
Los Angeles County Public Works	PW RMD – Div. #141/241 Maintenance Yard
Los Angeles County Public Works	PW RMD – Div. #142 Maintenance Yard
Los Angeles County Public Works	PW RMD – Div. #232 Maintenance Yard
Los Angeles County Public Works	PW RMD – Div. #336 Maint. Yd.
Los Angeles County Public Works	PW RMD – Div. #339/539 Agoura Maintenance Yard
Los Angeles County Public Works	PW RMD – Div. #417 Maintenance Yard
Los Angeles County Public Works	PW RMD – Div. #446 Sub Maintenance Yard
Los Angeles County Public Works	PW RMD – Div. #518 Maintenance Yard
Los Angeles County Public Works	PW RMD – Div. #519 Maintenance Yard
Los Angeles County Public Works	PW RMD – Div. #523 Maintenance Yard
Los Angeles County Public Works	PW RMD – Div. #524 Maintenance Yard
Los Angeles County Public Works	PW RMD – Div. #526 Maint. Yd.
Los Angeles County Public Works	PW RMD – Div. #551 Maintenance Yard
Los Angeles County Public Works	PW RMD – Div. #555 Maintenance Yard
Los Angeles County Public Works	PW RMD – Div. #558 Maint. Yard
Los Angeles County Public Works	PW RMD – Div. #558a Jackson Lake Maintenance Yd.
Los Angeles County Public Works	PW RMD – Div. #559b Maintenance Yard
Los Angeles County Public Works	PW RMD - Lower Central Yard – Division Administration
Los Angeles County Public Works	PW RMD – Maint. District 3 Yard
Los Angeles County Public Works	PW RMD – Maintenance District No.4 Yard
Los Angeles County Public Works	PW RMD – Palmdale Maintenance Dist. No. 5 Bldg. Yard
Los Angeles County Public Works	PW RMD - Upper Central Yard
Los Angeles County Public Works	PW RMD – Van Pelt Bridge Maintenance Yard
Los Angeles County Public Works	PW SMD - 132ND Street
Los Angeles County Public Works	PW SMD - 213TH Street
Los Angeles County Public Works	PW SMD - AGAVE
Los Angeles County Public Works	PW SMD - Balfour
Los Angeles County Public Works	PW SMD - Bradhurst
Los Angeles County Public Works	PW SMD - Broadway
Los Angeles County Public Works	PW SMD - CAPALLERO
Los Angeles County Public Works	PW SMD - Centinela
Los Angeles County Public Works	PW SMD – Central Yard
Los Angeles County Public Works	PW SMD - Commerce Center Drive
Los Angeles County Public Works	PW SMD - Davids Road
Los Angeles County Public Works	PW SMD – East Yard
Los Angeles County Public Works	PW SMD - Heatherfield
Los Angeles County Public Works	PW SMD – Lake Hughes
Los Angeles County Public Works	PW SMD - Lake Hughes - Newvale
Los Angeles County Public Works	PW SMD - Lake Hughes - Trail K
Los Angeles County Public Works	PW SMD - Lawndale

Table B-1. Los Angeles County Critical Facilities

Department / Agency	Facility Name
Los Angeles County Public Works	PW SMD - LOWRIDGE
Los Angeles County Public Works	PW SMD – Malibu Mesa WWTP
Los Angeles County Public Works	PW SMD – Malibu TP
Los Angeles County Public Works	PW SMD - Marina Del Rey
Los Angeles County Public Works	PW SMD - Maybrook
Los Angeles County Public Works	PW SMD - Muscatel
Los Angeles County Public Works	PW SMD – North Yard
Los Angeles County Public Works	PW SMD - Painter
Los Angeles County Public Works	PW SMD – South Yard
Los Angeles County Public Works	PW SMD - Surrey Drive
Los Angeles County Public Works	PW SMD - Trancas WWTP
Los Angeles County Public Works	PW SMD - TYLER
Los Angeles County Public Works	PW SMD - Ulmus
Los Angeles County Public Works	PW SMD - Viewridge
Los Angeles County Public Works	PW SWMD - 120th St. Pump Station
Los Angeles County Public Works	PW SWMD - 17th St Pump Station
Los Angeles County Public Works	PW SWMD – 83rd St. Maintenance Yard
Los Angeles County Public Works	PW SWMD - Alameda Street 3B Pump Station
Los Angeles County Public Works	PW SWMD - Alameda Street 3C Pump Station
Los Angeles County Public Works	PW SWMD - Alamitos Bay Pump Station
Los Angeles County Public Works	PW SWMD – Alamitos Maintenance Yard
Los Angeles County Public Works	PW SWMD - Alondra Pump Station
Los Angeles County Public Works	PW SWMD - Anaheim St. Pump Station
Los Angeles County Public Works	PW SWMD - Appian Way Pump Station
Los Angeles County Public Works	PW SWMD - Arena Pump Station
Los Angeles County Public Works	PW SWMD - Avalon Pump Station
Los Angeles County Public Works	PW SWMD - Belmont Pump Station
Los Angeles County Public Works	PW SWMD - Boone Olive Pump Station
Los Angeles County Public Works	PW SWMD - Century Frwy Pump Station
Los Angeles County Public Works	PW SWMD - Cerritos Pump Station
Los Angeles County Public Works	PW SWMD - Claretta Pump Station
Los Angeles County Public Works	PW SWMD - Compton Creek Pump Station #1
Los Angeles County Public Works	PW SWMD - Compton Creek Pump Station #2
Los Angeles County Public Works	PW SWMD - Cordova Walk Pump Station
Los Angeles County Public Works	PW SWMD - Dominguer Pump Station
Los Angeles County Public Works	PW SWMD - Dominguez Pump Station
Los Angeles County Public Works	PW SWMD - Doris Pump Station
Los Angeles County Public Works	PW SWMD - East Toledo Pump Station
Los Angeles County Public Works	PW SWMD – Eaton Maintenance Yard
Los Angeles County Public Works	PW SWMD - El Dorado Pump Station
Los Angeles County Public Works	PW SWMD - El Segundo Pump Station
Los Angeles County Public Works	PW SWMD – El Segundo Yard
Los Angeles County Public Works	PW SWMD - Electric Ave Pump Station
Los Angeles County Public Works	PW SWMD - Garnet Avenue Pump Station
Los Angeles County Public Works	PW SWMD - Hamilton Bowl South Pump Station
Los Angeles County Public Works	PW SWMD - Hamilton Bowl West Pump Station
Los Angeles County Public Works	PW SWMD - Hill St. Pump Station
Los Angeles County Public Works	PW SWMD – Imperial Yard
Los Angeles County Public Works	PW SWMD - Johnson Pump Station
Los Angeles County Public Works	PW SWMD - Lakewood Pump Station
Los Angeles County Public Works	PW SWMD - Lennox Blvd Pump Station
Los Angeles County Public Works	PW SWMD – Longden Yard
Los Angeles County Public Works	PW SWMD - Los Altos Pump Station
Los Angeles County Public Works	PW SWMD - Lynwood Pump Station
Los Angeles County Public Works	PW SWMD - Manhattan Beach Pump Station

Table B-1. Los Angeles County Critical Facilities

Department / Agency	Facility Name
Los Angeles County Public Works	PW SWMD - Market St. Pump Station
Los Angeles County Public Works	PW SWMD - Naples Pump Station
Los Angeles County Public Works	PW SWMD - Oxford Pump Station
Los Angeles County Public Works	PW SWMD - Paramount Pump Station
Los Angeles County Public Works	PW SWMD – Pickens Yard
Los Angeles County Public Works	PW SWMD - Redondo Beach Blvd Pump Station
Los Angeles County Public Works	PW SWMD – Redondo Yard Office
Los Angeles County Public Works	PW SWMD – Rio Hondo Yard
Los Angeles County Public Works	PW SWMD – Riverview Maintenance Yard
Los Angeles County Public Works	PW SWMD – Rubio Yard
Los Angeles County Public Works	PW SWMD – San Dimas Maintenance Yard
Los Angeles County Public Works	PW SWMD – Santa Clara Flood Maintenance Yard
Los Angeles County Public Works	PW SWMD – Saticoy Yard
Los Angeles County Public Works	PW SWMD - Seaside Pump Station
Los Angeles County Public Works	PW SWMD - Walteria Lake Pump Station
Los Angeles County Public Works	PW SWMD - West Long Beach Pump Station
Los Angeles County Public Works	PW SWMD - West Neapolitan Pump Station
Los Angeles County Public Works	PW SWMD - West Toledo Pump Station
Los Angeles County Public Works	PW SWMD - Wilmington Unit 2 Pump Station
Los Angeles County Public Works	PW WWD - 116th street pump station
Los Angeles County Public Works	PW WWD - 116th street Tank
Los Angeles County Public Works	PW WWD - 168th and G Pump station
Los Angeles County Public Works	PW WWD - 27 Tank
Los Angeles County Public Works	PW WWD - 37-1 Well
Los Angeles County Public Works	PW WWD - 37-3 Well
Los Angeles County Public Works	PW WWD - 37-4 Well
Los Angeles County Public Works	PW WWD - 39 Tank
Los Angeles County Public Works	PW WWD - Adobe Tank
Los Angeles County Public Works	PW WWD - Anaverde Tanks and pump station
Los Angeles County Public Works	PW WWD - Bev martin tank and Pump Station
Los Angeles County Public Works	PW WWD - Blue Rock Tank
Los Angeles County Public Works	PW WWD - Butte’s Tank
Los Angeles County Public Works	PW WWD - City Ranch Tanks
Los Angeles County Public Works	PW WWD - Crown Valley Pump station
Los Angeles County Public Works	PW WWD - Cuyama Tank
Los Angeles County Public Works	PW WWD - Ft. Tejon Tank
Los Angeles County Public Works	PW WWD - Hasley Pump Station
Los Angeles County Public Works	PW WWD - Hasley Tank
Los Angeles County Public Works	PW WWD - Joshua Ranch Tank
Los Angeles County Public Works	PW WWD - Kohl’s tank
Los Angeles County Public Works	PW WWD - Los Valles Pump station and Well
Los Angeles County Public Works	PW WWD - M & 7th west Tank site
Los Angeles County Public Works	PW WWD - McCennery Tank
Los Angeles County Public Works	PW WWD - North Tank
Los Angeles County Public Works	PW WWD - Old timers tank and pump station
Los Angeles County Public Works	PW WWD - P-10 Pump station
Los Angeles County Public Works	PW WWD - Q-9 Tanks
Los Angeles County Public Works	PW WWD - Rancho Vista tanks
Los Angeles County Public Works	PW WWD - South Tank
Los Angeles County Public Works	PW WWD - Tierra Subida Pump Station
Los Angeles County Public Works	PW WWD - Tierra Subida Tanks
Los Angeles County Public Works	PW WWD - Vincent Pump station
Los Angeles County Public Works	PW WWD #04 – M/5e Water Tank
Los Angeles County Public Works	PW WWD #04 – North Administration Building
Los Angeles County Public Works	PW WWD #04-M8/75w Water Tank

Table B-1. Los Angeles County Critical Facilities

Department / Agency	Facility Name
Los Angeles County Public Works	PW WWD #29 - 20858 Regulating Station
Los Angeles County Public Works	PW WWD #29 - Big Rock 1010 Tank
Los Angeles County Public Works	PW WWD #29 - Big Rock 1200 Tank
Los Angeles County Public Works	PW WWD #29 - Big Rock 900 Pump Station
Los Angeles County Public Works	PW WWD #29 - Broad Beach Regulating Station
Los Angeles County Public Works	PW WWD #29 - Carbon Mesa Tank
Los Angeles County Public Works	PW WWD #29 - Entrada Pump Station
Los Angeles County Public Works	PW WWD #29 - Entrada Tank
Los Angeles County Public Works	PW WWD #29 - Fernwood Tank
Los Angeles County Public Works	PW WWD #29 - Guernsey Regulating Station
Los Angeles County Public Works	PW WWD #29 - Heather Cliff Regulating Station
Los Angeles County Public Works	PW WWD #29 - Horizon Tank
Los Angeles County Public Works	PW WWD #29 - Hume Tank
Los Angeles County Public Works	PW WWD #29 - La Chusa Feeder Regulating Station
Los Angeles County Public Works	PW WWD #29 - La Costa
Los Angeles County Public Works	PW WWD #29 - La Costa Regulating Station
Los Angeles County Public Works	PW WWD #29 - LADWP Emergency Mindanao Connection
Los Angeles County Public Works	PW WWD #29 - Las Flores Pump Station
Los Angeles County Public Works	PW WWD #29 - Las Flores Tank
Los Angeles County Public Works	PW WWD #29 - Latigo Tank
Los Angeles County Public Works	PW WWD #29 - Lower Big Rock 195 Pump Station
Los Angeles County Public Works	PW WWD #29 - Lower Busch Pump Station
Los Angeles County Public Works	PW WWD #29 - LVMWD , Saddle Peak Interconnection
Los Angeles County Public Works	PW WWD #29 - LVMWD, Hume Connection
Los Angeles County Public Works	PW WWD #29 - LVMWD, Latigo Connection
Los Angeles County Public Works	PW WWD #29 - Malibu Beach Pump Station
Los Angeles County Public Works	PW WWD #29 - Malibu Knolls Tank
Los Angeles County Public Works	PW WWD #29 - New Summit Tank
Los Angeles County Public Works	PW WWD #29 - Nicholas Beach Tank
Los Angeles County Public Works	PW WWD #29 - Old Summit Tank
Los Angeles County Public Works	PW WWD #29 - Owen Pump Station
Los Angeles County Public Works	PW WWD #29 - Pepperdine 545 Pump Station
Los Angeles County Public Works	PW WWD #29 - Pepperdine 812 Tank
Los Angeles County Public Works	PW WWD #29 - Pepperdine 907 Tank
Los Angeles County Public Works	PW WWD #29 - Philip Tank
Los Angeles County Public Works	PW WWD #29 - Point Dume Pump Station and Tank
Los Angeles County Public Works	PW WWD #29 - Portshead Tank
Los Angeles County Public Works	PW WWD #29 - Saddle Peak Tank
Los Angeles County Public Works	PW WWD #29 - Santa Maria Tank
Los Angeles County Public Works	PW WWD #29 - Serra Pump Station
Los Angeles County Public Works	PW WWD #29 - Sumac Ridge Tank
Los Angeles County Public Works	PW WWD #29 - Sweetwater Hydro Pump Station
Los Angeles County Public Works	PW WWD #29 - Sweetwater Mesa Tank
Los Angeles County Public Works	PW WWD #29 - Topanga Beach Pump Station
Los Angeles County Public Works	PW WWD #29 - Topanga Beach Tank
Los Angeles County Public Works	PW WWD #29 - Topanga Forks Tank
Los Angeles County Public Works	PW WWD #29 - Topanga Oaks Tank
Los Angeles County Public Works	PW WWD #29 - Topanga Park Pump Station
Los Angeles County Public Works	PW WWD #29 - Trancas Tank
Los Angeles County Public Works	PW WWD #29 - Upper Big Rock 730 Pump Station
Los Angeles County Public Works	PW WWD #29 - Upper Encinal Tank
Los Angeles County Public Works	PW WWD #29 - Winding Wy Tank
Los Angeles County Public Works	PW WWD #29 LADWP Emergency Via Dolce Connection
Los Angeles County Public Works	San Dimas Dam
Los Angeles County Public Works	San Gabriel Dam

Table B-1. Los Angeles County Critical Facilities

Department / Agency	Facility Name
Los Angeles County Public Works	San Gabriel Valley Airport
Los Angeles County Public Works	Santa Anita Dam
Los Angeles County Public Works	Thompson Creek Dam
Los Angeles County Public Works	Whiteman Airport
Los Angeles County Sheriff's Department	Altadena Sheriff's Station
Los Angeles County Sheriff's Department	Avalon Sheriff's Station
Los Angeles County Sheriff's Department	Carson Sheriff's Station
Los Angeles County Sheriff's Department	Century Regional Detention Facility
Los Angeles County Sheriff's Department	Century Sheriff's Station
Los Angeles County Sheriff's Department	Cerritos Sheriff's Station
Los Angeles County Sheriff's Department	Compton Sheriff's Station
Los Angeles County Sheriff's Department	Crescenta Valley Sheriff's Station
Los Angeles County Sheriff's Department	East Los Angeles Sheriff's Station
Los Angeles County Sheriff's Department	Industry Sheriff's Station
Los Angeles County Sheriff's Department	Inmate Reception Center
Los Angeles County Sheriff's Department	Lakewood Sheriff's Station
Los Angeles County Sheriff's Department	Lancaster Sheriff's Station
Los Angeles County Sheriff's Department	Lomita Sheriff's Station
Los Angeles County Sheriff's Department	Malibu/Lost Hills Sheriff's Station
Los Angeles County Sheriff's Department	Marina Del Rey Sheriff's Station
Los Angeles County Sheriff's Department	Men's Central Jail
Los Angeles County Sheriff's Department	North County Correctional Facility
Los Angeles County Sheriff's Department	Norwalk Sheriff's Station
Los Angeles County Sheriff's Department	Palmdale Sheriff's Station
Los Angeles County Sheriff's Department	Pico Rivera Sheriff's Station
Los Angeles County Sheriff's Department	Pitchess Detention Center East Facility
Los Angeles County Sheriff's Department	Pitchess Detention Center North Facility
Los Angeles County Sheriff's Department	Pitchess Detention Center South Facility
Los Angeles County Sheriff's Department	San Dimas Sheriff's Station
Los Angeles County Sheriff's Department	Santa Clarita Valley Sheriff's Station
Los Angeles County Sheriff's Department	South Los Angeles Sheriff's Station
Los Angeles County Sheriff's Department	Temple Sheriff's Station
Los Angeles County Sheriff's Department	Twin Towers Correctional Facility
Los Angeles County Sheriff's Department	Walnut/Diamond Bar Sheriff's Station
Los Angeles County Sheriff's Department	West Hollywood Sheriff's Station

APPENDIX C—RISK ASSESSMENT

Table C-1: Countywide Statistical Area Hazard Impacts

Note: Countywide Statistical Areas that are located within a hazard area are marked with a “1”

CSA	S.D.	3 Ft Sea Level Rise	6 Ft Sea Level Rise	Dam Failure	Violent EQ Shaking	Extreme EQ Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flood	Deep Seated Landslide Class IX & X	Max Tsunami Inundation	Very High Wildfire LRA	High Wildfire SRA	Very High Wildfire SRA
View Park/Windsor Hills	2				1				1		1		
West Rancho Dominguez	2				1								
Willowbrook	2				1		1		1				
Wiseburn	2				1								
Franklin Canyon	3				1		1		1		1		
Miracle Mile	3				1		1						
Santa Monica Mountains	3	1	1	1	1		1	1	1	1	1	1	1
Universal City	3				1				1		1		
West LA	3				1				1				
Westhills	3				1				1		1		1
Cerritos	4				1		1						
East La Mirada	4				1		1		1				
East Whittier	4				1								
Harbor Gateway	4				1								
La Habra Heights	4				1				1				
La Rambla	4				1				1				
Lakewood	4				1		1		1				
Long Beach	4				1		1						
Palos Verdes Peninsula	4				1				1		1		
San Clemente Island	4								1				
Santa Catalina Island	4								1	1	1	1	1
South Whittier	4				1		1		1				
Westfield/Academy Hills	4				1				1		1		
Acton	5				1	1			1		1		1

Table C-1: Countywide Statistical Area Hazard Impacts

Note: Countywide Statistical Areas that are located within a hazard area are marked with a “1”

CSA	S.D.	3 Ft Sea Level Rise	6 Ft Sea Level Rise	Dam Failure	Violent EQ Shaking	Extreme EQ Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flood	Deep Seated Landslide Class IX & X	Max Tsunami Inundation	Very High Wildfire LRA	High Wildfire SRA	Very High Wildfire SRA
Agua Dulce	5				1	1			1		1	1	1
Altadena	5				1		1		1		1	1	1
Anaverde	5			1	1	1			1			1	1
Bouquet Canyon	5				1	1	1		1		1		1
Bradbury	5				1				1		1		
Canyon Country	5				1				1		1	1	1
Castaic	5			1	1	1	1	1	1		1	1	1
Del Sur	5				1	1	1		1				
Desert View Highlands	5					1							
East Covina	5				1				1				
East Lancaster	5			1	1		1						
East Pasadena	5				1				1		1		1
Elizabeth Lake	5				1	1			1			1	1
Hi Vista	5				1				1				
La Crescenta-Montrose	5				1				1		1		1
Lake Hughes	5				1	1			1				1
Lake Los Angeles	5				1	1			1				
Lake Manor	5				1				1		1		1
Leona Valley	5				1	1	1		1		1	1	1
Littlerock	5			1		1	1		1			1	
Littlerock/Juniper Hills	5			1	1	1	1		1			1	1
Littlerock/Pearblossom	5			1	1	1	1		1			1	
Llano	5				1	1			1			1	1
Monrovia	5				1								
Newhall	5					1			1		1		1
North Lancaster	5				1		1		1				

Table C-1: Countywide Statistical Area Hazard Impacts

Note: Countywide Statistical Areas that are located within a hazard area are marked with a “1”

CSA	S.D.	3 Ft Sea Level Rise	6 Ft Sea Level Rise	Dam Failure	Violent EQ Shaking	Extreme EQ Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flood	Deep Seated Landslide Class IX & X	Max Tsunami Inundation	Very High Wildfire LRA	High Wildfire SRA	Very High Wildfire SRA
Walnut Park	1 and 2				1								
Hacienda Heights	1 and 4				1		1		1		1	1	1
Rowland Heights	1 and 4				1				1		1	1	1
Sunrise Village	1 and 4				1		1		1				
West Whittier/Los Nietos	1 and 4				1		1		1				
Whittier	1 and 4				1		1		1		1	1	1
Arcadia	1 and 5				1				1				
Azusa	1 and 5				1				1		1		1
Claremont	1 and 5				1				1		1		1
Covina	1 and 5				1		1		1		1	1	1
Covina (Charter Oak)	1 and 5				1				1				
Duarte	1 and 5				1				1				
Glendora	1 and 5				1		1		1		1		1
La Verne	1 and 5				1				1		1		1
Pomona	1 and 5				1				1		1	1	1
Lynwood	1, 2, and 4				1		1		1				
Angeles National Forest	1, 3, and 5			1	1	1	1	1	1		1	1	1
Del Aire	2 and 4				1				1				
East Rancho Dominguez	2 and 4				1		1		1				
El Camino Village	2 and 4				1				1				
Lennox	2 and 4				1				1				
Rancho Dominguez	2 and 4				1		1		1				
West Carson	2 and 4				1		1		1				

Table C-1: Countywide Statistical Area Hazard Impacts

Note: Countywide Statistical Areas that are located within a hazard area are marked with a “1”

CSA	S.D.	3 Ft Sea Level Rise	6 Ft Sea Level Rise	Dam Failure	Violent EQ Shaking	Extreme EQ Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flood	Deep Seated Landslide Class IX & X	Max Tsunami Inundation	Very High Wildfire LRA	High Wildfire SRA	Very High Wildfire SRA
Marina del Rey	2, 3, and 4	1	1		1		1	1	1	1			
Kagel/Lopez Canyons	3 and 5				1	1	1		1		1		1

Table C-2: Los Angeles County Animal Care & Control Facility Hazard Impacts

Note: Critical facilities that are located within a hazard area are marked with a “1”

Facility Name	3 Ft Sea Level Rise	6 Ft Sea Level Rise	Dam Failure Inundation	Violent EQ Shaking	Extreme EQ Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flooding	Deep Seated Landslide Class IX & X	Max Tsunami Inundation	Very High Wildfire LRA	High Wildfire SRA	Very High Wildfire SRA
Agoura Animal Care Center				1						1		
Baldwin Park Animal Care Center				1								
Carson Animal Care Center				1								
Castaic Animal Care Center (Castaic)			1	1								1
Downey Animal Care Center				1		1						
Lancaster County Animal Care Center				1								
Palmdale Animal Care Center					1	1						

Table C-3: Los Angeles County Fire Department Hazard Impacts

Note: Critical facilities that are located within a hazard area are marked with a “1”

Facility Name	3 Ft Sea Level Rise	6 Ft Sea Level Rise	Dam Failure Inundation	Violent EQ Shaking	Extreme EQ Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flooding	Deep Seated Landslide Class IX & X	Max Tsunami Inundation	Very High Wildfire LRA	High Wildfire SRA	Very High Wildfire SRA
Bob Hope Airport Fire Department				1								
City of Alhambra Fire Department - Training Facility				1								
City of Alhambra Fire Department Station 71 - Headquarters				1								
City of Alhambra Fire Department Station 72 - Southeast District				1								
City of Alhambra Fire Department Station 73 - Northwest				1								
City of Alhambra Fire Department Station 74 - Southwest				1								
City of Arcadia Fire Department Station 105				1								
City of Arcadia Fire Department Station 106 - Headquarters				1								
City of Arcadia Fire Department Station 107				1								
City of Avalon Fire Department										1		
City of Beverly Hills Fire Department Station 1 - Headquarters				1								
City of Beverly Hills Fire Department Station 2				1						1		

Table C-3: Los Angeles County Fire Department Hazard Impacts

Note: Critical facilities that are located within a hazard area are marked with a “1”

Facility Name	3 Ft Sea Level Rise	6 Ft Sea Level Rise	Dam Failure Inundation	Violent EQ Shaking	Extreme EQ Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flooding	Deep Seated Landslide Class IX & X	Max Tsunami Inundation	Very High Wildfire LRA	High Wildfire SRA	Very High Wildfire SRA
City of Beverly Hills Fire Department Station 3				1								
City of Burbank Fire Department Station 11 - Headquarters				1								
City of Burbank Fire Department Station 12				1								
City of Burbank Fire Department Station 13				1								
City of Burbank Fire Department Station 14				1								
City of Burbank Fire Department Station 15				1								
City of Burbank Fire Department Station 16				1					1			
City of Compton Fire Department Station 1 - Headquarters				1		1						
City of Compton Fire Department Station 2				1		1						
City of Compton Fire Department Station 3				1								
City of Compton Fire Department Station 4				1								
City of Downey Fire Department Station 1 - Headquarters				1		1						
City of Downey Fire Department Station 2				1		1						

Table C-3: Los Angeles County Fire Department Hazard Impacts

Note: Critical facilities that are located within a hazard area are marked with a “1”

Facility Name	3 Ft Sea Level Rise	6 Ft Sea Level Rise	Dam Failure Inundation	Violent EQ Shaking	Extreme EQ Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flooding	Deep Seated Landslide Class IX & X	Max Tsunami Inundation	Very High Wildfire LRA	High Wildfire SRA	Very High Wildfire SRA
Culver City Fire Department Station 2				1								
Culver City Fire Department Station 3				1								
La Verne Fire Department Station 1 - Headquarters				1								
La Verne Fire Department Station 2				1								
Los Angeles County Fire Department - Hq/Heliport/Training Facility				1								
Los Angeles County Fire Department Station 1				1								
Los Angeles County Fire Department Station 10				1		1						
Los Angeles County Fire Department Station 101				1								
Los Angeles County Fire Department Station 102				1								
Los Angeles County Fire Department Station 103				1		1						
Los Angeles County Fire Department Station 104				1					1			
Los Angeles County Fire Department Station 105				1		1						
Los Angeles County Fire Department Station 106				1				1	1			
Los Angeles County Fire Department Station 107					1							

Table C-3: Los Angeles County Fire Department Hazard Impacts

Note: Critical facilities that are located within a hazard area are marked with a “1”

Facility Name	3 Ft Sea Level Rise	6 Ft Sea Level Rise	Dam Failure Inundation	Violent EQ Shaking	Extreme EQ Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flooding	Deep Seated Landslide Class IX & X	Max Tsunami Inundation	Very High Wildfire LRA	High Wildfire SRA	Very High Wildfire SRA
Los Angeles County Fire Department Station 11				1								
Los Angeles County Fire Department Station 110				1					1			
Los Angeles County Fire Department Station 111				1								
Los Angeles County Fire Department Station 112				1		1						
Los Angeles County Fire Department Station 114												
Los Angeles County Fire Department Station 115				1		1						
Los Angeles County Fire Department Station 116				1								
Los Angeles County Fire Department Station 117				1		1						
Los Angeles County Fire Department Station 118				1								
Los Angeles County Fire Department Station 119				1				1				
Los Angeles County Fire Department Station 12				1								
Los Angeles County Fire Department Station 120				1								
Los Angeles County Fire Department Station 121				1				1				
Los Angeles County Fire Department Station 122				1								
Los Angeles County Fire Department Station 123					1					1		

Table C-3: Los Angeles County Fire Department Hazard Impacts

Note: Critical facilities that are located within a hazard area are marked with a “1”

Facility Name	3 Ft Sea Level Rise	6 Ft Sea Level Rise	Dam Failure Inundation	Violent EQ Shaking	Extreme EQ Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flooding	Deep Seated Landslide Class IX & X	Max Tsunami Inundation	Very High Wildfire LRA	High Wildfire SRA	Very High Wildfire SRA
Los Angeles County Fire Department Station 18				1								
Los Angeles County Fire Department Station 181				1								
Los Angeles County Fire Department Station 182				1								
Los Angeles County Fire Department Station 183				1								
Los Angeles County Fire Department Station 184				1								
Los Angeles County Fire Department Station 185				1								
Los Angeles County Fire Department Station 186				1								
Los Angeles County Fire Department Station 187				1								
Los Angeles County Fire Department Station 188				1								
Los Angeles County Fire Department Station 19				1						1		
Los Angeles County Fire Department Station 2				1						1		
Los Angeles County Fire Department Station 20				1								
Los Angeles County Fire Department Station 21				1								
Los Angeles County Fire Department Station 22				1								
Los Angeles County Fire Department Station 23				1		1						

Table C-3: Los Angeles County Fire Department Hazard Impacts

Note: Critical facilities that are located within a hazard area are marked with a “1”

Facility Name	3 Ft Sea Level Rise	6 Ft Sea Level Rise	Dam Failure Inundation	Violent EQ Shaking	Extreme EQ Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flooding	Deep Seated Landslide Class IX & X	Max Tsunami Inundation	Very High Wildfire LRA	High Wildfire SRA	Very High Wildfire SRA
Los Angeles County Fire Department Station 24					1							
Los Angeles County Fire Department Station 25				1		1						
Los Angeles County Fire Department Station 26				1								
Los Angeles County Fire Department Station 27				1								
Los Angeles County Fire Department Station 28				1								
Los Angeles County Fire Department Station 29				1								
Los Angeles County Fire Department Station 3				1								
Los Angeles County Fire Department Station 30				1		1						
Los Angeles County Fire Department Station 31				1		1						
Los Angeles County Fire Department Station 32				1								
Los Angeles County Fire Department Station 33				1		1						
Los Angeles County Fire Department Station 34				1		1						
Los Angeles County Fire Department Station 35				1								
Los Angeles County Fire Department Station 36				1								
Los Angeles County Fire Department Station 37					1	1						

Table C-3: Los Angeles County Fire Department Hazard Impacts

Note: Critical facilities that are located within a hazard area are marked with a “1”

Facility Name	3 Ft Sea Level Rise	6 Ft Sea Level Rise	Dam Failure Inundation	Violent EQ Shaking	Extreme EQ Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flooding	Deep Seated Landslide Class IX & X	Max Tsunami Inundation	Very High Wildfire LRA	High Wildfire SRA	Very High Wildfire SRA
Los Angeles County Fire Department Station 38				1								
Los Angeles County Fire Department Station 39				1								
Los Angeles County Fire Department Station 4				1								
Los Angeles County Fire Department Station 40				1		1						
Los Angeles County Fire Department Station 41				1								
Los Angeles County Fire Department Station 42				1								
Los Angeles County Fire Department Station 43				1								
Los Angeles County Fire Department Station 44				1								
Los Angeles County Fire Department Station 45				1		1						
Los Angeles County Fire Department Station 47				1								
Los Angeles County Fire Department Station 48				1								
Los Angeles County Fire Department Station 49				1								
Los Angeles County Fire Department Station 5				1								
Los Angeles County Fire Department Station 50				1								
Los Angeles County Fire Department Station 51				1						1		

Table C-5: Los Angeles County Library Hazard Impacts

Note: Critical facilities that are located within a hazard area are marked with a “1”

Facility Name	3 Ft Sea Level Rise	6 Ft Sea Level Rise	Dam Failure Inundation	Violent EQ Shaking	Extreme EQ Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flooding	Deep Seated Landslide Class IX & X	Max Tsunami Inundation	Very High Wildfire LRA	High Wildfire SRA	Very High Wildfire SRA
A C Bilbrew Library				1								
Acton Agua Dulce Library					1							1
Agoura Hills Library				1						1		
Alondra Library				1		1						
Angelo M. Iacoboni Library				1		1						
Anthony Quinn Library				1								
Artesia Library				1		1						
Avalon Library										1		
Baldwin Park Library				1								
Bell Gardens Library				1								
Bell Library				1								
Carson Library				1								
Castaic Library				1						1		
Charter Oak Library				1								
Chet Holifield Library				1								
City Terrace Library				1								
Claremont Helen Renwick Library				1								
Clifton M. Brakensiek Library				1		1						
Compton Library				1		1						

Table C-6: LACMA & MNH Hazard Impacts

Note: Critical facilities that are located within a hazard area are marked with a “1”

Facility Name	3 Ft Sea Level Rise	6 Ft Sea Level Rise	Dam Failure Inundation	Violent EQ Shaking	Extreme EQ Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flooding	Deep Seated Landslide Class IX & X	Max Tsunami Inundation	Very High Wildfire LRA	High Wildfire SRA	Very High Wildfire SRA
La Brea Tarpits				1								
Los Angeles County Museum of Art				1								
Natural History Museum				1								
William S. Hart Museum					1					1		

Table C-7: Los Angeles County Office of Education Hazard Impacts

Note: Critical facilities that are located within a hazard area are marked with a “1”

Facility Name	3 Ft Sea Level Rise	6 Ft Sea Level Rise	Dam Failure Inundation	Violent EQ Shaking	Extreme EQ Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flooding	Deep Seated Landslide Class IX & X	Max Tsunami Inundation	Very High Wildfire LRA	High Wildfire SRA	Very High Wildfire SRA
Afflerbaugh-Paige Camp				1								1
Alma Fuerte Public				1								
Animo City of Champions Charter High				1								
Aspire Antonio Maria Lugo Academy				1								
Aspire Ollin University Preparatory Academy				1								
Central Juvenile Hall				1								
Da Vinci RISE High				1								
Environmental Charter Middle				1								
Environmental Charter Middle - Inglewood				1								
Intellectual Virtues Academy				1								
International Polytechnic High				1								
Jardin de la Infancia				1								
Kirby, Dorothy Camp				1								
L.A. County High School for the Arts				1								
LA's Promise Charter High #1				1								
LA's Promise Charter Middle #1				1		1						
Lashon Academy			1	1								
Los Angeles County Special Education				1		1						

Table C-7: Los Angeles County Office of Education Hazard Impacts

Note: Critical facilities that are located within a hazard area are marked with a “1”

Facility Name	3 Ft Sea Level Rise	6 Ft Sea Level Rise	Dam Failure Inundation	Violent EQ Shaking	Extreme EQ Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flooding	Deep Seated Landslide Class IX & X	Max Tsunami Inundation	Very High Wildfire LRA	High Wildfire SRA	Very High Wildfire SRA
Los Angeles International Charter High				1						1		
Los Padrinos Juvenile Hall				1		1						
Magnolia Science Academy			1	1								
Magnolia Science Academy 2				1								
Magnolia Science Academy 3				1		1						
Magnolia Science Academy 5				1								
McNair Camp					1							
Nidorf, Barry J.					1							
North Valley Military Institute College Preparatory Academy					1							
Odyssey Charter				1								
Onizuka Camp					1							
Optimist Charter				1						1		
Phoenix Academy Residential Education Center					1							
Renaissance County Community				1								
Road to Success Academy at Campus Kilpatrick				1								1
Rockey, Glenn Camp				1				1		1		
Scott, Joseph Camp				1								1
Soleil Academy Charter				1		1						

Table C-8: Los Angeles County Parks & Recreation Hazard Impacts

Note: Critical facilities that are located within a hazard area are marked with a “1”

Facility Name	3 Ft Sea Level Rise	6 Ft Sea Level Rise	Dam Failure Inundation	Violent EQ Shaking	Extreme EQ Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flooding	Deep Seated Landslide Class IX & X	Max Tsunami Inundation	Very High Wildfire LRA	High Wildfire SRA	Very High Wildfire SRA
Castaic Regional Sports Complex			1	1								1
Charles S. Farnsworth Park				1						1		
Charles S. Farnsworth Park				1								
Charles S. Farnsworth Park				1								
Charles S. Farnsworth Park				1								
Charter Oak Park				1								
City Terrace Park				1								
City Terrace Park				1								
Col. Leon H. Washington Park				1								
Col. Leon H. Washington Park				1								
Crescenta Valley Community Regional Park				1						1		
Crescenta Valley Community Regional Park				1						1		
Dalton Park				1								
Del Aire Park				1								
Del Aire Park				1								
Devil's Punchbowl Natural Area and Nature Center					1						1	
Dexter Park					1			1				1

Table C-8: Los Angeles County Parks & Recreation Hazard Impacts

Note: Critical facilities that are located within a hazard area are marked with a “1”

Facility Name	3 Ft Sea Level Rise	6 Ft Sea Level Rise	Dam Failure Inundation	Violent EQ Shaking	Extreme EQ Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flooding	Deep Seated Landslide Class IX & X	Max Tsunami Inundation	Very High Wildfire LRA	High Wildfire SRA	Very High Wildfire SRA
Dexter Park					1			1				1
Don Knabe Community Regional Park				1								
Don Knabe Community Regional Park				1								
Don Knabe Community Regional Park				1								
East Rancho Dominguez Park				1		1						
East Rancho Dominguez Park				1		1						
East Rancho Dominguez Park				1		1						
El Cariso Community Regional Park					1							
El Cariso Community Regional Park					1							
El Cariso Community Regional Park					1							
Enterprise Park				1								
Eugene A. Obregon Park				1								
Eugene A. Obregon Park				1								
Franklin D. Roosevelt Park				1								
Franklin D. Roosevelt Park				1								
George Lane Park					1	1						
George Lane Park					1	1						

Table C-10: Los Angeles County Public Works Hazard Impacts

Note: Critical facilities that are located within a hazard area are marked with a “1”

Facility Name	3 Ft Sea Level Rise	6 Ft Sea Level Rise	Dam Failure Inundation	Violent EQ Shaking	Extreme EQ Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flooding	Deep Seated Landslide Class IX & X	Max Tsunami Inundation	Very High Wildfire LRA	High Wildfire SRA	Very High Wildfire SRA
PW WWD - 37-3 Well				1								1
PW WWD - 37-4 Well				1								1
PW Headquarters Building				1								
PW RMD – Div. #116 Maintenance Yard				1								
PW RMD – Div. #142 Maintenance Yard				1								
PW RMD – Div. #417 Maintenance Yard				1								
PW RMD – Baldwin Park Maintenance Yard				1								
PW RMD - Lower Central Yard – Division Administration				1								
PW RMD - Upper Central Yard				1								
PW RMD – Van Pelt Bridge Maintenance Yard				1								
PW SWMD – Imperial Yard				1		1						
PW SWMD – Longden Yard				1								
PW SWMD – Rio Hondo Yard				1								
PW SWMD – Riverview Maintenance Yard				1		1						

Table C-10: Los Angeles County Public Works Hazard Impacts

Note: Critical facilities that are located within a hazard area are marked with a “1”

Facility Name	3 Ft Sea Level Rise	6 Ft Sea Level Rise	Dam Failure Inundation	Violent EQ Shaking	Extreme EQ Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flooding	Deep Seated Landslide Class IX & X	Max Tsunami Inundation	Very High Wildfire LRA	High Wildfire SRA	Very High Wildfire SRA
PW RMD – Div. #141/241 Maintenance Yard				1								
PW RMD – Div. #232 Maintenance Yard				1								
PW RMD – Maint. District 3 Yard				1								
PW SWMD – 83rd St. Maintenance Yard				1								
PW RMD – Div. #336 Maint. Yd.				1						1		
PW RMD – Div. #339/539 Agoura Maintenance Yard				1								1
PW SWMD – Saticoy Yard				1			1					
PW WWD #29 - 20858 Regulating Station				1		1				1		
PW WWD #29 - Big Rock 900 Pump Station				1				1				1
PW WWD #29 - Big Rock 1010 Tank				1				1				1
PW WWD #29 - Big Rock 1200 Tank				1				1				1
PW WWD #29 - Broad Beach Regulating Station				1				1		1		
PW WWD #29 - Carbon Mesa Tank				1						1		

Table C-10: Los Angeles County Public Works Hazard Impacts

Note: Critical facilities that are located within a hazard area are marked with a “1”

Facility Name	3 Ft Sea Level Rise	6 Ft Sea Level Rise	Dam Failure Inundation	Violent EQ Shaking	Extreme EQ Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flooding	Deep Seated Landslide Class IX & X	Max Tsunami Inundation	Very High Wildfire LRA	High Wildfire SRA	Very High Wildfire SRA
PW WWD #29 - Entrada Pump Station				1				1				1
PW WWD #29 - Entrada Tank				1				1				1
PW WWD #29 - Fernwood Tank				1				1				1
PW WWD #29 - Guernsey Regulating Station				1						1		
PW WWD #29 - Heather Cliff Regulating Station				1						1		
PW WWD #29 - Horizon Tank				1						1		
PW WWD #29 - Hume Tank				1								1
PW WWD #29 - La Chusa Feeder Regulating Station				1						1		
PW WWD #29 - La Costa				1						1		
PW WWD #29 - La Costa Regulating Station				1				1		1		
PW WWD #29 - Las Flores Pump Station				1						1		
PW WWD #29 - Las Flores Tank				1						1		
PW WWD #29 - Latigo Tank				1				1				1

Table C-10: Los Angeles County Public Works Hazard Impacts

Note: Critical facilities that are located within a hazard area are marked with a “1”

Facility Name	3 Ft Sea Level Rise	6 Ft Sea Level Rise	Dam Failure Inundation	Violent EQ Shaking	Extreme EQ Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flooding	Deep Seated Landslide Class IX & X	Max Tsunami Inundation	Very High Wildfire LRA	High Wildfire SRA	Very High Wildfire SRA
PW WWD #29 - Lower Big Rock 195 Pump Station				1				1		1		
PW WWD #29 - LVMWD, Hume Connection				1				1				1
PW WWD #29 - LVMWD, Latigo Connection				1				1				1
PW WWD #29 - LVMWD , Saddle Peak Interconnection				1								1
PW WWD #29 - Lower Busch Pump Station				1						1		
PW WWD #29 - Malibu Beach Pump Station				1						1		
PW WWD #29 - Malibu Knolls Tank				1						1		
PW WWD #29 - New Summit Tank				1								1
PW WWD #29 - Nicholas Beach Tank				1				1		1		
PW WWD #29 - Old Summit Tank				1						1		
PW WWD #29 - Owen Pump Station				1								1
PW WWD #29 - Pepperdine 545 Pump Station				1						1		

Table C-10: Los Angeles County Public Works Hazard Impacts

Note: Critical facilities that are located within a hazard area are marked with a “1”

Facility Name	3 Ft Sea Level Rise	6 Ft Sea Level Rise	Dam Failure Inundation	Violent EQ Shaking	Extreme EQ Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flooding	Deep Seated Landslide Class IX & X	Max Tsunami Inundation	Very High Wildfire LRA	High Wildfire SRA	Very High Wildfire SRA
PW WWD #29 - Pepperdine 812 Tank				1								1
PW WWD #29 - Pepperdine 907 Tank				1				1				1
PW WWD #29 - Philip Tank				1						1		
PW WWD #29 - Point Dume Pump Station and Tank				1						1		
PW WWD #29 - Portshead Tank				1								
PW WWD #29 - Saddle Peak Tank				1				1				1
PW WWD #29 - Santa Maria Tank				1						1		
PW WWD #29 - Serra Pump Station				1						1		
PW WWD #29 - Sumac Ridge Tank				1						1		
PW WWD #29 - Sweetwater Hydro Pump Station				1						1		
PW WWD #29 - Sweetwater Mesa Tank				1				1		1		
PW WWD #29 - Topanga Beach Pump Station				1				1				1
PW WWD #29 - Topanga Beach Tank				1						1		

Table C-10: Los Angeles County Public Works Hazard Impacts

Note: Critical facilities that are located within a hazard area are marked with a “1”

Facility Name	3 Ft Sea Level Rise	6 Ft Sea Level Rise	Dam Failure Inundation	Violent EQ Shaking	Extreme EQ Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flooding	Deep Seated Landslide Class IX & X	Max Tsunami Inundation	Very High Wildfire LRA	High Wildfire SRA	Very High Wildfire SRA
PW WWD #29 LADWP Emergency Via Dolce Connection				1		1			1			
PW WWD #29 – LADWP Emergency Mindanao Connection				1								
PW OSD - Eaton Yard – Maintenance Office				1				1				
PW RMD – 518-B Maintenance Yard				1						1		
PW RMD – Div. #523 Maintenance Yard				1						1		
PW RMD – Div. #524 Maintenance Yard				1						1		
PW RMD – Div. #518 Maintenance Yard				1								
PW RMD – Div. #519 Maintenance Yard				1								
PW RMD – Div. #526 Maint. Yd.			1	1		1				1		
PW RMD – Div. #551 Maintenance Yard					1	1						
PW RMD – Div. #555 Maintenance Yard				1								
PW RMD – Div. #558 Maint. Yard					1							
PW RMD – Div. #558a Jackson Lake Maintenance Yd.					1							

Table C-10: Los Angeles County Public Works Hazard Impacts

Note: Critical facilities that are located within a hazard area are marked with a “1”

Facility Name	3 Ft Sea Level Rise	6 Ft Sea Level Rise	Dam Failure Inundation	Violent EQ Shaking	Extreme EQ Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flooding	Deep Seated Landslide Class IX & X	Max Tsunami Inundation	Very High Wildfire LRA	High Wildfire SRA	Very High Wildfire SRA
PW RMD – Div. #559b Maintenance Yard				1								
PW RMD – Palmdale Maintenance Dist. No. 5 Bldg. Yard					1	1						
PW SWMD – Eaton Maintenance Yard				1								
PW SWMD – Pickens Yard				1						1		
PW SWMD – Rubio Yard				1						1		
PW SWMD – Santa Clara Flood Maintenance Yard				1						1		
PW WWD #04 – North Administration Building				1		1						
PW SWMD – San Dimas Maintenance Yard				1								
PW SMD - Balfour				1		1						
PW SMD - Bradhurst				1		1						
PW SMD - Broadway				1								
PW SMD - Muscatel				1								
PW SMD - Painter				1								
PW SMD - Surrey Drive				1				1		1		
PW SMD - 132ND STREET				1								
PW SMD - Centinela				1								
PW SMD - Davids				1						1		

Table C-10: Los Angeles County Public Works Hazard Impacts

Note: Critical facilities that are located within a hazard area are marked with a "1"

Facility Name	3 Ft Sea Level Rise	6 Ft Sea Level Rise	Dam Failure Inundation	Violent EQ Shaking	Extreme EQ Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flooding	Deep Seated Landslide Class IX & X	Max Tsunami Inundation	Very High Wildfire LRA	High Wildfire SRA	Very High Wildfire SRA
PW WWD - Crown Valley Pump station				1								1
PW WWD - Hasley Pump Station				1								1
PW SWMD - 120th St. Pump Station				1								
PW SWMD - Alameda Street 3B Pump Station				1		1						
PW SWMD - Alameda Street 3C Pump Station				1		1						
PW SWMD - Avalon Pump Station				1		1						
PW SWMD - Compton Creek Pump Station #1				1		1						
PW SWMD - Compton Creek Pump Station #2				1		1						
PW SWMD - Dominguez Pump Station				1		1						
PW SWMD - Lennox Blvd Pump Station				1								
PW SWMD - Oxford Pump Station				1					1			
PW SWMD - Redondo Beach Blvd Pump Station				1								
PW SWMD - Boone Olive Pump Station				1		1			1			

Table C-10: Los Angeles County Public Works Hazard Impacts

Note: Critical facilities that are located within a hazard area are marked with a “1”

Facility Name	3 Ft Sea Level Rise	6 Ft Sea Level Rise	Dam Failure Inundation	Violent EQ Shaking	Extreme EQ Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flooding	Deep Seated Landslide Class IX & X	Max Tsunami Inundation	Very High Wildfire LRA	High Wildfire SRA	Very High Wildfire SRA
PW SWMD - East Toledo Pump Station									1			
PW SWMD - El Dorado Pump Station				1		1						
PW SWMD - El Segundo Pump Station				1								
PW SWMD - Garnet Avenue Pump Station				1		1						
PW SWMD - Hamilton Bowl South Pump Station				1		1						
PW SWMD - Hamilton Bowl West Pump Station				1		1						
PW SWMD - Hill St. Pump Station				1		1						
PW SWMD - Johnson Pump Station				1								
PW SWMD - Lakewood Pump Station				1		1						
PW SWMD - Los Altos Pump Station				1								
PW SWMD - Lynwood Pump Station				1		1						
PW SWMD - Manhattan Beach Pump Station				1								
PW SWMD - Market St. Pump Station				1		1						

Table C-10: Los Angeles County Public Works Hazard Impacts

Note: Critical facilities that are located within a hazard area are marked with a “1”

Facility Name	3 Ft Sea Level Rise	6 Ft Sea Level Rise	Dam Failure Inundation	Violent EQ Shaking	Extreme EQ Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flooding	Deep Seated Landslide Class IX & X	Max Tsunami Inundation	Very High Wildfire LRA	High Wildfire SRA	Very High Wildfire SRA
PW WWD - McCennery Tank					1			1				1
PW WWD - South Tank				1								1
PW WWD - 168th and G Pump station				1								
PW WWD - Anaverde Tanks and pump station				1						1		
PW WWD - Old timers tank and pump station				1								
PW WWD - Los Valles Pump station and Well				1								1
PW WWD - Vincent Pump station					1							1
PW WWD - Bev martin tank and Pump Station				1		1						
PW SMD – East Yard				1								
PW SMD - Lawndale				1								
PW SMD – South Yard				1								
PW SMD – Central Yard				1								
PW SMD – North Yard				1		1						

Table C-11: Los Angeles County Sheriff’s Department Hazard Impacts

Note: Critical facilities that are located within a hazard area are marked with a “1”

Facility Name	3 Ft Sea Level Rise	6 Ft Sea Level Rise	Dam Failure Inundation	Violent EQ Shaking	Extreme EQ Shaking	0.2% Annual Chance Flooding	1% Annual Chance Flooding	Deep Seated Landslide Class IX & X	Max Tsunami Inundation	Very High Wildfire LRA	High Wildfire SRA	Very High Wildfire SRA
Altadena Sheriff's Station				1								
Avalon Sheriff's Station										1		
Carson Sheriff's Station				1		1						
Century Regional Detention Facility				1								
Century Sheriff's Station				1								
Cerritos Sheriff's Station				1								
Compton Sheriff's Station				1		1						
Crescenta Valley Sheriff's Station				1						1		
East Los Angeles Sheriff's Station				1								
Industry Sheriff's Station				1								
Inmate Reception Center				1								
Lakewood Sheriff's Station				1		1						
Lancaster Sheriff's Station				1		1						
Lomita Sheriff's Station				1								
Malibu/Lost Hills Sheriff's Station				1						1		
Marina Del Rey Sheriff's Station				1					1			
Men's Central Jail				1								
North County Correctional Facility			1	1							1	
Norwalk Sheriff's Station				1								
Palmdale Sheriff's Station					1							
Pico Rivera Sheriff's Station				1		1						

