COUNTY OF RIVERSIDE OPERATIONAL AREA

Multi-Jurisdictional Local Hazard Mitigation Plan

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Version 8.7.23



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Executive Summary

The purpose of the County of Riverside Operational Area Multi-Jurisdictional Local Hazard Mitigation Plan (MJLHMP), also know as the Base Plan, is to identify the County's hazards, review and assess past disaster occurrences, estimate the probability of future occurrences, and set goals to mitigate potential risks to reduce or eliminate long-term risk to people and property from natural and human-caused hazards.

The MJLHMP was prepared pursuant to the requirements of the Disaster Mitigation Act of 2000 to achieve eligibility and potentially secure mitigation funding through Federal Emergency Management Agency (FEMA) Flood Mitigation Assistance, Pre-Disaster Mitigation, and Hazard Mitigation Grant Programs.

Riverside County's continual efforts to maintain a disaster-mitigation strategy is on-going. Our goal is to develop and maintain an all-inclusive plan to include all jurisdictions, special districts, businesses, and community organizations and to promote consistency, continuity, and unification.

The County's planning process followed a methodology presented by FEMA and Cal-OES which included conducting meetings with the Operational Area Planning Committee (OAPC) coordinated by County of Riverside Emergency Management Department (EMD) comprised of participating Federal, State, and local jurisdictions agencies, special districts, school districts, non-profit communities, universities, businesses, Tribal Leaders, and Healthcare Facilities.

The MJLHMP identifies vulnerabilities, provides recommendations for prioritized mitigation actions, evaluates resources, and identifies mitigation shortcomings, provides future mitigation planning and maintenance of existing plan.

Plan Adoption/Resolution

The County and its participating jurisdictions will submit plans to Cal OES for a 45-day joint review with FEMA and will adhere to the recommended process. In addition, the County and its participants will wait to receive an "Approval Pending Adoption" before taking the plan to the local governing bodies for adoption. Upon approval, County and participating jurisdictions will insert signed resolutions.

(See Appendix A for Draft Resolution)

Acknowledgments

County Board of Supervisors:
District 1 – Kevin Jeffries
District 2 – Karen Spiegel
District 3 – Chuck Washington
District 4 – Manuel Perez
District 5 – Yxstian Gutierrez

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Multi-Jurisdictional Local Hazard Mitigation Plan Steering Committee (OAPC)
Representatives from county departments and political subdivisions within the county area.

Jurisdictional Participation
Special thanks to the participating local jurisdictions and special districts for collecting and compiling historical disaster information, providing area hazard identification summaries and completing their stand-alone local hazard mitigation plans. The local hazard assessments and insight are very instrumental to incorporate mitigation actions into the MJLHMP.

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2023 MJLHMP Participants and Prospective Annexes

Table 1: Participants and Prospective Annexes

City Jurisdictions	Tribes
City of Banning	Morongo Band of Mission Indians
City of Beaumont	Twenty-nine Palms Band of Mission Indians
City of Blythe	
City of Calimesa	
City of Canyon Lake	
City of Cathedral – Dropped Out	**School Districts & Special Districts**
City of Coachella	Beaumont Unified School District
City of Corona	Desert Healthcare District & Foundation
City of Desert Hot Springs	Hemet Unified School District
City of Eastvale	High Valley Water District
City of Hemet	Idyllwild Fire Protection District
City of Indian Wells	Imperial Irrigation District
City of Indio	Moreno Valley Unified School District
City of Jurupa Valley	Perris Union High School District
City of La Quinta	Rancho California Water District
City of Lake Elsinore	Riverside County Office of Education
City of Menifee (Appendix L)	San Jacinto Unified School District
City of Moreno Valley	Western Municipal Water District
City of Murrieta	
City of Norco	*Riverside County Flood Control & Water Conservation District
City of Palm Desert	
City of Palm Springs	
City of Perris	
City of Rancho Mirage	
City of Riverside	
City of San Jacinto	
City of Temecula	
City of Wildomar	

*Considered a Riverside County Department

List of Appendices

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Section 1.0 – Multi-Jurisdictional Local Hazard Mitigation Plan

1.1 Plan Description

The 2023 Multi-Jurisdictional Local Hazard Mitigation Plan (MJLHMP) was written with the feedback and cooperation of multiple departments within the County of Riverside and multiple cities, tribes, and special districts. This plan is an update to the 2018 MJLHMP and reaffirms the commitment of the Riverside County Operational Area to reduce risks from natural and other hazards.

Since 1980, Riverside County has had 49 Federal Disaster Declarations. The most recent Federally Declared Disaster was in September 2022 and was the result of the Fairview Fire. In addition, the county has experienced 21 Governor-Proclaimed State Disasters, with the most recent in September 2022. In 2022, Riverside County was impacted by floods, high winds, high heat, and fires. These natural disasters will occur again, often on a yearly basis.

Riverside County cities, tribes, communities, and special districts share the common goal of becoming a disaster resistant operational area.

1.2 Purpose of Plan and Authority

Disaster Mitigation Act of 2000 (DMA 2000) (Public Law 106-390) provides the legal basis for FEMA mitigation planning requirements for State, local and Indian Tribal governments as a condition of mitigation grant assistance. DMA 2000 amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act by repealing the previous mitigation planning provisions and replacing them with a new set of requirements that emphasize the need for State, local, and Indian Tribal entities to closely coordinate mitigation planning and implementation efforts. The requirement for a State Hazard Mitigation Plan (SHMP) is continued as a condition of disaster assistance, adding incentives for increased coordination and integration of mitigation activities at the State level. DMA 2000 also established a requirement for local mitigation plans and authorized up to seven (7) percent of Hazard Mitigation Grant Program (HMPG) funds available to a State for development of State, local, and Indian Tribal mitigation plans.

1.3 Grant Programs with Mitigation Plan Requirements

The Hazard Mitigation Grant Program (HMGP) is authorized by Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended (the Stafford Act), Title 42, United States Code (U.S.C.) 5170c. The key purpose of HMGP is to ensure that the opportunity to take critical mitigation measures to reduce the risk of loss of life and property from future disasters is not lost during the reconstruction process following a disaster. HMGP is available, when authorized under a Presidential major disaster declaration, in the areas of the State requested by the Governor. The amount of HMGP funding available to the Applicant is based upon the total Federal assistance to be provided by FEMA for disaster recovery under the Presidential major disaster declaration.

The Flood Mitigation Assistance (FMA) program is authorized by Section 1366 of the National Flood Insurance Act of 1968, as amended (NFIA), 42 U.S.C. 4104c, with the goal of reducing or eliminating claims under the National Flood Insurance Program (NFIP). FEMA requires that the state, tribal, or local government applying for this form of assistance have adopted a hazard mitigation plan as a condition of receiving funding. The Disaster Recovery Reform Act of 2018 (DRRA) [2] amended Section 203 of the Stafford Act. Through DRRA Section 1234, National Public Infrastructure Pre-Disaster Hazard Mitigation, FEMA will implement the amended authority in Section 203 by discontinuing the PDM grant program and establishing the Building Resilient Infrastructure and Communities (BRIC) grant program, associated program implementation materials, and notices. of funding opportunity (NOFOs). FEMA will fund BRIC from a six-percent set-aside of estimated disaster expenses for each major disaster, as authorized by Section 203(i). FEMA's BRIC grant program give states, local communities, tribes, and territories funding to address future risks to natural disasters, including ones involving wildfires, drought, hurricanes, earthquakes, extreme heat, and flooding.

See section 7.4 for Fiscal Mitigation Capabilities

Section 322 of DMA 2000 specifically addresses mitigation planning at the state and local levels. It identifies requirements that allow HMGP funds to be used for planning activities and it increases the amount of HMGP funds available to states that have developed a comprehensive, enhanced mitigation plan prior to a disaster. States and communities must have an approved mitigation plan on file prior to receiving post-disaster HMGP funds. Local and tribal mitigation plans must demonstrate that their proposed mitigation measures are based on a sound planning process that accounts for the risk to and the capabilities of the individual communities.

State governments have certain responsibilities for implementing Section 322, including:

- Preparing and submitting a standard or enhanced State Mitigation Plan

- Reviewing and updating the State Mitigation Plan every five years

Providing technical assistance and training to local governments to assist them in applying for HMGP grants and in developing local mitigation plans; and reviewing and approving local plans if the state is designated a managing state and has an approved enhanced plan.

DMA 2000 is intended to facilitate cooperation between state and local authorities. It encourages and rewards local and state pre-disaster planning and promotes sustainability as a strategy for disaster resistance. This enhanced planning network is intended to enable local and state governments to articulate accurate needs for mitigation, resulting in faster allocation of funding and more effective risk reduction projects.

FEMA prepared an Interim Final Rule, published in the Federal Register on February 26, 2002 (44 CFR Parts 201 and 206), which establishes planning and funding criteria for states and local communities. Since this ruling, FEMA has established revised planning policy guidance. That guidance goes into effect on April 19, 2023, which mandates new standards for mitigation plans approved following that date.

The Riverside County Operational Area Multi-Jurisdictional Local Hazard Mitigation Plan (MJLHMP) supports the values and goals of the FEMA, and Cal-OES. The 2018 State Hazard Mitigation Plan was used as a reference and source for relevant information and changes in the State of California Hazard Mitigation Planning process. The MJLHMP planning team members collaborated regularly with Cal-OES mitigation planning staff on the 2023 plan update.

The 2018 State Hazard Mitigation Plan – An Enhanced State Mitigation Plan

The document is a comprehensive update of the 2018 SHMP. It performs the following functions:

1. Describes goals, objectives, strategies, and priorities for future mitigation activities

2. Documents statewide hazard mitigation systems implemented in California to reduce risk

3. Highlights new hazard mitigation initiatives since the 2013 SHMP

4. Describes and illustrates mitigation progress and success stories

5. Facilitates integration of local, state, tribal, and private sector hazard mitigation activities into a comprehensive statewide effort

Goals Shared with State Multi-Hazard Mitigation Plan

The County of Riverside Operational Area's MJLHMP goals are shared with the State of California 2018 Multi-Hazard Mitigation Plan.

Goal 1: Significantly reduce life loss and injuries

Goal 2: Minimize damage to structures and property, as well as interruption of essential services and activities

Goal 3: Protect the Environment

Goal 4: Promote hazard mitigation and community resilience as both integrated public policy and standard business practice

While the Disaster Mitigation Act of 2000 ("DMA 2000") requires that local communities address only natural hazards, the Federal Emergency Management Agency (FEMA) recommends that local comprehensive mitigation plans address human-caused and technological hazards to the extent possible. In the 2012 Plan, Riverside OA addressed an expansive set of hazards. Upon review of the hazards since 2018, and the numbers of human-caused incidents, the OAPC will continue to address the large set of human-caused, technological, and natural hazards. Communication Failure and Cyber Attacks had been added to the 2023 MJLHMP list of hazards. In 2022, the OAPC revised the hazards changing Flu Pandemic to Pandemic and adding Failure to Aqueduct to further define and allow for expanded use of the hazard definitions.

In developing the original 2005 hazard list, the goal was to create a list by identifying all hazards that could potentially impact the Operational Area. This list was used as part of the planning process. Some of the disasters identified on the list were found to have a limited amount of supporting information about the potential impact, specific locations in the county where the hazard might arise, and the magnitude of that hazard on the economy, infrastructure, and residents of the County.

The threats of all hazards identified in the 2018 plan were reassessed to ensure that they were still viable. The same process was used for the 2023 update. The 2023 MJLHMP Steering Committee met to address each hazard. The impact on the public; responders; continuity of operations including delivery of services; property, facilities, and infrastructure; environment; economic condition of the jurisdiction (OA); and public confidence in the jurisdiction's (OA) governance were taken into consideration in analyzing the hazard rankings.

Support of Broader County Vision

The Riverside County MJLHMP supports the broader vision and values of the County of Riverside, along with the cities, special districts, and tribal leaders within the County. As stated in Riverside County General Plan of December 2015, Riverside County's vision is summarized by saying:

> ***"Riverside County is a family of special communities in a remarkable environmental setting."***
>
> *Our vision is based on values that provide the foundation for common ground that, in turn; underpin the General Plan's goals, policies, and actions. The people of Riverside County declare that they join together in holding the following values and seeking a community future based on them. It can be argued that our values are optimistic and very ambitious: that they require our best instincts to prevail. Of course-why would we seek less in shaping our communities? So, with that theme in mind, let us express the values that have motivated our community building and that will continue to do so in the future.*

- *Community*
- *Health*
- *Inter-relatedness*
- *Rights*
- *Responsibilities*
- *Risks*
- *Diversity*
- *Equity*
- *Valued Contributions*
- *Varied Communities*
- *Balance*
- *Participation*
- *Volunteerism*
- *Decision Making*
- *Creativity and Innovation*
- *Distinctiveness*
- *Livable Centers*
- *Housing*
- *Natural Environment*
- *Human-caused Environment*
- *Multi-Modal Transportation*
- *Employment*
- *Safety*
- *Planning Integration*
- *Communication and Information*
- *Quality Management*
- *Sustainability*
- *Recreation*
- *Healthy Food*
- *Costs*
- *Governmental Cooperation*
- *Youth in the Community*

Riverside County Operational Area Mission

"To protect lives, properties, economies, and enhance efforts through multi-agency and tribal collaboration while striving to maximize our use of standardizations, sharing of resources, and political support."

1.4 History of Multi-Jurisdictional Participants

History of Participating Cities, Tribes, Hospitals, and Districts

- Represented organizations from 24 cities,10 special districts, eight (8) school districts, 10 hospitals and one (1) tribe totaling 53 organizations participated in the 2005 MJLHMP.

- Represented organizations from 27 cities, 11 special districts, 14 school districts, and one (1) hospital totaling 53 organizations participated in the 2012 MJLHMP.

- Represented organizations from 26 cities, one (1) tribe, nine (9) school districts, one (1) hospital, and eight (8) special districts totaling 45 organizations participated in the 2018 MJLHMP.

- Represented organizations from 28 cities, one (1) tribe, five (5) school districts, and seven (7) special districts participating in the 2023 MJLHMP.

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Section 2.0 – Community Profile

2.1 History

Taking its name from the City of Riverside, Riverside County was formed in 1893 from a small portion of San Bernardino County and a larger part of San Diego County.

Although the county marks its political beginnings in 1893, the land was occupied long before Europeans and their descendants entered the areas by several Native American groups including the Serrano's, the Luisenos, the Cupeño's, the Chemehuevi, and the Cahuilla's. One of the first Caucasian travelers through the area was Juan Bautista de Anza who led an overland expedition in 1774.

In the late 18th century, the Spanish mission fathers of San Gabriel (Los Angeles County), San Juan Capistrano (Orange County), and San Luis Rey (San Diego) began colonizing the land and gradually used the interior valley in what is now western Riverside County for raising grain and cattle. During this period, Spain claimed all of California and Mexico.

In the early 1820s, Mexican opposition leaders pronounced themselves free from Spanish rule, and California came under Mexican jurisdiction. The missions and their lands were secularized beginning in 1834 and the land was transferred as "grants" to Californians who were citizens of Mexico. The first land grant in what is now Riverside County, Rancho Jurupa, was given to Juan Bandini in 1838.

In 1848, with the signing of the Treaty of Guadalupe Hidalgo, California became a territory of the United States, and in 1850 California became a state. This event generated a steady flow of settlers into the area, including gold miners, entrepreneurs, health-seekers, speculators, politicians, adventurers, people seeking religious freedom, and individuals who envisioned utopian colonies.

In May 1893, voters living within an area carved from San Bernardino County and San Diego County approved formation of Riverside County. On May 9, 1893, the county officially formed and began charting a course under its newly elected Board of Supervisors. The county's early years were linked to agriculture – yet commerce, construction, manufacturing, transportation, and tourism soon took hold. These industries contributed substantially to the region's rapid growth.

Recent years have brought dramatic population growth. Between 1980 and 1990, the number of residents grew by over 76 percent, making Riverside the fastest-growing county in California. By 1992, the County was home to over 1.3 million residents, more than the entire population of 13 states, among them Maine, Nevada, Hawaii, and New

Hampshire. Current population estimates are 2.3 million residents, making Riverside County the fourth largest county by population in the state and 10th largest in the U.S.

2.2 Geography and Climate

Riverside County is the fourth largest county in the State of California, stretching nearly 200 miles west to east and comprising over 7,200 square miles of fertile river valleys, low deserts, mountains, foothills, and rolling plains. Riverside County shares borders with densely populated Orange, San Diego, San Bernardino, and Imperial Counties. The county extends from within 14 miles of the Pacific Ocean, as the crow flies, to the Colorado River and La Paz County, Arizona.

Geographically

Riverside County is mostly desert in the central and eastern portions of the county and has a Mediterranean climate in the western portion of the County. The County lies inland of Los Angeles County and is bordered by Orange County to the west, San Bernardino County to the north, and San Diego County and Imperial County to the south.

Riverside County extends from the Santa Ana River at the eastern end of the Los Angeles basin, eastward to the Colorado River. It includes the desert regions of the Coachella Valley and Palm Springs, as well as the San Jacinto, Little San Bernardino, and Santa Rosa mountains. It contains portions of Anza-Borrego Desert State Park and Salton Sea State Recreation Area, as well as most of Joshua Tree National Park. Riverside County has five nationally protected areas: the Cleveland National Forest, Coachella Valley National Wildlife Refuge, and Joshua Tree National Park, a portion of the San Bernardino National Forest and the Santa Rosa and San Jacinto Mountains National Monument. The county has visitors all year round because of the varied climates and ability to visit mountains and deserts all in one day.

The county has a total area of 7,303.13 square miles (18,915.0 km2), of which 7,207.37 square miles (18,667.0 km2) (or 98.69%) is land and 95.76 square miles (248.0 km2) (or 1.31%) is water. At roughly 180 miles (290 km) wide in the east-west dimension, the area of the county is massive. Riverside County is roughly the size of the State of New Jersey in total area. The City of Blythe, adjacent to the Colorado River, is a three-hour drive from the county seat, Riverside.

There are at least three geomorphic provinces: the Inland Empire western portion, the Santa Rosa Mountains communities, and the desert region. Other subdivisions include tribal lands, the Colorado River communities, and the Salton Sea. The Inland Empire area of southern California is made up of the western portion of Riverside County.

Geographically from east to west, Riverside County is mostly desert, with high heat in the summer and comfortable weather in the winter. Most of Joshua Tree National Park is located within the eastern part of the county. Elevations range from 11,499 feet (3,505 m) at the top of the San Gorgonio Mountain to 220 ft. (-67.1 m) below sea level at the Salton Sea. As you move towards the west, the San Jacinto Mountains separate the desert from the valleys. The summit of Mount San Jacinto stands 10,834 feet above sea level, and the San Jacinto Mountains are the second highest mountain range in Southern California. The Santa Ana River travels from Mt. San Gorgonio for nearly 100 miles (160 km) through San Bernardino, Riverside, and Orange counties before it eventually spills into the Pacific Ocean at Newport Beach and Huntington Beach. The western portion of the county has a Mediterranean climate and is the most densely populated area. The Santa Rosa Mountains, as well as the Southern California portion of the Sonoran Desert, physically divide Riverside County from San Diego County.

Riverside County is home to a variety of endangered and protected species. Skillful planning and negotiation have resulted in the creation of several large habitat preserves, and the development of a multi-species habitat protection plan (MSHCP) for the western County area. The Plan protects 146 native species of plants, birds and animals and covers 1.26 million acres. The County is also participating in a MSHCP with the Coachella Valley Association of Governments in the Coachella Valley and surrounding mountains.

Famous resort cities of the Coachella Valley such as Indian Wells, La Quinta, Rancho Mirage, Palm Springs, and Palm Desert are located within Riverside County. Riverside County is also home to many famous concerts and sports tournaments. The Coachella Valley Music and Arts Festival is a two-weekend event that attracts 198 thousand attendees and affects the local economy by over 84 million dollars a year. Stagecoach is a country music festival that attracts about 190 thousand over a three-day period. Coachella is a music festival established musical artists as well as emerging artists and reunited groups and attracts about 750 thousand people over a six-day period. The BNP Paribas Open is the largest professional combined ATP and WTA tennis tournament in the world. It houses 96 single players and 32 teams within the two stadiums.

Another factor that brings people into Riverside County is the agriculture. There is an influx of farm workers according to the crop. Indio is the center of an important date growing region.

In the desert areas, there is an increase in population during the winter by snowbirds. Many of the desert visitors are elderly or retired and may have Access and Functional Needs requirements. The term snowbird is used to describe people from the U.S. Northeast, U.S. Midwest, or Canada who spend a large portion of winter in warmer locales such as California, Arizona, Florida, Texas, the Carolinas, or elsewhere along the Sun

Belt region of the southern and southwest United States, Mexico, and areas of the Caribbean.

Snowbirds are typically retirees, and business owners having second homes in warmer locations. Business owner snowbirds have businesses that can be easily moved from place to place, such as flea market and swap meet vendors. Many snowbirds travel and use Recreational Vehicles (RVs) as their secondary homes.

Climate

On average, there are 272 sunny days per year in Riverside County. The County average July high is around 95 degrees, and the January low is 43. Riverside County has on average 10 inches of rain per year. The US average is 38. Riverside County average snowfall is one (1) inch. The average US city gets 27 inches of snow per year. The number of days with any measurable precipitation is 30.

Table 2: Riverside County Climate

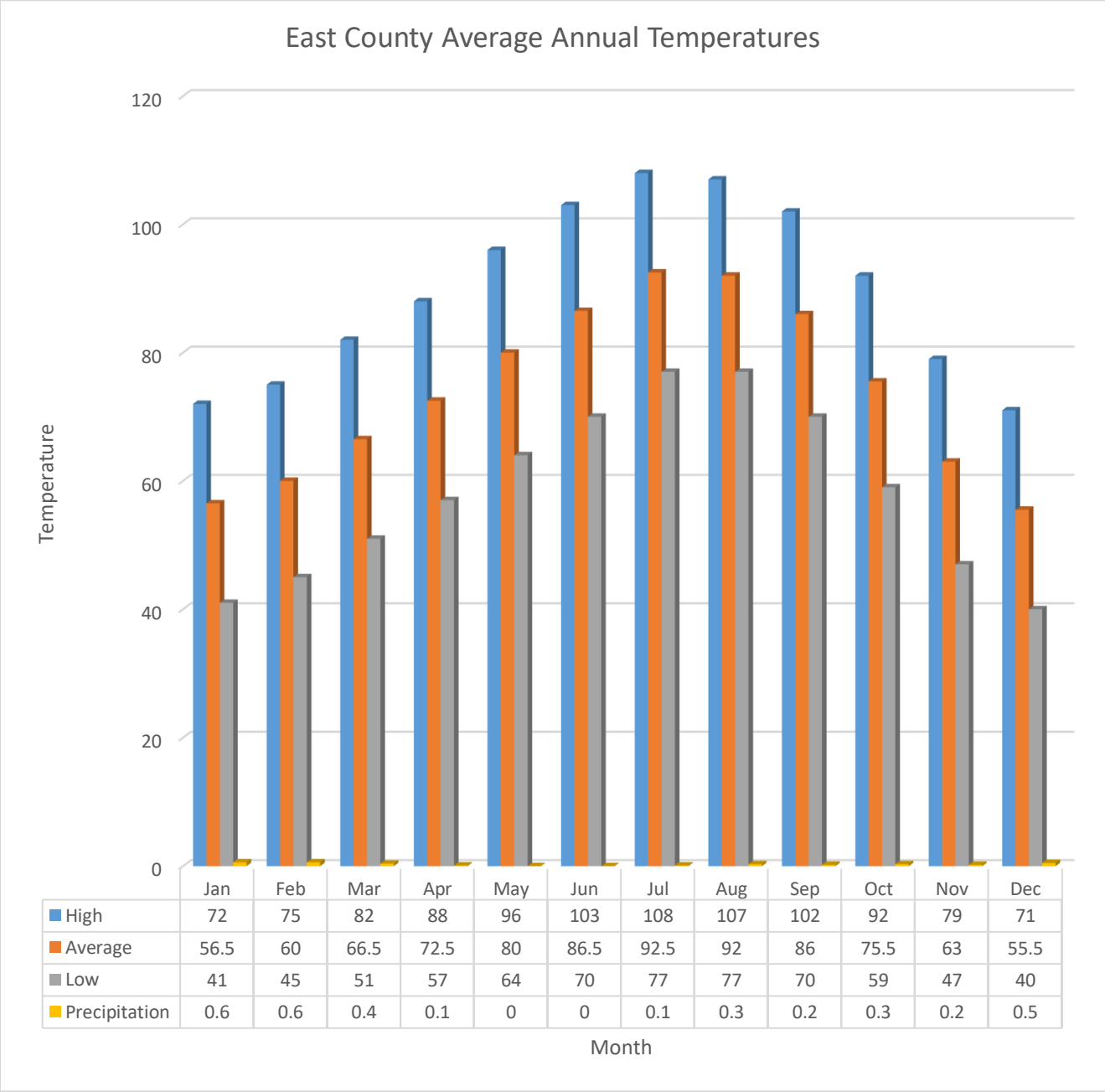
Climate	Riverside, CA	United States
Rainfall (in.)	11.3	38.1
Snowfall (in.)	0.0	27.8
Precipitation Days	34	106.2
Sunny Days	277	205
Avg. High	94.2	85.8
Avg. Low	42.4	21.7
UV Index	5.7	4.3
Elevation ft.	827	2,443

*Table is current as of December 2022

The information regarding the averages of the County does not accurately reflect the drastic differences in climate between the east and west portions of the County. The east portion of the County has a hot desert climate with average high summer temperatures over 100 degrees Fahrenheit. However, the average high summer temperatures for the

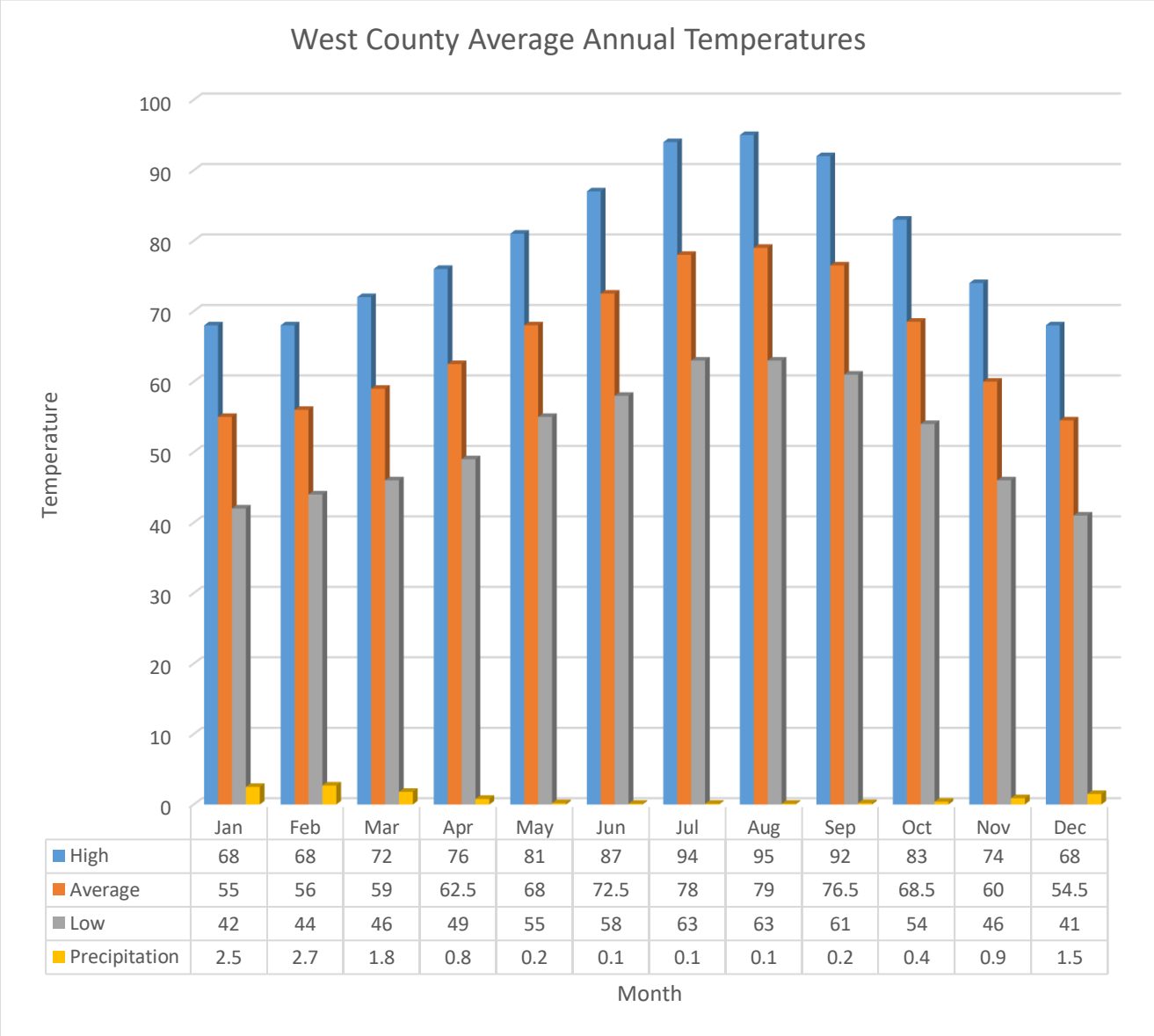
west portion of the County are below 95 degrees Fahrenheit. The following charts represent the two sides of the county:

Figure 1: East County Average Annual Temperature



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
High	72	75	82	88	96	103	108	107	102	92	79	71
Average	56.5	60	66.5	72.5	80	86.5	92.5	92	86	75.5	63	55.5
Low	41	45	51	57	64	70	77	77	70	59	47	40
Precipitation	0.6	0.6	0.4	0.1	0	0	0.1	0.3	0.2	0.3	0.2	0.5

Figure 2: West County Average Annual Temperature



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
High	68	68	72	76	81	87	94	95	92	83	74	68
Average	55	56	59	62.5	68	72.5	78	79	76.5	68.5	60	54.5
Low	42	44	46	49	55	58	63	63	61	54	46	41
Precipitation	2.5	2.7	1.8	0.8	0.2	0.1	0.1	0.1	0.2	0.4	0.9	1.5

*Charts are based on the most current information gathered from NOAA as of December 2022

Source:
http://www.bestplaces.net/climate/city/california/riverside
https://www.ncdc.noaa.gov/cdo-web/datatools/normals

2.3 Population Trends

Population growth in Riverside County has been quite rapid over the past two decades as can be seen in Figure 3 on the next page. According to the California Department of Finance, the population grew from approximately 1.2 million 1990 to nearly 2.45 million as of 2022. During this period, the county's population more than doubled, making it the fastest growing county in California.

Table 3: Unincorporated Area Population

RIVERSIDE COUNTY

POPULATION CHARACTERISTICS

2020	2,418,185
2019	2,395,327
2018	2,372,473
2017	2,349,619
2016	2,326,765
2015	2,303,911
2014	2,281,057
2013	2,258,203
2012	2,235,349
2011	2,212,495
2010	2,189,641
1990	1,170,410
1980	663,166
1970	459,074

2020 Racial & Ethnic Population*2

	Number	Percent
White	800,972	33.20%
African American	146,145	6.10%
Asian	158,546	6.60%
American Indian/Alaska Native	8,586	0.40%
Hawaiian and Pacific Islander	6,302	0.30%
Other Races	7,083	0.30%
Two or More Races	70,535	2.90%
Hispanic	1,211,185	50.3
Total	2,409,331	100%

2020 Population by Age *1

	Number	Percent
<5	150,424	6.24%
9-May	162,846	6.75%
14-Oct	184,845	7.67%
15-19	176,653	7.33%
20-24	161,765	6.71%
25-34	333,166	13.82%
35-44	316,169	13.12%
45-54	298,690	12.39
55-59	147,480	6.12%
60-64	131,815	5.47%
65-74	201,114	8.34%
75-84	105,336	4.37%
85+	39,028	1.61%

Vital Statistics *4

Total Births	Birth Rate	Total Death	Death Rate
28,383	11.46	19,696	7.95

2020 Voter Registration *3

	Number	Percent
Democrat	530,258	40.51%
Republican	409,584	31.29%
Other	101,099	7.72%
No Party Preference	267,992	20.47%
Total Registered	**1,308,933**	**100%**

2020 Population by Sex *1

	Number	Percent	Median Age
Male	1,207,397	50.11%	35.4
Female	1,201,934	49.88%	36.7

*Table was developed by EMD GIS SPECIALIST in 2022 and is the most current information available. Sources from: 1-U.S. Census Bureau; 2-California State Department of Finance; 3-Riverside County Projections; 4-California State Department of Finance

Table 4: Historical Population Estimates for Riverside County Cities

RIVERSIDE COUNTY CENTER FOR DEMOGRAPHICS

Riverside County Economic Development Agency
P.O. Box 1180 * Riverside, CA 92502 * (951) 955-8916

RIVERSIDE COUNTY
Historical Population Estimates, with 2010 Census Counts

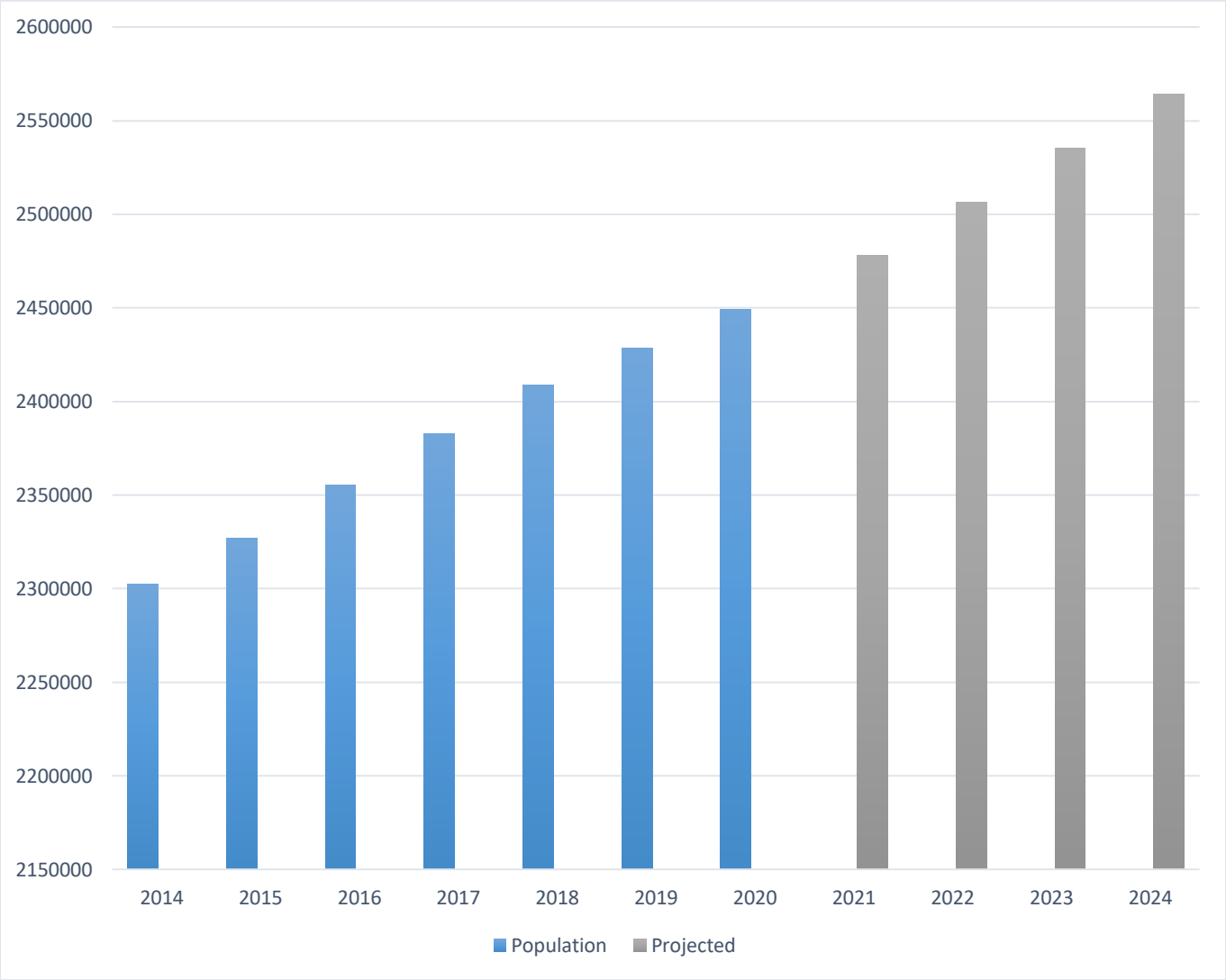
City	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Banning	29,603	29,818	30,132	30,327	30,489	30,668	30,836	31,068	31,091	31,142
Beaumont	36,877	38,201	39,317	40,472	41,659	43,370	44,821	46,179	47,776	49,630
Blythe	20,817	20,121	20,556	19,831	19,240	19,183	19,725	19,660	19,524	19,256
Calimesa	7,879	7,923	7,968	7,988	8,107	8,214	8,378	8,637	8,793	8,830
Canyon Lake	10,561	10,623	10,646	10,620	10,654	10,709	10,799	10,891	10,970	10,995
Cathedral City	51,200	51,604	52,450	53,002	53,321	53,687	54,040	54,557	53,104	53,320
Coachella	40,704	41,517	42,385	43,485	44,415	44,784	45,135	45,551	46,317	46,885
Corona	152,374	153,665	156,065	158,944	161,472	162,746	163,931	167,759	166,154	166,723
Desert Hot Springs	25,938	27,393	27,947	28,268	28,485	28,664	28,885	29,111	29,525	29,683
Eastvale	*	54,263	55,885	57,478	59,421	60,881	63,214	64,613	65,416	65,611
Hemet	78,657	79,412	79,642	79,523	79,969	80,433	81,109	81,868	84,969	85,159
Indian Wells	4,958	5,012	5,097	5,172	5,237	5,306	5,375	5,450	5,342	5,379
Indio	76,036	77,168	79,087	82,986	84,167	86,142	87,382	88,718	88,989	90,087
Jurupa Valley	*	*	96,077	96,207	96,594	97,537	98,920	101,315	104,728	106,115
Lake Elsinore	51,821	52,484	53,437	55,943	57,282	59,049	60,876	62,092	62,536	63,154
La Quinta	37,467	37,784	38,129	38,278	38,873	39,485	40,176	40,677	40,217	40,389
Menifee	77,519	79,472	81,469	83,553	85,114	86,910	88,524	90,660	92,157	94,732
Moreno Valley	193,365	195,200	198,246	200,389	201,713	203,183	204,712	206,750	205,549	207,181
Murrieta	103,466	104,636	106,978	109,112	110,073	111,298	112,232	114,914	113,313	114,193
Norco	27,063	27,062	27,295	26,962	26,950	26,297	26,776	26,882	26,557	26,426
Palm Desert	48,445	48,957	49,043	48,817	49,113	49,526	50,154	50,740	52,726	52,911
Palm Springs	44,552	44,943	45,356	45,596	45,983	46,391	46,866	47,379	47,148	47,296
Perris	68,386	69,693	70,346	70,870	71,963	72,726	74,005	75,739	79,127	79,856
Rancho Mirage	17,218	17,454	17,586	17,697	17,803	17,943	18,093	18,295	18,708	18,886
Riverside	303,871	307,207	311,169	315,400	317,781	320,868	323,666	326,792	325,417	326,427
San Jacinto	44,199	44,616	45,338	45,999	46,424	46,841	47,348	47,925	49,113	50,431
Temecula	100,097	101,507	103,211	104,494	105,803	108,292	109,635	111,024	111,680	111,879
Wildomar	32,176	32,543	33,030	33,589	34,176	34,655	35,034	35,782	36,698	37,126
Incorporated	1,685,249	1,760,278	1,883,887	1,911,002	1,932,281	1,955,788	1,980,647	2,011,028	377,118	382,444
Unincorporated	504,392	452,596	355,828	355,288	359,418	362,974	367,566	373,755	2,023,644	2,039,702
County Total	2,189,641	2,212,874	2,239,715	2,266,290	2,291,699	2,318,762	2,348,213	2,384,783	2,400,762	2,422,146

Source: California Department of Finance

*Current as of May 2020

Source
https://rivcoeda.org/Portals/0/demographicReports/Population%20Reports/Historical%20Estimates%202010-2019.pdf?ver=2020-05-06-111746-313

Figure 3: Riverside County Population Growth - 2009 – 2019



Source: Riverside County Center for Demographics 2021/ State of California Department of Finance

Table 5 below displays Riverside County's population change and the components of this population change from 2010 through a projection of 2059. Net migration (in-migration minus out-migration) has accounted for the majority of the of the population growth for Riverside County for the past four (4) decades.

Population growth has slowed in recent years but remained relatively high. Migration continues to be positive in the County, though at slower rates than early in the decade. Population growth will accelerate over the forecast but does not approach the previous peak levels.

Table 5: Riverside County Population Change (2010-2034)

RIVERSIDE COUNTY

AVERAGE COMPONENTS OF POPULATION CHANGE

YEAR – 2010 - 2034

Years	Change	Births	Deaths	Net Migration
2010-2014	22912	26516	13016	9412
2015-2019	24437	29225	17116	12328
2020-2024	28921	28949	19880	19852
2025-2029	26832	29618	22732	19946
2030-2034	22541	29471	25366	18436
2035-2039	18453	28631	27936	17758

Source: CA Department of Finance 2021

2.4 Economy

California Department of Transportation Long-Term Social-Economic Forecast: Riverside

Riverside County is the fourth largest county in California in terms of total land area. Riverside County has a population of approximately 2.4 million people and a total of 622,141 wage and salary jobs. The income per capita is $32,079, and the median house income is $76,066

In 2021, total employment increased by 4.5 percent within Riverside County. The unemployment rate averaged 10.0 percent in 2020 and was projected to average 7.5 percent in 2021.

In 2020, job growth was strongest in transportation. education and healthcare (+4,500 jobs), leisure and hospitality (+3,800 jobs), and transportation and warehousing (+3,300 jobs). Job losses were not observed in any major sector.

Over the past five years, the population has increased at an average annual rate of 1.2 percent. A substantial portion of this growth was the result of net migration, as an average of 12,200 each year.

Forecast Highlights

•On an annual average basis, 32,400 non-farm jobs will be restored in Riverside County during 2021.

• A full labor market recovery is expected by 2022.

• Employment gains in 2021 will be largest in leisure services, professional business services, private education and healthcare, and retail trade.

• The unemployment rate averaged 10.0 percent in 2020. It is expected to average 7.5 percent in 2021.

• The population is expanding faster than broader Southern California, and this trend will continue.

• Because of affordable home prices and job creation, net migration will remain positive between 2021 and 2026.

• Over the 2021-2026 forecast period, more homes will be built than during the 2015-2020 period.

• Home prices increased unexpectedly in 2020, rising by 10 percent. Prices are forecast to increase by another 7 to 9 percent in 2021.

• More than 19 million square feet of new industrial space is under construction. This paves the way for substantial logistics industry growth over the next 5 years.

Source: https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/data-analytics-services/transportation-economics/socioeconomic-forecasts/2021/2021-pdf/riverside-profile-a11y.pdf

Figure 4: Riverside County Economic and Labor Force Characteristics

RIVERSIDE COUNTY

ECONOMIC AND LABOR FORCE CHARACTERISTICS

Labor Force Participation (*1)

Year	Labor Force	Employed	Unemployed	Unemployment Rate
2007	903,800	849,400	54,300	6.0%
2008	912,100	834,700	77,400	8.5%
2009	916,600	793,600	123,000	13.4%
2010	913,800	779,500	134,300	14.7%
2011	938,400	810,600	127,800	13.6%
2012	937,300	824,500	112,700	12.0%
2013*	944,500	828,800	115,600	12.2%

* Preliminary August 2013

Employment/Jobs Projections (*3)

2020	927,300
2035	1,285,284

* Jobs within county

2011 Employment/Jobs by Industry Sector (*2)

Agriculture, Forestry, Fishing and Hunting	13,783
Mining, Quarrying, and Oil and Gas Extraction	405
Utilities	4,488
Construction	33,602
Manufacturing	39,733
Wholesale Trade	22,625
Retail Trade	82,169
Transportation and Warehousing	20,453
Information	7,105
Finance and Insurance	10,944
Real Estate and Rental and Leasing	7,613
Professional, Scientific, and Technical Services	18,789
Management of Companies and Enterprises	2,937
Administration & Support, Waste Mngt and Remediation	35,130
Educational Services	67,761
Health Care and Social Assistance	61,087
Arts, Entertainment, and Recreation	19,543
Accommodation and Food Services	68,997
Other Services (excluding Public Administration)	29,384
Public Administration	34,922
Total All Jobs	**581,470**

*Jobs within county

Median Household Income

2000	$ 42,887 (*4)
2011	$ 58,365 (*5)

Taxable Sales in 1,000s of Dollars (*6)

Year	Total
2003	$21,709,135
2004	$25,237,148
2005	$28,256,491
2006	$29,816,237
2007	$29,023,609
2008	$26,003,595
2009	$22,227,877
2010	$23,152,780
2011	$25,641,497

Sources: (*1) CA Employment Development Department (County residents working anywhere. Data are not seasonally adjusted)
(*2) U.S. Census Bureau Local Employment Dynamics
(*3) Riverside County Projections 2010 (RCP10)
(*4) Decennial Census, US Census Bureau (in 1999 inflation-adjusted dollars)
(*5) 2007-2011 American Community Survey 5-Year Estimates (in 2011 inflation-adjusted dollars)
(*6) State Board of Equalization
Note: Totals might not add up due to rounding.

*Chart was developed by EMD GIS Specialist in 2023 and is the most current information available
Source:
http://gis.rivcoit.org/Portals/0/Documents/rcd/progress_reports/pr_2013/riverside_county.pdf

Figure 5: Annual Labor Force and Employment Averages

Riverside County Economic Development Agency
P.O. Box 1180 * Riverside, CA 92502 * (951) 955-8916

ANNUAL LABOR FORCE AND EMPLOYMENT AVERAGES
County of Riverside

Year	Civilian Labor Force	Employment	Unemployment Number	Unemployment Percent
2002	750,400	701,800	48,600	6.5
2003	781,700	730,700	51,100	6.5
2004	820,900	771,600	49,300	6
2005	854,300	808,100	46,100	5.4
2006	886,300	841,700	44,600	5
2007	907,400	852,900	54,500	6.0
2008	916,700	838,800	77,900	8.5
2009	916,600	793,600	123,000	13.4
2010	913,400	779,100	134,300	14.7
2011	938,400	810,600	127,800	13.6
2012	944,500	828,800	115,600	12.2
2013	953,200	855,300	97,900	10.3
2014	1,011,500	928,200	83,400	8.2
2015	1,035,200	965,500	69,600	6.7
2016	1,047,800	983,800	64,000	6.1
2017	1,072,500	1,016,200	56,300	5.2
2018	1,092,400	1,044,600	47,800	4.4
2019	1,104,000	1,057,900	46,100	4.2

2020 Monthly Labor Force and Employment Data **
County of Riverside

Month	Civilian Labor Force	Employment	Unemployment Number	Unemployment Percent
January	1,106,100	1,059,300	46,800	4.2
February	1,104,700	1,059,000	45,700	4.1
March	1,098,800	1,039,700	59,100	5.4
April*	1,100,100	931,300	168,800	15.3
May				
June				
July				
August				
September				
October				
November				
December				

* Preliminary data

** Labor force data for all geographic areas now reflect the March 2012 benchmark and Census 2010 population controls at the state level.

Data Source: State of California Employment Development Department

Source: Riverside County Economic Development Agency

https://rivcoeda.org/Portals/0/demographicReports/Employ/Apr%20Employ%2020.pdf?ver=2020-05-22-095416-947

Figure 6: County of Riverside Major Employers

RIVERSIDE COUNTY CENTER FOR DEMOGRAPHICS

Riverside County Economic Development Agency
P.O. Box 1180 * Riverside, CA 92502 * (951) 955-8916

Major Employers
County of Riverside

Employer	Number of Employees	Location	Description
County of Riverside	21,672	Countywide	County Government
Amazon	10,500	Countywide	E-Commerce
University of California, Riverside	9,770	Riverside	University
March Air Reserve Base	9,600	March ARB	Military Reserve Base
Stater Bros	8,304	Countywide	Retail Grocery
Kaiser Permanente Riverside Medical Center	5,700	Riverside	Hospital
Pechanga Resort & Casino	5,078	Temecula	Resort Casino
Walmart	4,931	Countywide	Department Stores
Corona-Norco Unified School District	4,903	Corona	School District
Ross Dress For Less	4,321	Countywide	Department Stores
Hemet Unified School District	7,046	Hemet	School District
Riverside Unified School District	4,000	Riverside	School District
Eisenhower Medical Center	3,900	Rancho Mirage	Hospital
Moreno Valley Unified School District	3,755	Moreno Valley	School District
Lake Elsinore Unified School District	3,717	Lake Elsinore	School District
Desert Sands Unified School District	3,437	La Quinta	School District
Jurupa Unified School District	3,250	Jurupa Valley	School District
Temecula Valley Unified School District	3,057	Temecula	School District
Palm Springs Unified School District	2,737	Palm Springs	School District
Murrieta Valley Unified School District	2,500	Murrieta	School District
City of Riverside	2,470	Riverside	City Government
Riverside Community College District	2,342	Riverside	Community College District
JW Marriott Desert Springs Resort & Spa	2,304	Palm Desert	Resort & Spa
Agua Caliente Band of Cahuilla Indians	2,300	Palm Springs	Tribal Government/Casinos
Morongo Casino, Resort, & Spa	2,300	Cabazon	Resort Casino
Cal Baptist University	2,285	Riverside	University
Riverside Community Hospital	2,200	Riverside	Hospital
Desert Regional Medical Center	1,962	Palm Springs	Hospital
Alvord Unified School District	1,868	Riverside	School District
Coachella Valley Unified School District	1,805	Thermal	School District
Riverside County Office of Education	1,653	Riverside	Education
Mt San Jacinto College	1,479	San Jacinto	Community College District
Corona Regional Medical Center	1,250	Corona	Hospital
Medline Professional Hospital Supply	1,204	Temecula	Medical and Hospital Equipment and Supplies
Fantasy Springs Resort and Casino and Tribe	1,202	Indio	Tribal Government/Casinos
UTC Aerospace Systems	1,200	Riverside	Aerospace Product and Parts Manufacturing
California Rehabilitation Center	1,200	Norco	Level II Prison
Fantasy Springs Resort Casino	1,153	Indio	Resort Casino
Parkview Community Hospital Medical Center	1,149	Riverside	Hospital
Ironwood State Prison	1,081	Blythe	Level I & III Prison

Source: Employers Listed, Websites & Public Records, 2019

Table 6: Employment Growth Projections of Riverside and San Bernardino County

Industry Title	Base Year Employment Estimate 2018[2][3]	Projected Year Employment Estimate 2028	Numeric Change 2018-2028	Percentage Change 2018-2028
Total Employment	1,610,500	1,773,100	162,600	10.1%
Self Employment[4]	88,400	96,400	8,000	9.0%
Private Household Workers[5]	900	1,200	300	33.3%
Total Farm	14,500	14,800	300	2.1%
Total Nonfarm	1,506,700	1,660,700	154,000	10.2%
Mining and Logging	1,200	1,100	-100	-8.3%
Construction	105,200	119,000	13,800	13.1%
Construction of Buildings	15,600	17,700	2,100	13.5%
Heavy and Civil Engineering Construction	12,500	13,900	1,400	11.2%
Specialty Trade Contractors	77,000	87,400	10,400	13.5%
Foundation, Structure, and Building Exterior Contractors	24,000	27,200	3,200	13.3%
Building Equipment Contractors	26,800	31,600	4,800	17.9%
Building Finishing Contractors	17,800	19,800	2,000	11.2%
Manufacturing	101,100	98,400	-2,700	-2.7%
Durable Goods Manufacturing	65,100	63,000	-2,100	-3.2%
Fabricated Metal Product Manufacturing	15,000	15,400	400	2.7%
Nondurable Goods Manufacturing	36,000	35,500	-500	-1.4%
Trade, Transportation, and Utilities	379,600	434,800	55,200	14.5%
Wholesale Trade	65,500	69,200	3,700	5.6%
Merchant Wholesalers, Durable Goods	38,500	40,000	1,500	3.9%
Merchant Wholesalers, Nondurable Goods	24,000	26,800	2,800	11.7%
Retail Trade	181,200	183,400	2,200	1.2%
Motor Vehicle and Parts Dealers	26,000	26,300	300	1.2%
Automotive Parts, Accessories, and Tire Stores	7,500	7,200	-300	-4.0%
Building Material and Garden Equipment and Supplies Dealers	14,300	14,300	0	0.0%
Food and Beverage Stores	34,100	37,200	3,100	9.1%
Health and Personal Care Stores	11,600	12,100	500	4.3%
Clothing and Clothing Accessories Stores	21,000	18,700	-2,300	-11.0%
Clothing Stores	15,800	14,100	-1,700	-10.8%
General Merchandise Stores	36,000	35,900	-100	-0.3%
Transportation, Warehousing, and Utilities	132,900	182,200	49,300	37.1%
Utilities	4,900	4,900	0	0.0%
Transportation and Warehousing	128,000	177,300	49,300	38.5%
Truck Transportation	27,000	33,600	6,600	24.4%
General Freight Trucking	21,200	27,100	5,900	27.8%
Couriers and Messengers	14,300	20,000	5,700	39.9%
Warehousing and Storage	68,900	104,700	35,800	52.0%
Information	11,400	12,100	700	6.1%
Publishing Industries (except Internet)	1,600	1,500	-100	-6.3%

Telecommunications	5,300	5,400	100	1.9%
Financial Activities	43,800	45,300	1,500	3.4%
Finance and Insurance	24,600	24,700	100	0.4%
Credit Intermediation and Related Activities	13,400	12,800	-600	-4.5%
Depository Credit Intermediation	9,000	7,800	-1,200	-13.3%
Nondepository Credit Intermediation	2,900	3,100	200	6.9%
Insurance Carriers and Related Activities	9,400	10,300	900	9.6%
Insurance Carriers	3,200	3,200	0	0.0%
Real Estate and Rental and Leasing	19,300	20,600	1,300	6.7%
Real Estate	13,400	14,800	1,400	10.4%
Professional and Business Services	151,400	165,900	14,500	9.6%
Professional, Scientific, and Technical Services	42,000	47,100	5,100	12.1%
Management of Companies and Enterprises	8,300	8,400	100	1.2%
Administrative and Support and Waste Management and Remediation Services	101,000	110,400	9,400	9.3%
Administrative and Support Services	97,100	105,800	8,700	9.0%
Employment Services	43,100	47,500	4,400	10.2%
Investigation and Security Services	16,100	17,300	1,200	7.5%
Services to Buildings and Dwellings	20,300	22,600	2,300	11.3%
Educational Services (Private), Health Care, and Social Assistance	239,500	277,900	38,400	16.0%
Educational Services (Private)	19,400	21,700	2,300	11.9%
Colleges, Universities, and Professional Schools	6,300	7,200	900	14.3%
Health Care and Social Assistance	220,100	256,200	36,100	16.4%
Ambulatory Health Care Services	74,900	92,600	17,700	23.6%
Offices of Physicians	23,100	25,800	2,700	11.7%
Hospitals (Private)	40,200	44,600	4,400	10.9%
Nursing and Residential Care Facilities	27,200	31,500	4,300	15.8%
Leisure and Hospitality	170,600	191,200	20,600	12.1%
Arts, Entertainment, and Recreation	19,800	21,300	1,500	7.6%
Accommodation and Food Services	150,900	170,000	19,100	12.7%
Accommodation	18,400	17,900	-500	-2.7%
Food Services and Drinking Places	132,500	152,000	19,500	14.7%
Restaurants and Other Eating Places	128,100	147,500	19,400	15.1%
Other Services (excludes 814-Private Household Workers)	45,800	48,300	2,500	5.5%
Repair and Maintenance	17,300	17,700	400	2.3%
Personal and Laundry Services	12,900	14,500	1,600	12.4%
Government	257,200	266,700	9,500	3.7%
Federal Government	20,700	21,000	300	1.4%
State and Local Government	236,500	245,700	9,200	3.9%
State Government	30,600	32,500	1,900	6.2%
State Government Education	12,800	14,200	1,400	10.9%
State Government Excluding Education	17,800	18,300	500	2.8%
Local Government	205,900	213,300	7,400	3.6%
Local Government Education	125,300	128,700	3,400	2.7%
Local Government Excluding Education	80,600	84,600	4,000	5.0%

Source: U.S. Bureau of Labor Statistics, Employment Projections Program.

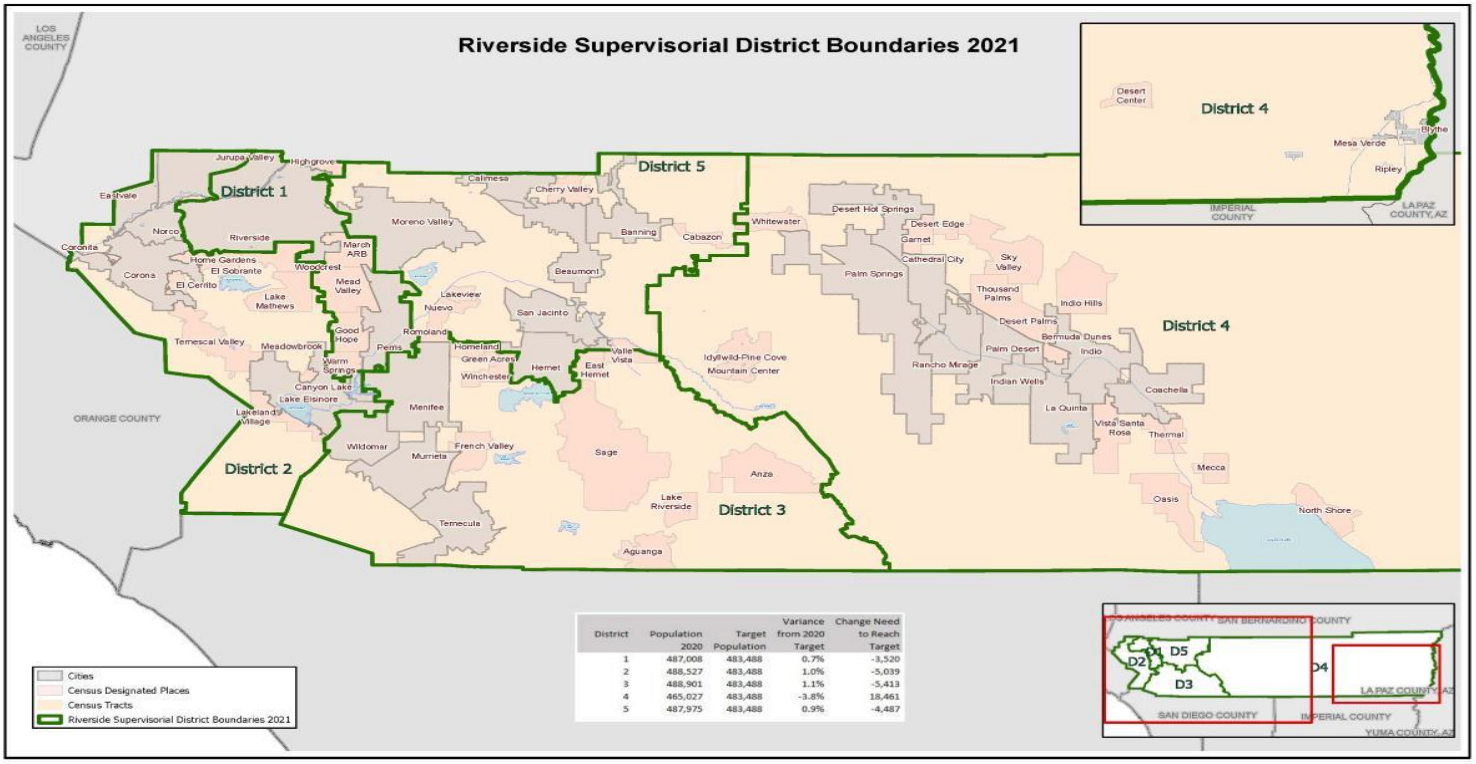
Governing Body

Riverside County is governed by a five-member Board of Supervisors. By law, Supervisorial district boundaries are adjusted every ten years based on population changes reported by the U.S. Census Bureau. Map 1 outlines the current Supervisorial Districts.

In 2020, the population by districts is the following:

- District 1 (Kevin Jeffries): 487,008
- District 2 (Karen Spiegel): 488,527
- District 3 (Chuck Washington): 488,901
- District 4 (Manuel Perez): 465,027
- District 5 (Yxstian Gutierrez): 487,975

Map 1: Riverside County Supervisor Districts



District	Population 2020	Target Population	Variance from 2020 Target	Change Need to Reach Target
1	487,008	483,488	0.7%	-3,520
2	488,527	483,488	1.0%	-5,039
3	488,901	483,488	1.1%	-5,413
4	465,027	483,488	-3.8%	18,461
5	487,975	483,488	0.9%	-4,487

2.5 Land Use and Development Trends

Existing land use within Riverside County is a mosaic of varying types of uses, ownership, character, and intensity. Uses include:

Figure 7: Land Use Designation Key

Foundation Component	Area Plan Designation	
Agriculture	Agriculture	
Rural	Rural Residential (5 acre min. lot size) Rural Mountainous (10 acre min. lot size) Rural Desert (10 acre min, lot size)	
Rural Community	Estate Density Residential (2 acre min. lot size) Very Low Density Residential (1 acre min. lot size) Low Density Residential (one-half acre min. lot size)	
Open Space	Open Space-Conservation Open Space-Conservation Habitat Open Space-Recreation	Open Space-Rural Open Space-Water Open Space-Mineral Resources
Community Development	Estate Density Residential (2 acre min. lot size) Very Low Density Residential (1 acre min. lot size) Low Density Residential (one-half acre min. lot size) Medium Density Residential (2-5 units per acre) Medium High Density Residential (5-8 units per acre) High Density Residential (8-14 units per acre) Very High Density Residential (14-20 units per acre) Highest Density Residential (20-plus units per acre) Commercial Retail	Commercial Tourist Commercial Office Community Center Light Industrial Heavy Industrial Business Park Public Facilities Mixed Use Area

*https://planning.rctlma.org/Portals/14/Ch03_Land%20Use_FINAL%209-28-21.pdf

While population growth continues, so does the need for further development. There are Land Use policies and elements within the Riverside County General Plan to help assure orderly development.

In addition, the Local Agency Formation Commission (LAFCO) of Riverside County is tasked with the mission to provide an orderly pattern of growth that reconciles the varied needs of the County. One of the fundamental principles of LAFCO is to ensure the establishment of an appropriate and logical municipal government structure for the distribution of efficient and appropriate public services.

LAFCO Land Use Objectives include:

- To encourage the orderly formation of local governmental agencies
- To preserve agricultural land resources
- To discourage urban sprawl

Hazard risk and its impact on changes in development

While the Riverside County continues to expand and grow in population, the OA continues to conform to standards and best practices included standards for building, fire, and safety code. There has been no development within Riverside County unincorporated areas that have increased hazard risk or vulnerability since the previous plan was adopted in 2018. Please refer to jurisdictional LHMP annexes for hazard impacts on new development within city jurisdictional areas.

Historical examples of development in Riverside County

Keller Crossing was approved on October 9, 2013. This “Green Concept” environment set to create a mixed-use pedestrian-friendly community that is based on sustainability. This 200-acre property is located in western Riverside County, near Murrieta.

Completed in July 2013, Temecula added a new hospital within its city limits to accommodate the needs of its residents. The medical facility sits on a 35-acre parcel and holds a total of 320 beds.

Belle Terre is a 342.3- acre residential community located in Riverside’s French Valley. This development proposed a community of up to 1,282 homes. The Zoning Ordinance was approved on December 1, 2014.

The Wine Country on the outskirts of Temecula is continuing to see a lot of development activity. Recognizing this, the Board of Supervisors adopted the Wine Country Community Plan in 2014, which consisted of revisions to the County General Plan, new design guidelines, and new zone classifications. The area has been classified as a Wine County Zone with the purpose of encourage agricultural cultivation, vineyards, wineries, equestrian uses, preserve the wine-making atmosphere, estate living, equestrian lifestyle and protect this area and its residents from incompatible uses which could result in reduced agricultural productivity and increased urbanization within the policy area.

The Cabazon Outlet Mall in has expanded to add an additional 50 stores, an increase of 30 percent. The expansion was completed in 2014 and it included: 50 new retail stores, a 1,100-parking space structure, wider walkways and improved landscaping. The Cabazon Outlet Mall is now a 650,000 square foot complex with a total of 180 stores, making it one of the largest outlet centers in the state.

In February 2015, the Colina del Oro housing plan was initiated and approved by Riverside County Local Agency Formation Commission (LAFCO). It is a master-planned community consisting of both single and multi-family residential units. Within the community an array of recreational facilities would be built such as a community park,

community center, trails, and an open space park. 490 dwellings were planned within the 11.4-acre community.

A new Kaiser Permanente medical office building opened in November 2022 on a 37-acre parcel of land at 28150 Keller Road Murrieta. A 254-bed hospital and parking structure is scheduled to be completed late 2023.

Figure 8: Housing and Household Characteristics

RIVERSIDE COUNTY

HOUSING & HOUSEHOLD CHARACTERISTICS

Housing Units

1970	169,757	(*1)
1980	295,069	(*1)
1990	483,847	(*1)
2000	584,674	(*1)
2001	595,606	(*2)
2002	613,338	(*2)
2003	633,749	(*2)
2004	659,388	(*2)
2005	689,340	(*2)
2006	721,699	(*2)
2007	753,286	(*2)
2008	772,480	(*2)
2009	779,077	(*2)
2010	800,707	(*1)
2011	804,913	(*2)
2012	807,970	(*2)
2013	812,234	(*2)

Projections

2020	955,853	(*3)
2035	1,228,188	(*3)

Housing Units by Type

	2010 (*1)	Percent	2013 (*2)	Percent
Single Detached	543,209	67.8%	551,857	67.9%
Single Attached	50,784	6.3%	51,041	6.3%
Multi-Family: 2 to 4	38,409	4.8%	38,530	4.7%
Multi-Family: 5 Plus	89,577	11.2%	91,784	11.3%
Mobile Homes	78,728	9.8%	79,022	9.7%
Total Units	800,707	100.0%	812,234	100.0%
Occupancy	686,260	85.7%	696,290	85.7%
Vacancy	114,447	14.3%	115,944	14.3%

Median Home Price (*4)

2002	$202,914
2003	$248,780
2004	$331,106
2005	$400,000
2006	$420,000
2007	$395,000
2008	$260,000
2009	$190,000
2010	$200,000
2011	$195,000
2012	$210,000
2013*	$264,750

*August 2013

Persons Per Household

2000	2.98	(*1)
2010	3.14	(*1)
2013	3.19	(*2)

Housing Unit Building Permits (*5)

Year	Single-Family Structure	All Multi-Family Structure	Total Units
1995	7,378	182	7,560
1996	7,127	472	7,599
1997	8,042	938	8,980
1998	9,671	1,868	11,539
1999	11,823	1,472	13,295
2000	13,323	1,702	15,025
2001	16,778	2,234	19,012
2002	20,912	1,343	22,255
2003	25,424	4,929	30,353
2004	29,182	4,264	33,446
2005	30,350	4,023	34,373
2006	20,882	3,883	24,765
2007	9,717	2,617	12,334
2008	3,820	1,943	5,763
2009	3,406	666	4,072
2010	4,027	520	4,547
2011	2,275	989	3,264
2012	3,107	945	4,052
2013*	2,840	858	3,698

* Preliminary August 2013

Sources: (*1) Decennial Census, US Census Bureau
(*2) January Estimate, CA State Dept. of Finance.
(*3) Riverside County Projections 2010 (RCP10)
(*4) DataQuick Reports
(*5) US Department of Housing & Urban Development, State of the Cities Data Systems
Note: Totals might not add up due to rounding.

*Chart was developed by EMD GIS Specialist in 2013 and is the most current information available

Source:
http://gis.rivcoit.org/Portals/0/Documents/rcd/progress_reports/pr_2013/riverside_county.pdf

Table 7: Housing Projections by City

County	Jurisdiction	Population		Households		Employment	
		2016	2045	2016	2045	2016	2045
Riverside	Norco city	27,100	27,300	7,100	7,100	15,200	22,100
Riverside	Palm Desert city	50,400	64,100	23,100	32,300	43,300	54,800
Riverside	Palm Springs city	47,100	61,600	23,100	31,300	31,900	42,500
Riverside	Perris city	74,900	121,000	17,200	33,800	16,100	26,400
Riverside	Rancho Mirage city	18,200	25,200	9,000	13,000	16,600	21,200
Riverside	Riverside city	325,300	395,800	94,500	115,100	145,400	188,700
Riverside	San Jacinto city	44,800	69,900	14,000	25,000	6,900	13,100
Riverside	Temecula city	110,300	138,400	33,600	46,400	56,400	71,600
Riverside	Wildomar city	35,400	55,200	10,600	19,600	6,500	11,200
Riverside	Jurupa Valley City	100,100	117,800	25,300	31,800	27,100	31,300
Riverside	Unincorporated	370,500	525,600	113,600	180,900	76,100	139,600
San Bernardino	Adelanto city	33,900	66,600	8,200	19,800	6,100	10,000
San Bernardino	Apple Valley town	74,300	101,400	24,700	37,400	18,000	30,200
San Bernardino	Barstow city	24,200	36,900	8,400	12,800	11,700	18,500
San Bernardino	Big Bear Lake city	4,900	6,600	2,100	2,800	4,700	5,800
San Bernardino	Chino city	86,900	121,300	23,200	33,100	50,400	57,400
San Bernardino	Chino Hills city	79,700	92,800	23,800	28,000	16,400	17,900
San Bernardino	Colton city	53,700	70,700	15,000	21,700	19,500	29,000
San Bernardino	Fontana city	211,000	286,700	51,500	77,800	56,700	75,100
San Bernardino	Grand Terrace city	12,400	14,500	4,400	5,600	3,500	6,100
San Bernardino	Hesperia city	93,700	168,100	26,800	53,200	22,500	46,100
San Bernardino	Highland city	54,200	68,900	15,400	21,400	6,900	11,100
San Bernardino	Loma Linda city	24,500	30,100	9,000	12,000	24,200	28,300
San Bernardino	Montclair city	38,700	49,200	9,900	11,200	19,300	20,900
San Bernardino	Needles city	5,000	5,600	1,900	2,200	1,700	2,100

County	Jurisdiction	Population		Households		Employment	
		2016	2045	2016	2045	2016	2045
San Bernardino	Ontario city	172,200	269,100	46,000	74,500	113,900	169,300
San Bernardino	Rancho Cucamonga city	176,500	201,300	56,800	66,400	88,300	105,100
San Bernardino	Redlands city	69,500	80,800	24,400	30,800	42,600	56,300
San Bernardino	Rialto city	99,300	139,100	26,500	37,100	25,500	35,500
San Bernardino	San Bernardino city	216,300	230,500	59,700	68,800	101,300	125,600
San Bernardino	Twentynine Palms city	26,500	33,300	8,400	11,800	4,400	8,600
San Bernardino	Upland city	76,400	93,000	26,100	32,800	35,900	42,200
San Bernardino	Victorville city	123,300	194,500	33,900	61,800	41,200	61,200
San Bernardino	Yucaipa city	53,800	75,200	18,700	26,100	10,800	17,600
San Bernardino	Yucca Valley town	21,400	25,800	8,400	10,900	6,900	10,900
San Bernardino	Unincorporated	308,100	353,100	97,100	115,000	58,800	72,900
Ventura	Camarillo city	68,200	76,100	25,200	28,100	32,700	37,500
Ventura	Fillmore city	15,600	18,600	4,300	5,300	3,000	4,800
Ventura	Moorpark city	36,700	42,200	11,000	13,000	11,300	15,000
Ventura	Ojai city	7,500	7,900	3,100	3,200	5,600	5,800
Ventura	Oxnard city	206,000	238,100	51,200	61,600	61,100	76,100
Ventura	Port Hueneme city	22,000	22,400	6,900	7,100	3,800	4,000
Ventura	San Buenaventura (Ventura) city	108,800	123,900	41,100	46,700	60,800	64,500
Ventura	Santa Paula city	30,700	35,400	8,600	10,300	7,800	11,000
Ventura	Simi Valley city	127,100	137,000	41,600	46,100	46,700	53,800
Ventura	Thousand Oaks city	129,500	144,700	46,000	51,300	70,100	80,000
Ventura	Unincorporated	98,200	101,300	32,200	33,600	31,800	36,900
		18,832,000	22,504,000	6,012,000	7,633,000	8,389,000	10,049,000

Source: Western Riverside Council of Government Council (WRCOG)

2.6 Cities of Riverside County

Riverside County has 28 cities and multiple special districts.

Participating representatives from cities, tribes, special districts, and school districts attended workshops, and meetings and assisted with the hazard analysis for the region by discussing issues impacting their jurisdictions. These discussions increased their knowledge of the hazards influencing areas within Riverside County. The participants provided insight on hazards and concerns facing their jurisdictions, but not common across the county.

Participating jurisdictions in the Riverside County MJLHMP have their own governing bodies (e.g., city councils, tribal councils, water district boards, hospital boards, etc.) and upon Cal OES and FEMA approval they will formally adopt the plan via resolution through their governing body.

2.6.1 Banning

The City of Banning is in Riverside County in the San Gorgonio Pass area of California. It is approximately twenty-three (23) square miles in area and is 30 miles east of the County seat in the City of Riverside. Banning is 80 miles east of Los Angeles, 23 miles west of Palm Springs, 25 miles north of the resort mountain community of Idyllwild. Banning is immediately adjacent to Beaumont to the west and the Morongo Indian Reservation to the east.

The Union Pacific Railroad and California State Highway 10 both run through the middle of the City. Smith Creek, a waterway that starts in the mountains and runs through the lower part of the valley, is close to Banning's southern and eastern boundaries.

Banning enjoys a yearly average daily temperature of approximately 79 degrees. Average temperatures are in the high 90's during the summer and low 40's during the winter. The average rainfall for Banning is about 16 inches per year.

Incorporated in 1913, the City of Banning has a rich and colorful history. Initially, Banning served as a stagecoach and railroad stop between the Arizona territories and Los Angeles. Today, Banning is home to nearly 30,000 residents and features clean air, ample water supplies and the memorable and inspiring scenic vistas of Mt. San Gorgonio and Mt. San Jacinto. Its signature community event is Stagecoach Days, an annual rodeo and a parade that celebrates Banning's Western heritage.

2.6.2 Beaumont

The City of Beaumont is located in Riverside County and is bordered by City of Calimesa and unincorporated County areas, on the north by the unincorporated County areas (Cherry Valley), on the south by unincorporated County areas and the City of San Jacinto, and on the east by the City of Banning. Beaumont is located approximately 70 miles east of Los Angeles, 21 miles east of Riverside, and 21 miles southeast of San Bernardino. The geographic area governed by the Beaumont General Plan includes the City's boundaries as they existed in 2005 and the City's established Sphere of Influence. Because there is considerable variation within the area governed by the General Plan, the larger Beaumont Planning Area has been subdivided into eight smaller planning areas: 1) Town Center Planning Area, 2) Oak Valley Planning Area, 3) North Beaumont Planning Area, 4) East Beaumont Planning Area, 5) 6th Street Corridor Planning Area, 6) Southeast Beaumont Planning Area, Southwest Planning Area, 8) West Beaumont Planning Areas.

The City of Beaumont was incorporated in November 1912. Founded at the turn of the twentieth century, Beaumont residents are proud of their city's rich history and rural charm. The town served as a welcome "stopping-off point" for early travelers making their way from the Mohave desert to Los Angeles (L.A.), and later for L.A. residents eager to vacation in Palm Springs. Some, however, set down roots, drawn by the beautiful mountain vistas, clean, crisp air, and the abundance of cherry and apple orchards. Beaumont residents are proud of these early settlers and their families, many of whom continue to live and thrive in Beaumont.

Population- City of Beaumont is estimated to have 45,118. (2015) The City of Beaumont provided specific information regarding extreme wind events, and the public notices that are sent during a wind event.

2.6.3 Blythe

The City of Blythe is in Riverside County in the Palo Verde Valley of California. The City of Blythe comprises approximately 16,400 acres (approximately 27 square miles) in area and is 145 miles east of Riverside City, the County's seat. The Blythe's Sphere Of Influence (SOI) surrounds the incorporated city limits and comprises approximately 12,800 acres (approximately 20 square miles). The jurisdiction sits directly adjacent to La Paz County, Arizona on its eastern boundary and Imperial County along its southern boundary. The Colorado River is a waterway that forms the eastern boundary of Blythe. Regional access to Blythe is provided by Interstate-10 (I-10), State Highway 78 (SR-78), and State Route 95 (US 95). The Greyhound bus line also provides access to and from Blythe.

Jurisdiction's climate can be described as moderate. Temperatures and rainfall for jurisdiction are typical of that of the eastern part of Riverside County.

The City of Blythe is a General Law city which was incorporated in 1916. It is located 225 miles east of Los Angeles and 150 miles west of Phoenix Arizona. The Colorado River embraces the east side of the Palo Verde Valley. The City has a Council-Manager form of municipal government. The City Council appoints the City Manager who is responsible for the day-to-day administration of City business and the coordination of all departments. The City Council is composed of five members elected biannually to alternating four-year terms. The City of Blythe encompasses an area of approximately 26.8 square miles and is situated 265 feet above sea level. Blythe has a California desert climate with winter temperatures averaging 55-75 degrees, and summer temperatures averaging 85-110 degrees. Annual rainfall is approximately four (4) inches per year.

2.6.4 Calimesa

The City is located in the northwestern portion of Riverside County, between the cities of Yucaipa and Beaumont, between San Bernardino and Palm Springs. Calimesa is in the region known as the Inland Empire, which covers all of San Bernardino and Riverside Counties and is between the foothills of the San Bernardino and San Jacinto Mountains. The city's elevation ranges between 2,300 to 3,500 feet above sea level. According to the United States Census Bureau, the city has a total area of 14.8 square miles, all of it land.

Climatic Conditions: Generally, Calimesa has an arid climate. Annual rainfall varies from ten (10) to twenty-three (23) inches within the San Gorgonio Pass area of Riverside County and the City. Hot, dry Santa Ana winds are common to areas within the City. These winds constitute a contributing factor, which causes small fires originating in rural and urban development to spread quickly and create the need for an increased level of fire protection.

The City of Calimesa was incorporated on December 1, 1990, soon after the incorporation of its northern neighbor, the City of Yucaipa. Prior to its incorporation, the City of Calimesa existed as an unincorporated town that straddled the Riverside–San Bernardino County line at the location where Interstate 10 climbs the San Gorgonio Pass going eastward from Redlands, California.

Historically, Calimesa was divided from Yucaipa, in San Bernardino County, by the Wildwood Canyon Wash and County Line Road. I-Street Park and Calimesa Elementary School providing services to the town of Calimesa were, and currently are, within the boundaries of Yucaipa. California State law prohibits city incorporation or annexation over county lines. Because of this, when Calimesa went through incorporation it was

unable to incorporate parts of what was considered within Calimesa. Although the two cities are in separate counties, both Yucaipa and Calimesa share the same basic street and address system, including street names which are congruent with both cities. The general boundary between the two cities is County Line Road, which ironically does not follow the exact county line in some places due to the alignment of Calimesa Creek, which meanders in and out of both Yucaipa and Calimesa.

The City Limits of Calimesa extend southwest to the City of Beaumont. Although much less refined, the boundaries between Beaumont and Calimesa fall generally along the Southern California Edison (SCE) right-of-way that extends from the El Casco electrical sub-station facility near Moreno Valley, eastward. Near the I-10 freeway, Champions Drive is the common boundary between the two Cities. The City of Calimesa has an estimated population of 10,053.

2.6.5 Canyon Lake

The City of Canyon Lake is an incorporated city in Riverside County. It is approximately four and a half square miles in area and is 31 miles south of the County seat, the City of Riverside. The City of Canyon Lake sits directly adjacent to the City of Menifee on its eastern boundary, City of Lake Elsinore on its Western and southern boundaries. The City of Canyon Lake lies between the I-15 and I-215. Railroad Canyon Road, an arterial highway, bisects the community and provides the major connection to these freeways. The San Jacinto River, a waterway that starts in the Mountains and runs over 75 miles through the County, feeds into Canyon Lake and flows into Lake Elsinore.

The City of Canyon Lake climate in winter is rarely extreme, low temperatures almost never go below freezing. In the summer the high temperatures will hover in the high 90's but during heat waves can exceed 100 degrees. Rainfall is typical of that of the rest of Riverside County.

The City of Canyon Lake was established in March of 1968 as a relaxed private gated community offering recreational opportunities. Canyon Lake is primarily a bedroom community of mature and newer homes. As a private gated community, Canyon Lake has an equestrian center, campground, and many other amenities. The City of Canyon Lake incorporated on December 1, 1990, to become more responsive to its residents.

2.6.6 Cathedral City

The City of Cathedral City is a corporate city in Riverside County in the Coachella Valley of California. It is approximately 20 square miles in area and is 64 miles east of the County seat, the City of Riverside. All borders of Cathedral City are within Riverside County. The Union Pacific Railroad and Interstate Highway 10 both run through the northern-most

portion of the City. The Santa Rosa Mountains border the southern-most portion of the city.

Cathedral City's climate can be described as arid most of the year, with summer heat more than 110 degrees Fahrenheit anytime from June through September, and colder winter evening temperatures as low as 25 degrees Fahrenheit from December through February.

The average rainfall is less than three inches per year. Temperatures and rainfall for Cathedral City are typical of the rest of the Coachella Valley (eastern Riverside County).

Cathedral City was established in 1925 and incorporated in 1981. Strategically located, with city limits on both sides of Interstate 10, Cathedral City is a haven for expanding and relocating businesses. Cathedral City's population ranks in the top three cities in the Coachella Valley.

Businesses view the region as a triangle of opportunity between Los Angeles and San Diego. Coachella Valley is situated inland, approximately equal distances from each metropolitan area. This triangle of commercial businesses, light industry, and professional services is expanding and becoming one metropolis of continued growth.

2.6.7 Coachella

Coachella is a city in Riverside County, California; it is the easternmost city in the region collectively known as the Coachella Valley. It is located 28 miles east of Palm Springs, 72 miles east of Riverside, and 130 miles east of Los Angeles.

The eastern half of the Coachella valley is below sea level, and the area's average elevation is 68 feet (35 m) below sea level. The Salton Sea, a saltwater lake located about 10 miles (16 km) South of Coachella, lies 227 feet (69 m) below sea level.

The city also lends its name to the Coachella grapefruit; the town's stretch of State Route 111 is named Grapefruit Boulevard in its honor. Harrison Street or State Route 86 is declared historic U.S. Route 99, the major thoroughfare that connects with Interstate 10 a few miles north of town.

Known as the "City of Eternal Sunshine", Coachella is largely a rural, agricultural, family-oriented community in the desert and one of the state's fastest growing cities in the late 20th century. When it first incorporated back in 1946, it had 1,000 residents, but the population was 45,407 at the 2010 census.

The city was originally founded as Woodspur in 1876, when the Southern Pacific Railroad built a rail siding on the site. In the 1880s the indigenous Cahuilla tribe sold their land

plots to the railroads for new lands east of the current town site, and in the 1890s, a few hundred Mexican railroad workers took up settlement along the tracks.

The origin of the name Coachella is unclear, but in 1901 the citizens of Woodspur voted on a new name for their community; at their town hall meeting, the homeowners settled on "Coachella". Some locals believe it was a misspelling of Conchilla, a Spanish word for the small white snail shells found in the valley's sandy soil, vestiges of a lake which dried up over 3,000 years ago.

Coachella began as a 2.5-square-mile (6.5 km2) territory gridded out on the mesquite covered desert floor. Not until the 1950s did Coachella begin to expand into its present range, about 32 square miles (83 km2), an area which contained large year-round agricultural corporate farms and fruit groves, particularly of citrus (lemons, oranges, grapefruit) and date palms.

Coachella became a city in 1946. During the incorporation voting process, the first city council was tentatively elected: Lester C. Cox, T. E. Reyes, John W. Westerfield, Lester True, and Paul S. Atkinson. Also elected on November 26, 1946, were City Clerk Marie L. Johnson and City Treasurer John C. Skene. John Westerfield was appointed mayor at the first meeting.

2.6.8 Corona

The City of Corona is located approximately 45 miles southeast of Los Angeles in western Riverside County. It is located in a valley, framed by mountains and the Prado Basin. Original settlements focused development in an area within and adjacent to Grand Boulevard. As the City grew, the geographic limitations imposed by the Cleveland National Forest to the south and the Prado Basin to the northeast created natural barriers that confined the City. The City is bordered by the City of Norco to the north, the City of Riverside to the east, and Riverside County to the west and south.

The City limits encompass 39.2 square miles and the population is approximately 159,132. A city whose heritage spans more than a century, Corona has emerged as an ethnically diverse community, where a significant percentage of the population is made up of young, well-educated families. The Corona community boasts many amenities that provide a first-rate quality of life for residents. The City has more than 394 acres of parks, with sports fields, basketball courts, playgrounds, tennis courts, two skate parks and an outdoor pool.

Two major freeways and one railroad transect Corona. The Riverside Freeway (SR-91) runs east/west directly north of the City’s center, Interstate 15 (I-15) runs north/south near the eastern edge of the City, and the railroad parallels SR-91. These corridors are major transportation routes to the economic center of Orange County from the Inland Empire.

Two geographical areas are considered to be within the boundaries of the City of Corona General Plan Planning area: lands within the City's corporate limits, and lands within its Sphere of Influence (SOI).

The SOI was defined by the City, the Southern California Association of Governments (SCAG), and the Riverside County Local Agency Formation Commission (LAFCO). It represents the areas likely to be served by and potentially annexed to the City. The SOI includes three geographically distinct areas including the West, East and South Spheres. The West Sphere encompasses three geographic areas: the Prado Basin, Coronita and the Foothill area. The East Sphere includes the areas of Home Gardens, Eagle Valley East, and El Cerrito. Temescal Canyon makes up the South Sphere.

The City of Corona Planning area is within the South Coast Air Basin of California. The air basin is a 6,600-square mile area encompassing the non-desert portions of Riverside, Los Angeles, and San Bernardino Counties and all of Orange County. Bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east, the South Coast Air Basin is an area of high air pollution potential.

The climate of the South Coast Air Basin is dominated by the strength and position of the semi-permanent high-pressure center over the Pacific Ocean near Hawaii. It creates the climate conditions typical of Southern California, (i.e., relatively cool summers, mild winters, infrequent rainfall, cool daytime sea breezes, comfortable humidity, and ample sunshine). Periods of extremely hot weather, winter storms, or Santa Ana wind conditions interrupt this pattern. Unfortunately, the same atmospheric processes that create the desirable living climate combine to restrict the ability of the atmosphere to disperse the air pollution generated by the region's population.

The location of the Planning Area, east of the Chino Hills and Santa Ana Mountains, insulates it from the moderating effect of the ocean. Temperatures and precipitation in Corona vary more dramatically than coastal areas of the basin. Average summertime high temperatures range between about 85 to 92 degrees Fahrenheit from June through September, and average wintertime low temperatures are generally near 40 degrees in December and January. Rainfall is highly variable and confined almost exclusively to the winter months. Rainfall in Corona averages about 12.6 inches annually.

Predominating winds travel from the ocean, across the urbanized coastal areas of Orange and Los Angeles Counties, to Corona through the Santa Ana River Canyon. The canyon acts as a funnel for air masses moving across the basin. Daytime winds are typically channeled through the canyon to create steady, abnormally high (greater than 12mph) wind velocities from the west. Typical nighttime conditions reverse, and light winds (less than 1 mph) drift back towards the ocean. Exceptions to this pattern occur when a high-

pressure center forms over the western United States and creates the strong, hot, dry, gusty Santa Ana winds, which move through Corona from the eastern deserts into the canyon.

Corona's historic resources are those physical elements, both structural and natural, which define Corona's past. They help give the City its unique identity, charm, and orientation. These resources, when well preserved and maintained, provide the community with a sense of permanence, which fosters civic pride and stewardship among its residents and businesses. Information describing the historic and cultural resources were derived from the California Environmental Resources Evaluation Systems (CERES) website, as well as the Riverside County Integrated Project (RCIP) (March 2000) existing setting conditions. Corona's history is an evolution of Native American inhabitation, Missionary influence, agricultural development, and eventual rapid urbanization. The City's growth and development is typical of many other areas in Southern California.

In the early 1700s, prior to the arrival of the Spanish, the Gabrieleno and Luiseno Indians occupied the Corona area. These Native Americans used the hot waters in Temescal Canyon for bathing and religious ceremonies. Current residents and visitors still enjoy the rejuvenating mud baths and hot springs at the Glen Ivy Springs resort. Luiseno religious ceremonies were strictly followed, and remnants of some of their artistic pictographs and petroglyphs can still be found on rocks in undeveloped areas.

In the early 1800s, the agricultural and cattle ranching base developed, and portions of Corona became part of the Mexican land grants (Rancho La Sierra Yorba, Rancho Jurupa, Rancho El Rincon, and Rancho El Sobrante de San Jacinto). With the Treaty of Guadalupe Hidalgo (1846), Mexico ceded the Corona area as part of California to the United States. The Yorba, Serrano, Sepulveda, Cot, and Botiller families' ranched sheep and cattle on the original ranchos in the area. Remnants of the Serrano tanning vats are still found on Old Temescal Canyon Road. In 1849, the California gold rush brought prospectors, settlers, and new development to southern California. The Butterfield Stage stops, and the Serrano adobes are found along this road.

In 1886, developer Robert Taylor persuaded his partners: Rimpau, Joy, Garretson, and Merrill to form the South Riverside Land and Water Company. Together they raised approximately $110,000 to purchase approximately 12,000 acres of good agricultural land. Taylor realized the importance of water for the soon to be developed community, and additional funds were used to ensure that sufficient water rights were obtained. Taylor hired Anaheim engineer H. C. Kellogg to design a circular Grand Boulevard three miles round. Early residents used to parade their fancy buggies on this circular street that enclosed the main functions of the community: schools, churches, residences, and stores. To the north along the railroad tracks were the manufacturing plants and packing houses.

The southern end of town was left to the citrus industry, and the mining companies were established just outside the city's southeastern and eastern city limits.

The town's founders initially named their development South Riverside after the successful citrus community of Riverside, just a few miles away. Almost all the new settlers planted orange and lemon trees in hopes of gaining future profits. New groves continued to spring up and, by 1912, there were 5,000 acres of established lemon and orange groves. By 1913, Corona shipped more fruit than any other town in Southern California. In 1961, citrus was still considered the backbone of Corona's economy and the largest source of revenue. In that year, citrus covered 7,500 acres. The labor force fluctuated between 400 and 1,800 workers at the peak of the harvest. An additional 500 people worked at the Exchange Lemon Products plant. By 1982, Corona's agricultural industry faced a bleak future as production costs made the economics of farming financially unsuccessful. Plans were begun to replace the groves with approximately 12,500 dwelling units.

On July 13, 1896, residents voted to incorporate and change the name of the community to Corona, which is Spanish for crown, in honor of the City's circular Grand Boulevard. By 1900, the population had reached 1,434 people. On September 9, 1913, in observance of California's Admission's Day, Corona residents celebrated with an international automobile race on the Boulevard. The event attracted such auto racing greats as: Ralph DePalma, Barney Oldfield, Terrible Teddy Tetzlaff and Earl Cooper. More than 100,000 people came to the town of 4,000 to watch Cooper win the race and a prize of $8,250. It was so successful that races were held again in 1914 and 1916. The demise of the Corona road races was due not only to tragic deaths, which occurred in 1916, but also because of the cost and local effort needed to continually stage such an extravagant event.

2.6.9 Desert Hot Springs

Desert Hot Springs is located approximately 112 miles from Los Angeles, in the center of Riverside County. The City sits in the foothills of the San Bernardino Mountains and overlooks the entire Coachella Valley. The southern city boundaries are adjacent to Palm Springs and Cathedral City, divided by Interstate 10. To the east of the city is the unincorporated community of Sky Valley. To the west are the unincorporated areas of North Palm Springs and White Water. To the north of the city is predominately Joshua Tree National Park and lands governed by the Department of Interior, Bureau of Land Management (BLM). The City also sits at two entry points of the recently recognized, Sand to Snow National Monument.

The area has sparse vegetation, which is consistent with the Southern California lower desert. Annual grass and desert flowers are dependent on annual precipitation averaging

just over 5 inches a year. Temperatures during the summer can reach 115 degrees during the peak day and the high 80's during the night. Winter temperatures are in the high 70's to low 80's and lows at night average in the 50's. Summers tend to produce occasional monsoonal thunderstorms, while the winter tends to be windy, depending on the low pressures systems reacting with the local mountain ranges.

In 1913 Cabot Yerxa arrived in the City. He was the first Homesteader and discovered hot water on Miracle Hill. Due to the San Andreas Fault bisecting the hill, one side has cold water, the other has hot. His large adobe, hand built by Yerxa, is one of the oldest adobe structures in Riverside County and is listed on the Nation Register of Historic Places.

The town was founded by L. W. Coffee on July 12, 1941. The original site was centered on the intersection of Palm Drive and Pierson Blvd. and was only a square mile in area. He named it Desert Hot Springs in honor of the waters Yerxa had discovered.

The City of Desert Hot Springs incorporated in 1963, with 1,000 residents.

Since that time, Desert Hot Springs has solidified itself as a tourist destination through its small spa hotels. In its early days the city's seclusion appealed to urban "escapees".

Desert Hot Springs experienced periods of dizzying growth in the 1980s and 1990s when most of the vacant lots were filled with new houses and duplex apartments. The city's population doubled in the 1980s and increased by another 5,000 in the 2000 census. Between 2000 and 2010 the population grew by 9000 residents resulting in a final population count of 25,938 full time residents following the 2010 census.

With much of the City's land undeveloped, development in the city and population is expected to steadily grow for many years to come.

The City is the home to (5) Elementary Schools, (2) Middle Schools and (1) High School, (3) Parks and a Health and Wellness Center serving residents of the Community.

In 2014 the City Council adopted Ordinances allowing for Medical Marijuana Dispensaries and the large-scale Cultivation of Medical Marijuana. Development of this rapidly growing industry is permitted in the Industrial Zone of the City.

2.6.10 Eastvale

Eastvale is one of the newest cities in Western Riverside County. Eastvale incorporated on October 1, 2010, since then it has grown to a population of over 63,162 residents. Eastvale is 13.2 square miles strategically poised between Interstate 15 and California State Routes 91, 60, and 71, making access easy for residents, visitors, and businesses alike. Residents and visitors find the proximity of Ontario International Airport to be a

metropolitan advantage yet enjoy the small-town, neighborly charm of our young community.

2.6.11 Hemet

The City of Hemet is located in the San Jacinto Valley in Riverside County, approximately 80 miles southeast of Downtown Los Angeles. The city covers about half of the valley, which it shares with the neighboring City of San Jacinto to the north and Diamond Valley Lake to the south. The San Jacinto Mountains to north provide a beautiful natural backdrop to the City.

The average annual rainfall in Hemet is approximately 12 inches. The annual high temperature is 82 degrees while the annual low is 46 degrees. Average temperature in Hemet is 65 degrees. During the 19th century the land in Hemet was used for cattle ranching by Mission San Luis Rey. On January 20, 1910, the City of Hemet was incorporated and maintains a Council-Manager form of government. The incorporation helped to serve the growing city which also became a trading center for the San Jacinto Valley agriculture of citrus, apricots, peaches, olives, and walnuts. During WWII the City of Hemet hosted the Ryan School of Aeronautics, training over 6,000 fliers for the Army Air Force. Hemet-Ryan Airport still exists today in the same location.

2.6.12 Indian Wells

Indian Wells is a small-scale residential-resort community located within the Coachella Valley in Riverside County. The City of La Quinta and the City of Palm Desert, along with unincorporated areas of Riverside County, adjoin the City. The current City limits encompass approximately 9,240 acres, or 14.4 square miles. Primary access to the City is from State Highway 111. Primary access to the region is by Interstate 10. State Route 74 also provides access to the Coachella Valley region from the south. Unincorporated lands to the northeast of the City are included within the Indian Wells sphere of influence.

Indian Wells is best known for its world class resorts, catering to golf and tennis enthusiasts, and quality residential lifestyle. Residents of the City enjoy an ideal climate, with over 330 days of sunshine each year. The City's beautiful surroundings include views of the Santa Rosa and San Jacinto Mountains.

Indian Wells officially became a city on July 14, 1967. At that time, Indian Wells was the 16th city to incorporate in Riverside County and the 400th in California. It was the fourth city, after Indio, Coachella, and Palm Springs, to incorporate in the Coachella Valley. The election for incorporation was held on June 27, 1967, and according to the League of California Cities, had the largest percentage of approval for incorporation of any city in California. The voter turnout was 87 percent of the 285 registered voters with 93 percent

in favor of becoming a city. At incorporation, there were an estimated 855 legal residents and 585 homes. The Indian Wells area was inhabited long before incorporation, however. The name Indian Wells originated from a Cahuilla Indian hand-dug well, documented on the earliest maps of California prior to 1850. The original well was generally located north of present-day Highway 111 and east of Miles Avenue. The well serves as a stage station until a public well was established around 1870 and remained in use until 1910. Like most communities that were established in the Coachella Valley, Indian Wells' origins are based on travelers' needs for water and a place to rest. Both wells were destroyed by a massive flood in 1916.

2.6.13 Indio

The City of Indio is a corporate city located in Riverside County, within the Coachella Valley of Southern California's Colorado Desert region, approximately 70 miles east of the County seat (City of Riverside), and 125 miles east of Los Angeles. The City limits encompass approximately 29.2 square miles in area. The City of Indio sits directly adjacent to the City of La Quinta, the City of Coachella, and the unincorporated areas of Riverside County. The Union Pacific Railroad, State Highway 111, and Interstate 10 run through the length of the City. The Coachella Valley Water District operates an aqueduct which conveys water from the Colorado River into the Coachella Valley and bisects the City from east to west and north to south.

The climate of the City of Indio is influenced by the surrounding mountain ranges that contribute to the unique year-round warm and dry climate, with some of the warmest winters west of the Rocky Mountains. Indio experiences warm winters and hot summer climates with average annual high temperatures of 89.5 degrees Fahrenheit, and average annual low of 62.1 Fahrenheit. Summer highs above 110 degrees Fahrenheit are common while summer night lows often stay above 90 degrees Fahrenheit. The City of Indio is adjacent to the geologic Salton Sink and within the site of historic Lake Cahuilla. Indio is an official National Bird Sanctuary, as seasonal bird migration flight routes cross the city in route to and from the Salton Sea.

Indio began as an Indian Village and winter home for Native Americans who regularly migrated from the surrounding mountains in the winter to the palm oases along the San Andreas Fault zone and other locations providing water, vegetation, and shelter. The Villages were located throughout the Coachella Valley and along the shores of ancient Lake Cahuilla. The discovery of gold in California in 1848 and the resulting Gold Rush brought a stream of miners and settlers through the Coachella Valley, providing a southern route to California less hazardous than crossing the Sierras. In 1872, Indio was selected as a division point for the Southern Pacific Railroad with the first train arriving in 1876 from Los Angeles and the completed southern transcontinental route in 1877. Indio's

first settlers were mainly railroad employees and local shopkeepers. By 1909, the Indio School census indicated that the school district had 43 families and 82 children within its boundaries. In 1914 the Southern Sierras Power Company completed an electric power line to the Coachella Valley to provide power for pumping water and powering homes. In 1930, Indio became the Coachella Valley's first incorporated city.

2.6.14 Jurupa Valley

The City of Jurupa Valley is the newest city to incorporate within the State of California, in the County of Riverside, with an incorporation date of July 1, 2011. Jurupa Valley is approximately 44 square miles in area and is approximately 5 miles west of the County seat, the City of Riverside. Jurupa Valley is approximately 60 miles east of the City of Los Angeles and approximately 90 miles north of San Diego. It covers the area north and west of the Santa Ana River, south of the Riverside-San Bernardino County line, and east of Interstate 15 with CA Hwy 60 intersecting the length of the city from the east to the west.

The City of Jurupa Valley has a moderate climate with annual rainfall at approximately 2 – 3.5 inches per year. Vegetation is green and bountiful in the winter but can become dry and dense during the summer months. Summers are warm and can reach temperatures above 109 degrees during the peak of the day and remain in the high 80's during the evenings. Winter weather is mild averaging 65 – 76 degrees during the day and dropping down into the mid 30's or 40's in the evenings. Throughout most of the year, you can usually count on warm sunny days, with occasional mild to gusty winds throughout the late summer, fall, and early winter seasons. The population of Jurupa Valley was incorporated after the 2010 US State Census. Currently, the city's population is 100,314 according to the 2015 US State Census.

2.6.15 Lake Elsinore

The City of Lake Elsinore is a corporate city nestled at the foot of the Cleveland National Forest, within the southwest portion of Riverside County. The City boasts that Lake Elsinore is the largest natural recreational lake in Southern California and is bounded by wetlands. City of Lake Elsinore is located on the I-15 corridor at the intersection of State Route 74, 20 miles south of State Route 91. The City is about a 30-minute drive to metropolitan Orange County and forty-five minutes southwest from Riverside. San Diego is about a 75-minute drive south on I-15. Highway 74 connects westward over the Ortega Mountains to Orange County beach communities and eastward to mountain and desert cities in Riverside County. Lake Elsinore is 73 miles southeast of Los Angeles and 74 miles northeast of San Diego. The average rainfall per year is less than 12 inches total. The average winter low temperature is 35.8 degrees, while the average summer high is 98.4 degrees. The community enjoys a yearly average daily temperature of 78.5 degrees.

The City of City of Lake Elsinore was organized, formed and incorporated under the laws of the State of California on April 9, 1888. From earliest times, the 300 natural Sulphur springs that fed Lake Elsinore were believed to have curative and magical properties by its Native American Indian inhabitants. These first inhabitants were called the Lake Entengvo Wumoma, which meant "Hot Springs by the Little Sea."

Joining the Native American Indian inhabitants, the Spanish missionaries, soldiers, ranchers, and American trappers came to the valley. The Spanish padres renamed the lake "Laguna Grande."

Early settlers established a town site around the lake, which they renamed Elsinore, representing the immortality given the town of Elsinore in Denmark by Shakespeare in "Hamlet." In the 1920s and 1930s, the City became a playground for movie stars and the lake a destination for world-record-setting boat races and Olympic swim team training. Sportsmen hunted duck on the lake and deer in the hills.

Lake Elsinore has a “Council-Manager” general law form of government where the City Manager is appointed by the City Council and is the Chief Executive Officer of the Municipal Corporation. The Council acts as the board of directors of the municipal corporation and meets in a public forum where citizens may participate in the governmental process. The City Council consists of five members elected at-large, on a non-partisan basis. Residents elect the mayor and four council members, making each accountable to the entire citizenry.

2.6.16 La Quinta

La Quinta is situated approximately 150 miles northeast of San Diego and 130 miles east of Los Angeles on the desert floor of the Coachella Valley. The valley is flanked on three sides by the Little San Bernardino, Santa Rosa, and San Jacinto Mountains. The protection afforded by the mountains contributes to the arid climate. Average rainfall per year is less than 5 inches total. Low temperatures rarely drop below freezing, while highs during the summer are usually in the triple digits and can reach a dry heat of 120 F degrees. Visitors from colder climates come to La Quinta and surrounding cities in the Coachella Valley from November to May because of our extremely mild winters. La Quinta’s climate can be described as Lower California desert.

The City of La Quinta was organized, formed and incorporated under the laws of the State of California on May 1, 1982. It has a “Council-Manager” general law form of government where the City Manager is appointed by the City Council and is the Chief Executive Officer of the Municipal Corporation. The Council acts as the board of directors of the municipal corporation and meets in a public forum where citizens may participate in the governmental process. The City Council consists of five members elected at-large, on a

non-partisan basis. Residents elect the mayor and four council members, making each accountable to the entire citizenry.

2.6.17 Menifee

The City of Menifee is in southwestern Riverside County approximately 30 miles southeast of the City of Riverside, California. The City encompasses approximately 50 square miles with an overall population of 83,447.

On June 3, 2008, the residents of the communities encompassing the City of Menifee voted to incorporate Menifee into Riverside County's twenty-sixth city. The new City of Menifee was officially established on October 1, 2008.

Interstate 215 traverses north and south through the center of Menifee, with existing community commercial areas located primarily along Newport, Bradley, and McCall Roads off of I-215.

2.6.18 Moreno Valley

The City of Moreno Valley was officially incorporated on December 3, 1984, as a California general law municipality. Moreno Valley is comprised of three once-rural communities (Sunnymead, Edgemont and Moreno) and is located in the northwestern portion of Riverside County, approximately 66 miles east of Los Angeles, 42 miles west of Palm Springs and 100 miles north of San Diego. Moreno Valley is situated in a crescent of land bounded by the Box Springs Mountains to the north, the hills of the Badlands to the east and the mountains of Lake Perris State Recreation Area. The surrounding jurisdictions include the City of Riverside, the City of Perris, March Air Reserve Base, the San Jacinto Wildlife Area, and Lake Perris State Recreation Area. The population of Moreno Valley is estimated at 201,175.

2.6.19 Murrieta

The City of Murrieta is approximately 34 square miles in area and is 50 miles south of the County seat, the City of Riverside. The City of Murrieta sits directly adjacent to the City of Temecula on the south, City of Menifee on the east, and the City of Wildomar on the northern boundaries. Murrieta is served by two major interstate freeways. I-215 runs through the eastern portion of the city, and I-15 runs through the western portion of the city. The Santa Margarita Watershed runs through the southwest portion of the City. Storm water runoff from portions of Lake Elsinore and Murrieta collects in the Murrieta & Temecula creeks and forms the Santa Margarita River south of the City.

The City of Murrieta's winters are almost never extreme, low temperatures rarely go below freezing. In the summer the high temperatures will hover in the 90's, but some days may

go over 100 during heat waves. Rainfall for City of Murrieta is typical of that of the rest of Riverside County.

In 1980, Murrieta population was estimated to be 2,200. When Murrieta officially became a city on July 1, 1991, it was already home to more than 24,000 residents. By 2016, more than 113,000 people had moved into the City of Murrieta community, making it one of the five largest in Riverside County. The natural scenic beauty of the area and what is still by California standards reasonably priced housing continues to attract significant numbers of residents and businesses who are finding Murrieta a great place to grow. Those living in the community find distinguished schools, abundant recreation, excellent medical facilities, expanding employment opportunities and one of the lowest crime rates in Southern California. Entrepreneurs find a market growing larger by the day, above average household incomes, a skilled labor force and a business-friendly City Hall. It's a community with a past and vision for its future. One that welcomes challenges embraces opportunity. More and more people are discovering what the Murrieta fathers envisioned more than a century ago: Murrieta is, indeed, a great place to grow.

2.6.20 Norco

The City of Norco is located in the northwestern portion of Riverside County, near the convergence of Los Angeles, Orange, and Riverside Counties, approximately 45 miles southeast of the City of Los Angeles. It is located in a valley, framed by mountains and the Prado Basin. Original Settlements focused development in an area within and adjacent to Hamner Avenue, Highway. As the City grew, the geographic limitations imposed by the Norco Hills to the east and the Santa Ana River and the Prado Basin to the north and west created natural barriers that confined the City. The City is bordered by the City of Corona to the south and southwest, the City of Riverside to the east, and the cities of Eastvale and Jurupa Valley to the north and northeast.

One major freeway transects Norco with no railroads. Interstate 15 (I-15) runs north/south through the middle of the City. This corridor is the major north-south transportation route in Southern California between Las Vegas and San Diego with nearby direct freeway interconnects to Los Angeles and Orange counties and the rest of the Inland Empire. The current City corporate limits are fairly congruous with the City's Sphere of Influence (SOI). The City currently includes 15 square miles, with less than 50 acres currently in Riverside County remaining within the SOI.

The SOI was defined by the City, the Southern California Association of Governments (SCAG), and the Riverside County Local Agency Formation Commission (LAFCO). It represents those areas likely to be served by and potentially annexed to the City. The SOI includes two small geographically distinct areas including a single row of mostly developed single-family homes along Bluff Street at the City's southwestern edge along

the river bluffs and undeveloped property largely in the river floodplain in the northeast corner of the City. The City currently manages approximately 690 acres of open space within its Park Lands and an internal trail system throughout the City and its public right away of approximately 120 miles.

The City of Norco Planning area is within the South Coast Air Basin of California. The air basin is a 6,600-square mile area encompassing the non-desert portions of Riverside, Los Angeles, and San Bernardino Counties and all of Orange County. Bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east, the South Coast Air Basin is an area of high air pollution potential. The climate of the South Coast Air Basin is dominated by the strength and position of the semi-permanent high-pressure center over the Pacific Ocean near Hawaii. It creates the climate conditions typical of Southern California, (i.e., relatively cool summers, mild winters, infrequent rainfall, cool daytime sea breezes, comfortable humidity, and ample sunshine). Periods of extremely hot weather, winter storms, or Santa Ana wind conditions interrupt this pattern. Unfortunately, the same atmospheric processes that create the desirable living climate combines to restrict the ability of the atmosphere to disperse the air pollution generated by the region's population.

The location of the Planning Area, east of the Chino Hills and Santa Ana Mountains farther south, insulates it from the moderating effect of the ocean. Temperatures and precipitation in Norco vary more dramatically than coastal areas of the basin. Average summertime high temperatures range between about 85 to 92 degrees Fahrenheit from June through September, and average wintertime low temperatures are generally near 40 degrees in December and January. Rainfall is highly variable and confined almost exclusively to the winter months. Rainfall in Norco averages about 12.6 inches annually. Predominating winds travel from the ocean, across the urbanized coastal areas of Orange and Los Angeles Counties, to Norco through the Santa Ana River Canyon. The canyon acts as a funnel for air masses moving across the basin. Daytime winds are typically channeled through the canyon to create steady, abnormally high (greater than 12mph) wind velocities from the west. Typical nighttime conditions reverse, and light winds (less than 1 mph) drift back towards the ocean. Exceptions to this pattern occur when a high-pressure center forms over the western United States and creates the strong, hot, dry, gusty Santa Ana winds, which move through Norco from the eastern deserts into the canyon.

The pre-European history of Norco is much like the rest of Southern California where various tribes of Indians occupied the different portions of the region. The Luiseno Indians used and occupied a region that included the Norco-Corona area. The main village was in Temescal Canyon, and the Norco area was used as a hunting-gathering location. In 1846 the Norco area became part of the Mexican land grant, part of which was eventually

purchased for the purposed of growing orange trees. That was not successful, and the land was sold and subdivided as part of the Riverside Orange Heights Tract.

The concept of “Norco” began as a subdivision of the North Corona Land Company in 1910, which again attempted to develop the area with orchard citrus crops, avocados, olives, etc. Years of experimentation showed the area was not suited to that purpose due to high winds, frost, and poor soil conditions. In 1921 the property was sold to the North Corona Land Company. At that time, fewer than 100 families resided in the area which was mainly a small farming community. The farmers gradually ventured into animal raising, especially poultry and rabbits, some of which are still active today.

By the mid-1920’s, the North Corona Land Company owned 5,409 acres in the area. When the first school and the Norconian Club were constructed, the Norconian Club was constructed at hot sulfur well discovered while digging for irrigation water. It occupied a 700- acre site and was for years a favorite of Hollywood celebrities. Its use declined during the 1930’s and in 1941 the U.S. Navy bought the hotel and expanded it into a premier World War II-era hospital. Today, its grounds are divided between a weapons research facility and a state prison. Most of the resort remains intact, and its history and architecture have earned it a listing on the National Register of Historic Places. Today local leaders and organizations are working to ensure its recognition and preservation.

The community’s first public recreational facility was developed in 1948 when the old Norco School was acquired as a community center. The Norco Recreation and Park District was then formed to maintain and operate the property. During the 1950’s and 1960’s Norco began to experience more growth, resulting from the population explosion occurring throughout the Southern California metropolitan area. The San Bernardino and Riverside freeways made the area more accessible from Los Angeles and Orange Counties, and Norco’s animal keeping lifestyle came within commuting distance from major centers of employment. Because of rapid growth in surrounding communities, and the previous loss of other animal keeping communities in the Los Angeles and Orange Counties when development pressures increased there, the City of Norco was incorporated in 1964 to preserve the animal keeping community that had established roots here.

The development of the 130 acres of Silverlakes Equestrian and Sports Park along Hamner Avenue, between Norco and Eastvale, is currently attracting over 1 million visitors annually to the city and the region. The dominant activity in the park is soccer supplemented by equestrian horse competition.

City of Norco is located in the northwestern portion of Riverside County. The City of Norco is surrounded by the City of Eastvale, Corona and Riverside. During the late 50‘s and early 60’s, southern California experienced rapid growth and due to the previous loss of

other animal keeping communities in the Los Angeles and Orange Counties areas, the City of Norco was incorporated in 1964 to preserve the animal keeping community. The City of Norco currently includes 14.3 square miles. The current population is approximately 27,336.

2.6.21 Palm Desert

The City of Palm Desert is a charter city in Riverside County. The City of Palm Desert is a business, resort, and residential community centrally located in the heart of the Coachella Valley, in southeastern Riverside County, California. Known as the cultural and retail center of the desert communities, the City is 125 miles east of Los Angeles and just 15 miles east of Palm Springs. The valley is flanked on three sides by the Little San Bernardino, Santa Rosa, and San Jacinto Mountains. The protection afforded by the mountains contributes to the arid climate. Average rainfall per year is less than four inches. Low temperatures rarely drop below freezing, while highs during the summer are usually in the triple digits and can reach 115-120 degrees Fahrenheit; however, it's a "dry" heat, with occasional periods of high humidity in the late summer months. Visitors from colder climates flock to Palm Desert and surrounding cities in the Coachella Valley from November to May because of the extremely mild winters.

The City of Palm Desert incorporated as a charter city on November 26, 1973. It has a "Council-Manager" charter city form of government where the City Manager is appointed by the City Council and is the Chief Executive Officer of the Municipal Corporation. The Council acts as the board of directors of the municipal corporation and meets in a public forum where citizens may participate in the governmental process. The City Council consists of five members elected at-large, on a non-partisan basis.

2.6.22 Palm Springs

The City of Palm Springs is a charter city in Riverside County located in the State of California. The City is nestled at the base of the San Jacinto and Santa Rosa Mountains, approximately 60 miles east of Riverside. Serving as the "gateway city" for the Coachella Valley, the City of Palm Springs comprises an incorporated area that encompasses 60,440 acres, or nearly 95 square miles. Palm Springs has a residential population of approximately 47,371 and an estimated seasonal population of over a 100,000 residents and guests.

The City of Palm Springs is located within Riverside County Region VI Southern Administrative Region of the California Office of Emergency Services Agency (Cal OES). Primary access to the City is provided by Interstate 10 and California State Highway 111; north–south access to the City is provided via Indian Canyon Drive and

Gene Autry Trail. The Southern Pacific Railroad and Kinder Morgan natural gas pipeline run through the Coachella Valley and specifically through the City's northern boundary.

Palm Springs has an arid desert climate with annual rainfall of less than six inches. There are more than one hundred days a year when temperatures are 100°F or more. Hot, dry winds during the summer months along with seasonal Santa Ana winds are common to Palm Springs.

The San Andreas Fault is a major earthquake fault located only a few miles north of Palm Springs. In addition, there are numerous minor faults located throughout Riverside County which are subject to earthquakes.

The area encompassing the present City of Palm Springs was discovered centuries ago by the Agua Caliente Band of Cahuilla Indians, who established their village around the natural hot mineral springs (current site of the Spa Resort Casino) known for their medicinal and healing capabilities. Throughout the 19th century, many explorers, colonizers, and soldiers came through the desert, but it wasn't until 1853 that United States Topographical Engineers described the combination of palm trees and warm springs they encountered as "Palm Springs." The name became more commonly used several years later.

In 1877, the Southern Pacific Railroad completed its line through the desert to the Pacific Ocean. A Congressional policy established that every odd section of land for 10 miles on either side if the track become the property of the railroad. Early development in Palm Springs was associated with attempts to establish agricultural activity in the area and in the southern portions of the Coachella Valley.

In the 1920s, the region became a retreat for successful business and movie personalities, who took advantage of the warm weather, the remote location, and the hot water spas. The tourist and resort community of Palm Springs developed over the following decades and dramatically changed the character and economy of the Coachella Valley. In 1938, the City of Palm Springs was officially incorporated.

In the 1950s, about 3000 sections of land were transferred to the Agua Caliente Band of Cahuilla Indians in a checkerboard pattern. The checkerboard pattern is divided into Indian and non-Indian property holdings, based upon a grid pattern of square-mile sections of alternating ownerships. Indian land which has been subdivided into sections, half sections, and sometimes even smaller areas—is controlled by the Tribal Council or by individual allottees of the Agua Caliente Band of Cahuilla Indians (the Tribe). Over time, this checkerboard land-ownership pattern has led to inconsistent patterns of development since the majority of development has occurred on non-Indian and non-Tribal owned lands.

The City has one hospital and the only trauma center for the Coachella Valley, Desert Regional Medical Center. The Medical Center is a 385-bed full service acute care facility that includes a Level II trauma center. There are four public full service elementary schools, one middle school, one high school, and one alternative school within the City of Palm Springs that are administered by the Palm Springs Unified School District. The city has a regional airport (Palm Springs International Airport), numerous large and small hotels, shopping centers, and commercial/industrial zones. Interstate 10 and State Highway 111 traverse the City as well as several main arterial roadways.

The City operates its own police and fire departments and also relies on local volunteer organizations for assistance in emergency response, communications, and other necessary emergency services.

2.6.23 Perris

The Jurisdiction is a corporate city in Riverside County in the Coachella Valley of California. The City of Perris is 35 Square Miles in size with a population of 77,000 people and is 10 miles southeast of the County seat, the City of Riverside. Jurisdiction sits directly adjacent to San Bernardino County on its southern boundaries, and San Bernardino County is ten miles to the north. The Burlington Northern and Santa Fe Railway Railroad and California State Highway 215 both run through the middle of the City. State Highway 74 is runs through 4th Street, continues as part of CA State Highway 215 then continues along Pincante Rd through Romoland on the west. Lake Perris is located on the northeast outside City of Perris. Perris Valley Airport is privately owned. It lies in the lower center of the city off Goetz Road. March Air Force Base is located just north of the city and its jurisdiction connects to City of Perris.

Jurisdiction’s climate can be described as sunny, mild Mediterranean climate. On average, Perris gets only 10 inches of rain per year. The humidity is quite low all year. The July high temperatures average 97 degrees, while January low temperatures average 35 degrees. There are 275 sunny days per year.

City of Perris was incorporated in 1911. The California Southern Railroad connected through the city in the 1880s to build a rail connection between the present-day cities of Barstow and San Diego. This is how the City of Perris began to form. While the railroad had played an important part in establishing the new town, the people now turned to agriculture for their future development. Because of limited groundwater, dry grain farming was the main crop before water was brought to the valley by the Eastern Municipal Water district in the early 1950's. Alfalfa, the King potato (which would produce two crops a year), and still later, sugar beets became the mainstay of farming the Perris Valley.

With the construction of Lake Perris in the late 60's and early 70's - Perris once again became attractive - this time as a recreational area. In addition to the lake's activities Perris' hot air ballooning, Orange Empire Railway Museum and skydiving activities attract international recognition.

2.6.24 Rancho Mirage

The City of Rancho Mirage is located in Riverside County in the Coachella Valley of California. Rancho Mirage is approximately 24.8 square miles in area and is 70 miles east of the County seat, the City of Riverside. Riverside County covers 7,208 square miles (approximately the same size as the state of New Jersey) and stretches from Orange County to the Colorado River which forms the border with the state of Arizona. Adjacent counties include San Bernardino County to the north, La Paz County Arizona to the east, Imperial and San Diego counties to the south and Orange County to the west.

Rancho Mirage is located within the Coachella Valley, which extends for approximately 45 miles (72 km) in Riverside County southeast from the San Bernardino Mountains to the saltwater Salton Sea, the largest lake in California. The Valley is approximately 15 miles (24 km) wide along most of its length, bounded on the west by the San Jacinto Mountains, the south by the Santa Rosa Mountains and on the north and east by the Little San Bernardino Mountains. These mountains peak at around 11,000 feet (3,400 m) and tend to average between three to five thousand feet. This effectively blocks the marine layer familiar to most other Southern Californian areas. The Salton Sea is located to the southeast of the Coachella Valley with a surface elevation of 227 feet below sea level.

Regional geomorphology is largely due to the San Andreas Fault which enters the valley at the Chocolate Mountains and Salton Sea in the southeast corner and then follows the centerline of the Little San Bernardino Mountains on the north side of the Coachella Valley. The fault is easily visible along its northern length as a strip of intermittent green against an otherwise bare mountain.

Geographically, the county is mostly desert in the central and eastern portions of the county which includes the Coachella Valley and the City of Rancho Mirage. The Coachella Valley is considered the northwestern portion of the Sonoran Desert. In the summer months daytime temperatures range from 104 °F (40 °C) to 118 °F (48 °C) and nighttime lows from 77 °F (25 °C) to 86 °F (30 °C). During winter, the daytime temperatures range from 70 °F (21 °C) to 90 °F (32 °C) and corresponding nights range from 46 °F (8 °C) to 68 °F (20 °C) making it a popular winter resort destination. Due to its warm year-round climate, the region is well known to produce tropical fruits such as mangoes, figs and dates. According to the Coachella Valley Water District, average annual rainfall is approximately three inches. The mountains that flank the west and south

sides of the Valley are often covered in snow during the winter months, and it is not uncommon for snow levels to dip to 2000’.

The primary arterial to the Coachella Valley is Interstate 10, which runs east-west, while State Route 111 runs for about 30 miles along the southwestern rim of the valley and serves as the main arterial highway between almost all Coachella Valley cities. A four-lane expressway, State Highway 86S opened in the early 1990s as a "special" bypass (hence the "S" designation) of two-lane Highway 86 and connects with Imperial and San Diego counties. The rail right-of-way that parallels the I-10 freeway between San Bernardino and Indio is operated by the Union Pacific Railroad (UPRR). There are no surface roads crossing the railroad tracks within the City. One older two-lane bridge (Ramon Road) and one newly constructed six lane bridge crosses the railroad and Interstate 10.

Currently Amtrak’s Sunset Limited train is the only passenger rail service that runs through the Coachella Valley three times per week between Los Angeles and New Orleans. The Sunset Limited train operates through this area in the very early hours of the morning in both directions and primarily serves the leisure and tourism market. The Riverside County Transportation Commission (RCTC) and the State of California have been evaluating the feasibility of establishing an intercity passenger rail route between Los Angeles, Fullerton, Riverside, Palm Springs, and Indio. The Union Pacific Railroad (UPRR) continues its firm opposition to any new passenger service on its tracks through this area. Notwithstanding this opposition, the California Department of Transportation (Caltrans) continues to propose such service in the California State Rail Plan. Caltrans has no unilateral powers to compel the UPRR to permit the operation of this train. Nevertheless, for intercity trains (as opposed to a commuter or Metrolink train), there are certain federal processes in place that can ultimately lead to an order compelling the railroad to operate the service.

The public agencies requesting the intercity service may be required to invest large sums in the physical infrastructure of the railroad. Some estimates place the capital investment requirement at a minimum of $500 million for a new set of tracks. RCTC is working closely with the Coachella Valley and the Pass Areas on this issue and supports the expansion of rail service to additional areas of Riverside County.

Public transportation in the valley, including Rancho Mirage, is provided by the SunLine Transit Agency based in Thousand Palms, which was among the country's first transit agencies to totally convert to alternate fuel vehicles, including full-sized buses powered by fuel cells.

Aviation in the area is served by the Palm Springs International Airport in Palm Springs, Jacqueline Cochran Regional Airport in Thermal and Bermuda Dunes Municipal Airport

in Bermuda Dunes. Palm Springs International airport (PSP) is currently served by ten airlines. In 2015, there were a total of 1,888,657 passengers embarking or disembarking at PSP. Although Alaska, SkyWest and American have the largest share of passenger travel; WestJet has grown significantly with the influx of Canadians purchasing vacation homes in the valley. Currently, WestJet serves Vancouver, Calgary, Edmonton, Winnipeg and Toronto (seasonally). Seasonal flights from PSP to New York (Virgin), San Jose (Horizon), Stockton (Allegiant), Denver (Frontier) and Houston (Continental).

The City of Rancho Mirage is a well-known desert resort and residential community in the Coachella Valley. With major regional medical facilities, the Valley's most vibrant and attractive commercial centers, and world-class resort hotels, Rancho Mirage is a desirable destination for residents and visitors alike.

The City has taken shape in a beautiful valley setting surrounded by dramatic views of the Santa Rosa and San Jacinto Mountains to the south and west and the Little San Bernardino Mountains to the north. Lushly landscaped golf course communities and broad arterial streets on the Coachella Valley floor have created a "garden in the desert".

The City of Rancho Mirage was incorporated on August 3, 1973, bringing autonomy to residents and businesses over land use and development on approximately 15.6 square miles of land. Since City incorporation, expansion has occurred without sacrificing the quality of life that originally attracted residents and the City now comprises approximately 16,070 acres or 25 square miles. Its Sphere of Influence (SOI) – County managed lands over which the City has an advisory role – total another 1,202 acres or 1.9 square miles. The City of Rancho Mirage has a Council/Manager form of government and became a Charter City in 1997.

From the beginning, Rancho Mirage was primarily a residential community. Succeeding decades brought new assets and resources. In the 1960s, commercial businesses expanded and "Restaurant Row" developed. The 1970s saw the introduction of the Eisenhower Medical Center as well as five of the City's country clubs. Residential construction boomed in the 1970s and 1980s and that period also saw the addition of world class destination resorts – Marriott's Rancho Las Palmas (now KSL's Rancho Las Palmas Resort & Spa), the Westin Mission Hills and The Lodge (now the Ritz Carlton Rancho Mirage).

Development in past years has focused along Highway 111 with the majority of future development expected to be near Interstate 10. From the 1990s to present day, the City has added entertainment and shopping venues such as The River (a 250,000 square foot mixed use entertainment/commercial development) and Monterey Marketplace (a 400,000 square foot "big box" retail center); worked with the Annenberg Trust to transform the Sunnylands Estate and Visitors Center into a world class educational/conference

facility and completed the state-of-the-art Rancho Mirage Public Library. In addition, the recent completion of the Section 19 Specific Plan will permit a large-scale mixed-use development adjacent to the 16 story Agua Caliente Casino Resort and proposed multi-modal transit station.

2.6.25 Riverside

The City of Riverside is located in Riverside County, California, United States, and is the county seat. Named for its location beside the Santa Ana River, it is located at the center of the Inland Empire and is the largest city in the Riverside-San Bernardino-Ontario metropolitan area of Southern California, the 4th largest inland California City and is located approximately 60 miles (97 km) east of Los Angeles. Riverside is the 59th most populous City in the United States and the 12th most populous city in California. The City of Riverside is currently 81 square miles according to the 2015 U.S. Census Quick Facts and has an estimated population of 322,424.

2.6.26 San Jacinto

The City of San Jacinto is a corporate city in Riverside County in the San Jacinto Valley of California. It is approximately 27 square miles in area and is approximately 30 miles east of the County seat, the City of Riverside. San Jacinto is approximately 90 miles east of the City of Los Angeles and approximately 90 miles north of San Diego. The City of San Jacinto sits directly north of City of Hemet on its southern boundary and approximately 10 miles southeasterly of City of Moreno Valley. California State Highway 79 runs north and south through the City. The San Jacinto River, normally a dry riverbed that begins in the San Jacinto Mountains, runs through the northern part of the San Jacinto Valley in a north westerly direction, sitting on the north-easterly boundary of the City. The Soboba Band of Luiseño Indians Tribe is also located northeasterly and adjacent to the City of San Jacinto.

The climate in San Jacinto is considered moderate. Summers are warm and winters are mild. You can usually count on a nice sunny day since San Jacinto averages 342 days of sunshine each year and are typical of that of the rest of Riverside County. Winter weather is mild averaging 70-75 degrees daytime, and summers are typically warm with highs averaging 90-95 degrees. The average rainfall is approx. 12.5 inches per year.

Founded in 1870, and incorporated in April 1888, San Jacinto is one of Riverside County's oldest communities, with roots that stretch back to the earliest days of California. Because of its mild climate and fertile land, the region became home to Native Peoples, Spaniards, Mexicans, and Americans - all of whom have made a unique and indelible imprint on the character of the valley. Tourism also had an impact on the Valley, beginning around 1900.

Natural hot springs along the north side of the Valley stimulated the development of several tourist resorts with hotels, guest cabins and bath houses. Gilman Hot Springs was the best-known resort. It was originally developed in the 1880s, and was acquired in 1913 by the Gilman family, who ran the resort for 65 years. Soboba Hot Springs was also popular, with its Indian-style cottages scattered along the hillside. Further west was Eden Hot Springs.

The Estudillo Mansion is currently owned by the City of San Jacinto. The City of San Jacinto successfully completed the interior and exterior Estudillo Mansion Restoration project. There has also been the addition of a Water Conservation Garden, parking lot and landscape improvements with a dedication event on May 16, 2009

The City of San Jacinto is a general-law form of government with Council-Manager administration. Council members are elected, with the City Manager appointed by the five councilmembers elected at-large. The City of San Jacinto is not a participant in the Riverside County Operational Area Multi-Jurisdictional Local Hazard Mitigation Plan. The city has an estimated population of 45,563.

2.6.27 Temecula

The City of Temecula is an incorporated city in Riverside County in the Southwestern portion of the County. It has a population of approximately 106,780. Since incorporation in 1989, as a General Law City, Temecula has created a desirable community with exceptional public safety, community services, recreational amenities, and a robust commerce.

It is 30.17 square miles and is 30 miles south of the County seat, the City of Riverside. Temecula sits north of and adjacent to San Diego County. The City's eastern and western boundaries are with Riverside County Jurisdictions and to the north is the City of Murrieta. Interstate Highway 15 travels north and south through the western portion of the City. State Highway 79 travels east from the City on both the southern and northern portions of the city. Murrieta Creek which is a pathway from Lake Skinner Reservoir is on the western portion of the City and Temecula Creek which is a pathway from the Vail Lake Reservoir is on the southern portion of the City. They combine to form the Santa Margarita River in the extreme southwest portion of the jurisdiction. The Santa Margarita Mountains run along the western portion of the jurisdiction.

The City of Temecula's mean yearly temperature 64.7°F with an average high temperature of 76.5°F and an average low of 52.9°F. The average annual rainfall is 11.11 inches.

2.6.28 Wildomar

The City of Wildomar is a corporate city in Riverside County in the Southwest County of California. It is approximately 24 square miles in area and is 41 miles south of the County seat, the City of Riverside. City of Wildomar sits directly adjacent to the City of Murrieta on the south, City of Menifee on the east, and the City of Lake Elsinore on the northern boundaries. The 15 freeway runs through the middle of the City. The Santa Margarita Watershed runs through the southwest portion of the City. Stormwater runoff from portions of Lake Elsinore and Wildomar collects in the Murrieta & Temecula creeks and forms the Santa Margarita River south of the City.

City of Wildomar's climate in winter is almost never extreme, low temperatures rarely go below freezing. In the summer the high temperatures will hover in the 90's, but some days may go over 100 during heat waves. Rainfall for City of Wildomar is typical of that of the rest of Riverside County.

Wildomar is a community of old and new, more mature homes and acreages with horses and other animals mixed with more modern housing tracts. Nestled between the cities of Murrieta and Lake Elsinore, Wildomar officially became a city on July 1, 2008, at that time home to about 28,000 residents.

The name Wildomar was coined from the names of its three founders -- the WIL from William Collier, the DO from Donald Graham and the MAR from Margaret Collier Graham.

2.7 Tribes of Riverside County

Riverside County has 12 Indian Tribes within or bordering the County.

2.7.1 Agua Caliente Indian Reservation

The Agua Caliente Band of Cahuilla Indians is a federally recognized Indian Tribe located in Palm Springs, Calif., with 32,000 acres of reservation lands that spread across Palm Springs, Cathedral City, Rancho Mirage, and into the Santa Rosa and San Jacinto mountains. The Tribe's developments include two Palm Springs golf courses, the Spa Resort Casino in downtown Palm Springs, and the Agua Caliente Casino Resort Spa in Rancho Mirage, which includes the 2,000-seat concert venue, The Show. It also operates the Indian Canyon and Tahquitz Canyon parks, both open to the public.

The Tribal Government employs approximately 200 employees, in addition to over 2,000 employees directly associated with its gaming and hospitality operations. The majority of these employees do not live on the Reservation, but commute from outlying communities, such as, Banning, Palm Desert, Desert Hot Springs, and the high desert mountains, increasing the population on the Reservation during the normal business hours.

Tribal employees work in Tribal offices or in the field. Normal business hours are between the hours of 7:00 a.m. to 6:00 p.m. Monday through Friday. It is common for certain employees (Rangers, Maintenance Crew) to work in remote areas of the Reservation where communications may prove difficult.

2.7.2 Augustine Indian Reservation

The Augustine Band of Cahuilla Indians (Tribe) is a federally recognized Indian tribe located in the County of Riverside, California. It was established by Executive Order in 1891. The Augustine Reservation is part of an area occupied for the last 1,000 years by the Cahuilla Indians. The Reservation consists of approximately 602 acres located in the Coachella Valley in southern California, adjacent to the City of Coachella and approximately thirty miles from the City of Palm Springs.

2.7.3 Cabazon Indian Reservation

The members of the Cabazon Band of Mission Indians (Tribe), a federally recognized Native American Indian tribe, are descendants of the Cahuilla Indians who have occupied the desert region of southern California for 2,500 to 3,000 years. As one of approximately a dozen independent clans of the Cahuilla, the Tribe claims its own name, territory and common ancestry. Although the Tribe numbered 600 in the mid-1800s, the population had dwindled to less than 50 by the start of the 1980's. Since that time, under a

reorganized tribal government, the Tribe had increased their economic base by taking advantage of opportunities in the "Desert Resorts" area of California's Coachella Valley.

The Tribe is a sovereign nation under the laws of the United States of America and is operated under a democratic form of government. As a sovereign nation, the entire

Cabazon community consists of tribal members. Tribal authority resides in the General Council, which meets every three months to confer and make decisions on tribal issues. All tribal members, age eighteen or older, sit on the General Council, which elects a Business Committee every four years. The Business Committee manages the day-to-day operations of the tribe, including making decisions about new business ventures. As Cabazon is a relatively small tribe, this organizational strategy assures that all viewpoints of the tribal community are considered and that the skills and resources of all community members are incorporated into all facets of formulation and implementation of tribal decision making.

The Cabazon Band of Mission Indians' Reservation was established by an act of Congress in 1876 and occupies three separate areas of land consisting of 1,701 acres in the eastern end of the Coachella Valley. This land is held in trust by the federal government for the benefit of the tribe under the jurisdiction of the tribal government.

2.7.4 Cahuilla Indian Reservation

The Cahuilla Reservation is located in Riverside County near the town of Anza. It is 18,884 acres in total, but 16,884 acres of the reservation belongs to individual members of the tribe. 2,000 acres belong to the entire tribe in common. It was founded in 1875. The Cahuilla Band of Mission Indians is headquartered in Anza, California. They are governed by a democratically elected tribal council. Their current tribal chairman is Daniel Salgado and the Vice-Chairwoman is Andrea Candelaria.

2.7.5 Colorado River Indian Reservation

The Colorado River Indian Tribes include four distinct Tribes - the Mohave, Chemehuevi, Hopi and Navajo. There are currently about 4,277 active Tribal members.

The CRIT Reservation was created in 1865 by the Federal Government for "Indians of the Colorado River and its tributaries," originally for the Mohave and Chemehuevi, who had inhabited the area for centuries. People of the Hopi and Navajo Tribes were relocated to the reservation in later years.

The reservation stretches along the Colorado River on both the Arizona and California side. It includes almost 300,000 acres of land, with the river serving as the focal point and lifeblood of the area.

The primary community in the CRIT Reservation is Parker, Arizona, which is located on a combination of Tribal land, leased land that is owned by CRIT and land owned by non-Native Americans. There are other, smaller communities on the reservation, including Poston, located 10 miles south of Parker.

2.7.6 Morongo

The Morongo Reservation is located in the northern and western half of Riverside County, California, approximately 90 miles east of Los Angeles. The Reservation, with an area of approximately 54 square miles, covers portions of the southern flank of the San Gorgonio

Mountains, the northern flank of the San Jacinto Mountains, and the valley floor of the San Gorgonio River. It has contiguous boundaries with the City of Banning and the unincorporated community of Cabazon (the only city in California to unincorporated) in the San Gorgonio Pass Area.

The Tribe is one of 107 federally recognized Indian tribes in California. The Tribal Hazard Mitigation Plan (THMP) addresses all the property, infrastructure, and natural environment of the Reservation and under the authority and control of the Tribe. The plan is purposely exclusive of specific sites in its address to protected historical, religious, and cultural resources outside of the Reservation, as the interest in their protection is greater than the potential benefit of identifying their location in this plan.

The Morongo Tribal Council functions as legislative body of the Tribe and additionally manages tribal economic enterprise functions that are normally outside the scope of other governmental agencies. The Tribe provides full municipal like services to its residents including, security, fire, public work functions, water and wastewater treatment, environmental protection, waste management and recycling, natural and cultural resource preservation, emergency management, and other functions typical of a functioning community. According to the United States Census Bureau's "Profile of General Demographic Characteristics: 2010 the population on the Reservation is 1,353 persons.

2.7.7 Pechanga Indian Reservation

The Pechanga Indian Reservation borders the City of Temecula to the northwest, the Town of Rainbow to the southwest, and the Cleveland National Forest to the south and east. The General Council of the Tribe is made up of the adult voting members of the band and elects the Pechanga Tribal Council. The Pechanga Indian Reservation encompasses over 6,700 acres with the most recent lands added in 2008. The current land use is mostly rural residential, with homes generally located along the central portion of the reservation along Pechanga Creek.

2.7.8 Ramona Band of Cahuilla

The Ramona Band of Cahuilla is a southern California Indian tribe whose reservation is located approximately thirty miles east of Temecula and four miles north of the unincorporated town of Anza, off Highway 371 in Riverside County. The Ramona Reservation was set aside by Executive Order in 1891 and a trust patent for the Reservation was issued in 1893.

The Ramona Reservation encompasses approximately 560 acres. The Reservation is situated at the southwestern base of Thomas Mountain in the southern San Jacinto Mountains. Hog Lake Road provides the only access to the Ramona Reservation.

There are 3 homes on the Reservation and seven residents. There are also several additional buildings, including a maintenance yard, a powerhouse and 5 yurts associated with the Band's Eco-tourism project. All electricity for the homes/buildings is provided by

hybrid electrical systems consisting of solar and wind generation with generator back-ups. None of the homes/buildings on the reservation are connected to the “grid”.

In early 2017, approximately 82 acres of land were transferred from fee simple into trust status by the Ramona Band of Cahuilla. Thus, the lands are now tribal lands under the jurisdiction of the Ramona Band of Cahuilla. The lands transferred include approximately 75 acres along Bautista Road just south of the Ramona Reservation and approximately 6.73 acres along SR 371 in Anza.

There are three (3) buildings located on the lands in Anza. The buildings included the Ramona Band’s administrative offices and library. Each of the buildings has access to the power grid. Water is provided to the buildings via wells located on the property, and each of the buildings has a septic system. Moreover, a tiger tank of 5000 gallons provides water storage for use, if needed, for fire suppression.

The lands located along Bautista Road are all unimproved. One of the parcels lies at the junction of Bautista Road and Hog Lake Road and is the access point to the Ramona Reservation. The other parcels are covered with vegetation.

2.7.9 Santa Rosa Indian Reservation

The Santa Rosa Band of Cahuilla Indians Reservation is part of an area, which has been occupied by the Cahuilla for the past 1,000 years. The Reservation consists of 11,021 acres in four separate parcels and is located in the Santa Rosa Mountains near the community of Anza in Riverside California.

They are descendants from the Mountain Cahuilla Band, which historically occupied the mountains south of San Jacinto Peak. The largest parcel is called the Santa Rosa Parcel

and is located 1.25 miles east of the junction of SR –74 and SR – 371. Three separate parcels completely occupy Sections 32, 34, and 36 of T7S, R5E and are one mile southeast of the main Santa Rosa Parcel. The parcel in Section 34 is called the Old Village Parcel, where their ancestors first settled and the parcel in section 36 is called the Toro Parcel, which is leased out as a microwave relay communications site.

The Santa Rosa Reservation was established on February 2, 1907, under authority of the Act of 1891 as amended. The Act of April 17, 1937, authorized the Secretary of the interior to purchase 640 acres to be held in trust for the Tribe. All reservation land is tribally owned and un-allotted, though some of the land is under assignment and has been passed from generation to generation.

Currently there are approximately 70 people living on the reservation. They are a customs and traditions tribe with a total of 118 members. A tribal council governs with members elected to two-year terms. Because of the very limited size of the band, the Tribal Council also acts as the Planning Committee.

2.7.10 Soboba Band of Mission Indians

The Soboba Band of Luiseno Indians ancestral home is the Soboba Reservation located on the San Jacinto River at the base of the western foothills of the San Jacinto Mountains in Riverside County, California. The Tribal trust lands consist of approximately 7,877 acres of reservation including a large parcel of adjoining undeveloped property called the "Jones Ranch". The current population on the Soboba Reservation is approximately 1,200.

2.7.11 Torres-Martinez Indian Reservation (partly in Imperial County, California)

The Torres Martinez Desert Cahuilla Indians (Tribe) is a Sovereign Indian Nation and a federally recognized Indian Tribe located in Southern California. Its Tribal land base was established by Executive Order of the United States Federal government on May 15, 1876, as the Torres Martinez Reservation. The Tribal land base consists of 24,822 acres of harsh rugged desert terrain in a checkerboard pattern located in the most rural parts of the Coachella Valley in Southern California. A portion of the Tribal area is submerged under the Salton Sea. The Reservation lands straddle Imperial and Riverside Counties and lie about 50 miles north of the US – Mexico International Border. Temperatures reach 120 degrees Fahrenheit in the summer.

The majority of those living on the reservation live in the Tribe's housing development project which was funded by HUD (36 homes) located about 6 miles away from the Tribe's headquarters (boundaries: Avenue 62 North, Avenue 64 South, Monroe St./Wilma Jean Way West, and Jackson St. East).

The Tribal school-age children who live on the reservation for primarily attend public schools (Grades K-12th) administered by the Coachella Valley School Unified District (CVUSD) or the Desert Sands Unified School District (DSUSD). Several public schools are located within or near the reservation boundaries of the Tribe.

2.7.12 Twenty-Nine Palms Indian Reservation (partly in San Bernardino County)

The Twenty-Nine Palms Band of Mission Indians is a United States federally recognized Tribe located in Southern California. The Tribe's members are descendants of the Chemehuevi, who are indigenous people that migrated from the Colorado River area. Geographically, the Tribe has two Reservation sections located near the City of Twenty-nine Palms in San Bernardino County and near the City of Coachella in Riverside County. The San Bernardino County section contains 150 acres of undeveloped land which is adjacent to the Joshua Tree National Park. The Riverside County section contains 242 acres, which has rights-of-way for the Interstate 10 freeway and State Highway 86. On this section, the Tribe has an operating Class 3 Gaming Facility, Tribal Administrative Offices, and Tribal Environmental Protection Agency, which accounts for more than 700 employees. Currently, there is no residential development on either Reservation section.

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Section 3.0 - The Planning Process

While the Disaster Mitigation Act of 2000 ("DMA 2000") requires that local communities address only natural hazards, the Federal Emergency Management Agency (FEMA) recommends that local comprehensive mitigation plans address human created and technological hazards as much as possible. The Riverside County Operational Area 2018 Multi-Jurisdictional Local Hazard Mitigation Plan addressed an expansive set of hazards that include human created and technological hazards.

The 2023 Riverside County Multi-Jurisdictional Local Hazard Mitigation Plan update review process started in March 2022.

3.1 Planning Process Overview

EMD formed a planning team and continued to utilize the Operational Area Planning Committee (OAPC) as the Multi-Jurisdictional Local Hazard Mitigation Plan (MJLHMP) Steering Committee.

The planning team was comprised of various EMD personnel who engaged Riverside County department representatives, MJLHMP participants, and key personnel to discuss, and review the MJLHMP for the 2023 update.

A LHMP annex template and other various tools were developed and sent to participants to assist them with updating their LHMPs. EMD held multiple meetings, workshops, and conference calls to assist participants with drafting or updating LHMPs.

(See Appendix B for Participants).

3.2 Hazard Mitigation 2023 Planning

EMD staff recognize the importance of involving stakeholders using the following planning methodologies:

- Reviewed the process of assessing risks and identifying hazards with all participants
- Reviewed mitigation actions that are proposed, pending, and completed
- Encouraged participation with the planning process by providing updates at advisory meetings, workshops, jurisdictional meetings, and community meetings
- Identified and provided information and resources to MJLHMP participants to assist them with the development of their LHMPs
- Posted information on the EMD website for public access and feedback on the MJLHMP
- Email upcoming mitigation training information to Riverside County OA participants

Project Pre-Plan Research:

- Reviewed the 2018 MJLHMP and the FEMA Plan Review Tool and feedback
- Reviewed the 2013 FEMA Local Mitigation Planning Handbook
- Reviewed the 2011 Local Mitigation Plan Review Guide
- Reviewed the 2022 Local Mitigation Plan Review Guide
- Reviewed the 2018 State of California Multi-Hazard Mitigation Plan
- Identified gaps with previous plan and discussed findings with management team
- Determined resolutions for gaps and discuss what updates are necessary

Project Plan Ongoing Maintenance Strategies:

- Continually update the MJLHMP
- Engage participants through outreach
- Submittal of participant documents needed to keep plan current
- Review mitigation projections and actions at OAPC
- Perform annual and post disaster declaration reviews

3.3 2023 MJLHMP Update Process / LHMP Tools

The MJLHMP Steering Committee determined the best approach for the 2023 MJLHMP update was to use the same tools used for the 2018 MJLMP. The following worksheets, tools, and resources were utilized as a reference for each jurisdiction to evaluate its hazards, capabilities, and to assist in developing goals and strategies:

- Local Jurisdiction Contact Information worksheet
- Hazard Identification Questionnaire
- Specific Hazards Summary Worksheet
- Jurisdiction Vulnerability Worksheet/ Severity Table
- Local Jurisdiction Proposed Mitigation Action and Strategy Proposal
- Local Development Trends Questionnaire
- Mitigation Project Tracking and Ranking Spreadsheet
- Website links to obtain applicable risk assessment information such as:
    - https://www.myplan.caloes.ca.gov
    - https://www.fema.gov/emergency-managers/practitioners/resilience-analysis-and-planning-tool
    - https://hazards.fema.gov/nri/map
    - https://hazards.fema.gov/hll/library
- EMD facilitated and hosted plan development workshops
- FEMA Local Mitigation Planning Policy Guide
- Assistance with completing LHMPs provided by EMD Staff
- Assistance for jurisdictions to obtain/create maps
- Mitigation trainings and educational resources
- 2023 Update Timeline

The 2023 MJLHMP has a variety of participants within Riverside County that includes cities, educational districts, and special districts.

The participant's list is found in Section 1.4 or Appendix B: Participants.

EMD and the MJLHMP Steering Committee intends for the MJLHMP to be comprehensive, easy to understand, and easy to implement. The final 2023 County of Riverside Operational Area MJLHMP consists of a Base Plan with annexes that are LHMPs from participating jurisdictions and districts. Participating jurisdictional and district LHMPs require separate approval from Cal OES and FEMA and adoption from their respective governing bodies for mitigation projects to be eligible for receiving funding from Hazard Mitigation Assistance (HMA) and other FEMA grant programs. This Base Plan indicates linkages to other plans (e.g., County General Plan and the State Hazard Mitigation Plan). (See Annexes).

Outreach presentations were given in various community meetings, four (4) MJLHMP / LHMP workshops and various sessions were held with individual jurisdictions (See Appendix C).

The review process of the draft annexes is outlined as follows:

- Participants submitted draft LHMPs via email to EMD for review and comments
- EMD Planning team held standing meetings with Cal OES planning review staff to troubleshoot challenges and enhance the update process
- Checklists were utilized to document all components of the plans were complete and accompanied with all attachments referenced in the plan
- Acknowledgement and checklists were sent back to the participants noting identified gap findings and comments
- After revisions were completed by participants, the draft was resubmitted to EMD for incorporation into the MJLHMP
- All correspondence, meetings, and conference calls were recorded to track ongoing development of annexes

3.4 Operational Area Planning Process

EMD's MJLHMP planning team began the update planning efforts by notifying jurisdictions of a regional planning process and assisted OAPC in forming an OA MJLHMP Steering Committee to provide feedback into the 2023 plan update. The April 2022 kickoff meeting started the 2023 MJLHMP update process.

The OA MJLHMP Steering Committee included representatives from EMD and OAPC. OAPC membership includes representatives from the County departments and political subdivisions within Riverside County. The initial MJLHMP update process was presented to the OAPC attendees and a survey of intent to participate was distributed at the January 13, 2022, meeting. Letters of commitment were requested from jurisdictional and district representatives indicating their intent to participate.

The quarterly Operational Area Planning Committee (OAPC) meetings are intended to provide a forum for discussion of emergency management issues to the following:

- local jurisdictions
- non-profit organizations
- faith-based organizations
- governmental agencies
- tribal communities
- special districts
- educational districts and institutions
- utility companies
- public transportation
- healthcare facilities

All participants of OAPC were invited and encouraged to participate in the 2023 MJLHMP update. Outreach to these agencies was done both during meetings as well as through follow up email to ensure the county was inviting all stakeholders to participate in the planning process. For a list of specific individuals who were invited to the OAPC meetings and received information about the planning process, see the *OAPC contact list* identified in appendix B of this plan.

The Operational Area Planning Committee (OAPC) Mission is:

- To foster communications and to coordinate OA planning activities for emergency and disaster preparedness, mitigation, response, and recovery.

- To utilize the Standardized Emergency Management System (SEMS), California Government Code 8550 et. Seq., the National Incident Management System (NIMS), and Homeland Security Presidential Directive (HSPD-5)

OAPC has several subcommittees who are responsible for determining the use and distribution of funds from grants channeled directly through the Operational Area, i.e., Anti-Terrorism Approval Authority (ATAA), Training and Exercise subcommittee, Community Emergency Response Team (CERT) Program Managers subcommittee, Communications subcommittee, Plans Review subcommittee.

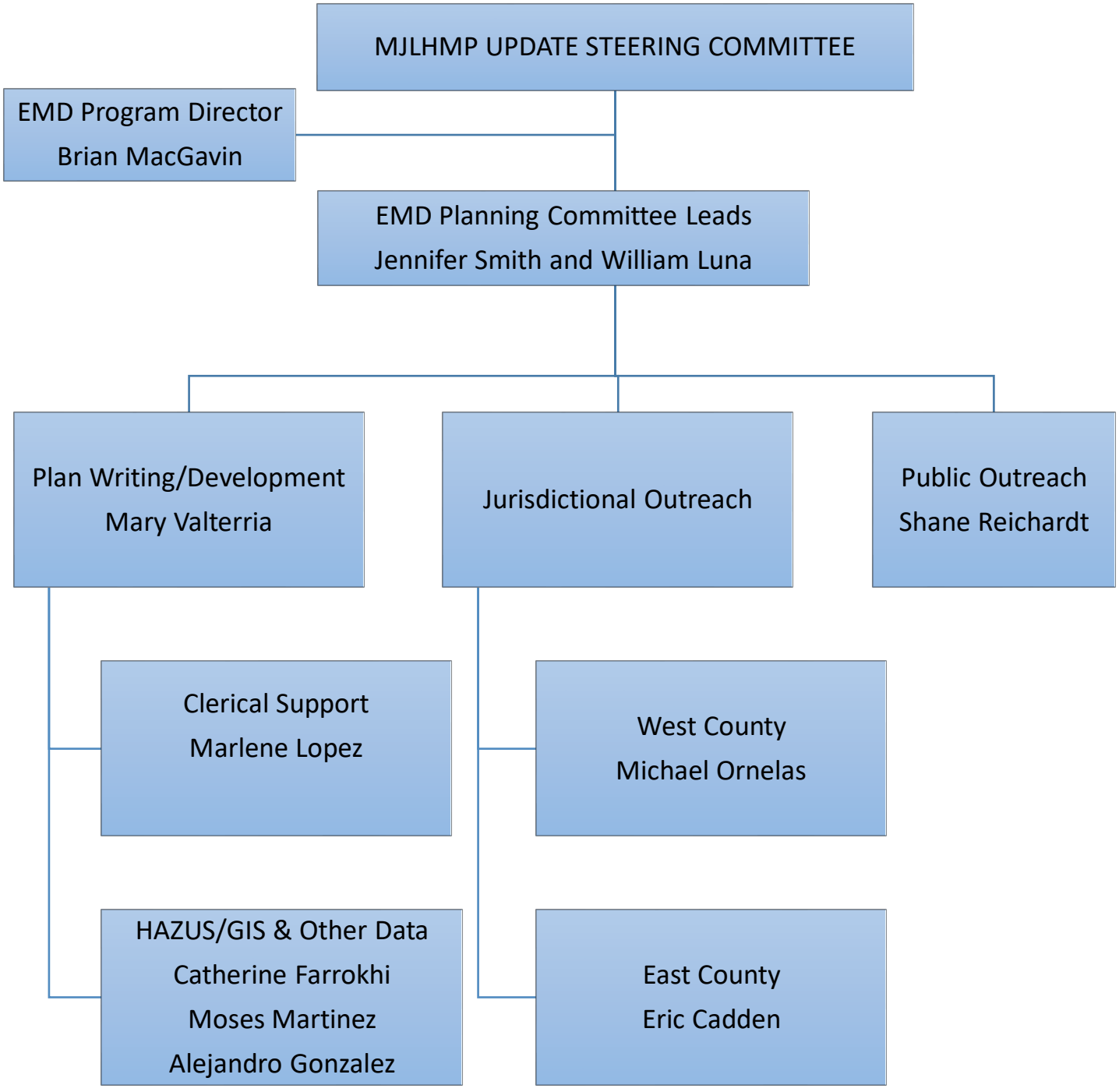
3.5 EMD Planning Team

The EMD Planning Team consists of the EMD personnel with the following job classifications:

- Program Director
- Emergency Services Manager
- Emergency Management Program Supervisor
- Emergency Services Coordinator
- Senior Emergency Medical Services Specialist
- Administrative Services Analyst II
- Office Assistant III
- Senior Geographic Information Systems Specialist
- Supervisor Research Specialist
- Business Process Analyst

The following figure shows the EMD Planning Team Organizational Chart.

Figure 9: County of Riverside Emergency Management Department Planning Team Organizational Chart



3.6 MJLHMP Steering Committee

The Steering Committee meetings provide a forum for discussing the progress of the plan update, identify, and refine hazards, goals, strategies, timelines, and potential mitigation projects. In addition, the Committee identifies new resources, opportunities for trainings, and recommendations to refine the plan update process.

Information discussed during steering committee meetings include:

- Review information provided and identified necessary corrections for updates
- Review definitions for the hazards to ensure accuracy
- Updating additional incidents relating to hazards
- Provide supporting documentation with credible sources including but not limited to, studies (planning, safety, mitigation, etc.) maps, charts, tables, photos, surveys, cost-benefit analysis, or technical guidance
- Hazard prioritization, and tracking and ranking of mitigation actions
- Strategies for participating jurisdictions to develop and use their internal planning teams to review and update their LHMPs
- Provide updated maps upon availability

The EMD GIS Specialist provided updated countywide maps that had been included in the 2023 MJLHMP.

As part of the planning process, a review of the unincorporated area was conducted to assess existing and new hazards through utilization of MyPlan assessment tool, the Resilience Analysis and Planning Tool (RAPT) and the National Risk Index (NRI).

3.7 Public Outreach

Public notice for the MJLHMP update was posted on the Emergency Management Department Website (RivCoEMD.org), various social media platforms including Twitter and announced at various community and advisory meetings throughout the County. Feedback on the MJLHMP was open to the public and made available online. Members of the public were requested to provide insight into concerns and mitigation activities regarding the hazards affecting their specific communities. Comments received focused on identifying highest hazards concerns and mitigation activities to be addressed in the MJLHMP.

(Please see Appendix C for all outreach and meeting information)

Emergency Services Coordinators (ESCs) solicited public comment on the MJLHMP and dispersed personal preparedness materials including National Flood Insurance Program (NFIP) information throughout the County. The educational outreach was also presented at county facilitated Community Emergency Response Team training (CERT) events as well as at community events. In addition, the county sent post cards with information on National Flood Insurance Program (NFIP) to county owed fire stations. Every year during National Preparedness Month, ESCs will continue to seek comments throughout the planning cycle. English and Spanish versions of the survey and handouts were made available. Please see Appendix C for a list of 2022 National Preparedness Month outreach dates and locations.

Figure 10: EMD LHMP Website

LHMP URL: https://rivcoready.org/about-emd/plans/local-hazard-mitigation-plan

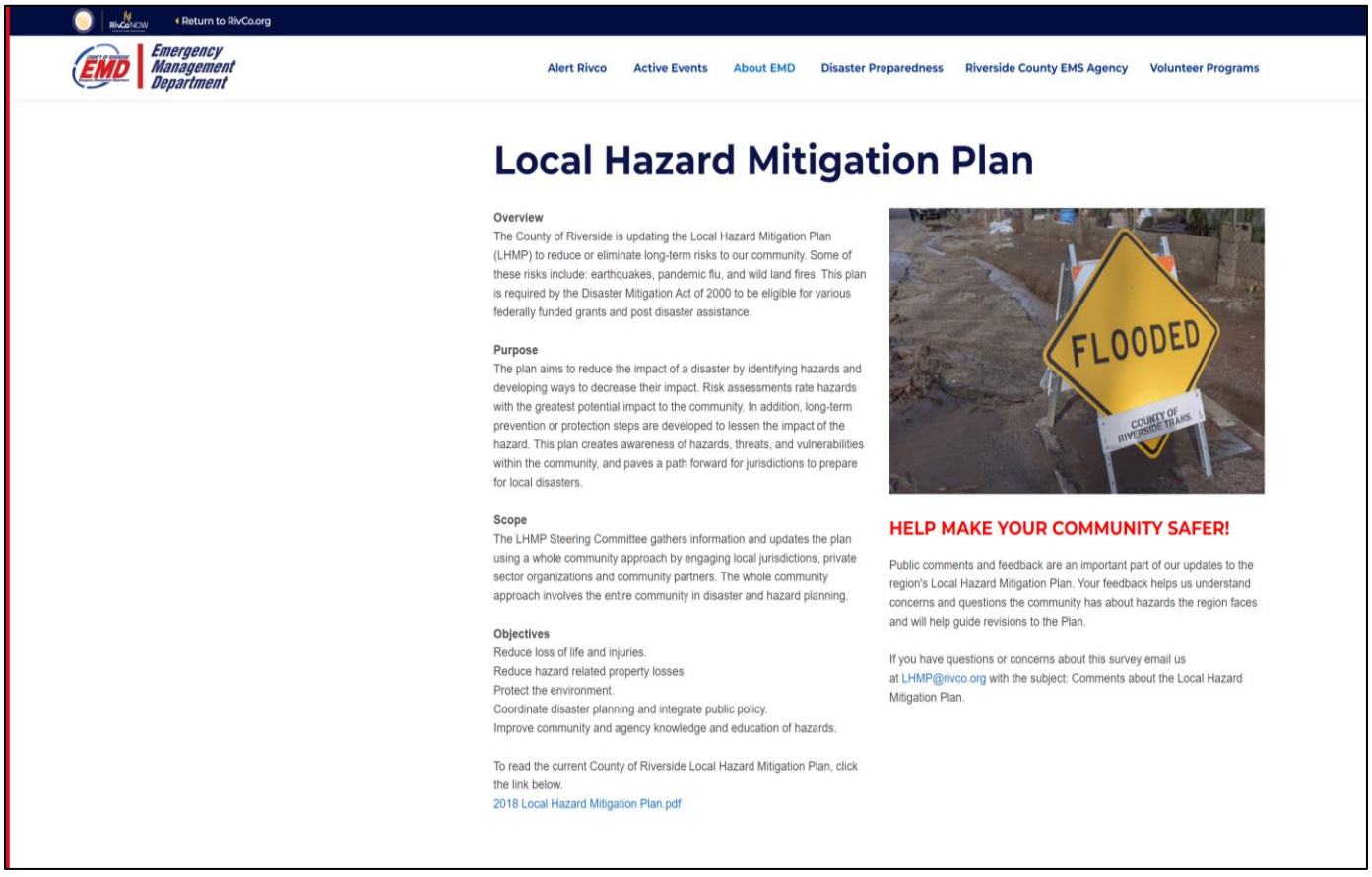


Figure 11: Twitter Post

Twitter URL:
https://twitter.com/RivCoReady?ref_src=twsrc%5Etfw%7Ctwcamp%5Eembeddedtimeline%7Ctwterm%5Escreen-name%3ARivCoReady%7Ctwcon%5Es2

Figure 12: LHMP English Postcard Side 1

Figure 13: LHMP English Postcard Side 2

Figure 14: LHMP Spanish Postcard Side 1

Figure 15: LHMP Spanish Postcard Side 2

Figure 16: Outreach Public Comment Flyer

3.7.1 Hazard Mitigation Meetings

Internal EMD Planning meetings were held to discuss review findings and the process was planned as explained in Section 3.1. The EMD MJLHMP Planning Team met regularly to discuss plan progress, participant status and any other matters as necessary.

Organizational efforts were initiated with the County and participating jurisdictions to inform and educate the participants of the purpose and need for updating the MJLHMP. The MJLHMP update process was initially discussed with OAPC during their January 12, 2022, meeting. The MJLHMP kick-off meeting was held on June 15, 2022. In August of 2022, four (4) workshops were then held for OA participants, two focused on the participants on the eastern side of the county and two focused on the participants on the western side of the county. MJLHMP participants were informed of training and educational webinar opportunities via email as they were identified by EMD planning staff.

Table 8: Presentations and Meetings

The following table documents public outreach efforts and community meetings:

Outreach Presentations and Updates		
Date	**Name of Meeting**	**Type of Presentation**
1/13/2022	Operational Area Planning Committee (OAPC) Meeting	Informed OA on upcoming plan to update
1/27/2022	Riverside County Emergency Managers Association (RCEMA)	MJLHMP status update
3/24/2022	OAPC	MJLHMP status update
4/13/2022	OA Steering Committee	Review of hazards, goals, objectives and strategies
5/12/2022	RCEMA	MJLHMP status update
5/26/2022	OAPC	MJLHMP status update
6/15/2022	OA Update Kickoff Meeting	LHMP discussion, Local Hazard Mitigation Plan update process, encouraged participation and Public Outreach
7/28/2022	OAPC	MJLHMP status update

8/3/2022	OA MJLHMP Steering Committee	Update mitigation strategies and finalize hazard profile definitions
8/17/2022	LHMP Workshops X2	Educate participants on LHMP update requirements and timelines
8/18/2022	Riverside County Emergency Management Health Care Coalition (RCEMHCC)	MJLHMP status update and outreach for participation
8/24/2022	LHMP Workshops X2	Educate participants on LHMP update requirements timeline
10/5/2022	OA MJHMP Steering Committee	Discussed timelines, risk assessment tools and progress mitigation action ranking & scoring and data collection and reporting
11/3/2022	Operational Area Planning Committee (OAPC) & Disaster Council Meeting	MJLHMP status update
11/10/2022	RCEMA	MJLHMP status update
1/4/2023	OA MJLHMP Steering Committee	Discussed timelines, risk assessment tools and progress mitigation action ranking & scoring and data collection and reporting
1/12/2023	RCEMA	MJLHMP status update
3/9/2023	RCEMA	MJLHMP status update
3/23/2023	OAPC	MJLHMP status update
4/3/2023	OA MJHMP Steering Committee	Discussed timelines MLHMP & LHMP status updates

Table 9: Participant Meetings

The following table documents participant & Informational meetings:

Date	Meeting Purpose
2/17/2022	Initial EMD MJLHMP leadership team development / discuss MJLHMP update strategies
3/22/2022	EMD MJLHMP team discuss assignments and responsibilities
6/6/2022	Initial weekly MJHMP status update with Cal OES
6/13/2022	Standing weekly MJHMP status update with Cal OES
6/20/2022	Standing weekly MJHMP status update with Cal OES
6/27/2022	Standing weekly MJHMP status update with Cal OES
7/6/2022	RCIT Mitigation project tracking and ranking
7/11/2022	Standing weekly MJHMP status update with Cal OES
7/18/2022	Standing weekly MJHMP status update with Cal OES
7/25/2022	GIS and HAZUS requirements & needs with EMD staff
7/27/2022	RCIT hazard mitigation project identification
8/1/2022	Standing weekly MJHMP status update with Cal OES
8/8/2022	Standing weekly MJHMP status update with Cal OES
8/9/2022	LHMP update guidance Moreno Valley EM
8/15/2022	Standing weekly MJHMP status update with Cal OES
8/22/2022	Standing weekly MJHMP status update with Cal OES
8/29/2022	Standing weekly MJHMP status update with Cal OES
8/30/2022	Planning risk assessments for County Departments
9/5/2022	Standing weekly MJHMP status update with Cal OES
9/12/2022	Standing weekly MJHMP status update with Cal OES
9/19/2022	Standing weekly MJHMP status update with Cal OES
9/22/2022	Cyber Terrorism risk assessment with RCIT
9/22/2022	Risk assessment assignment and information planning X2
9/26/2022	Standing weekly MJHMP status update with Cal OES
9/28/2022	Plan review, update process and clarification assistance for Beaumont City
10/3/2022	Standing weekly MJHMP status update with Cal OES
10/17/2022	City of Beaumont EMD and Cal OES clarification & assistance
10/20/2022	Risk and capabilities assessment with County Departments
10/20/2022	Follow up risk and capabilities assessment with County Flood Department
10/24/2022	Standing weekly MJHMP status update with Cal OES
10/31/2022	Standing weekly MJHMP status update with Cal OES

10/31/2022	MJLHMP next steps planning meeting EMD Planning team
11/08/2022	IID LHMP review, update process and clarification assistance
11/14/2022	Standing weekly MJHMP status update with Cal OES
11/21/2022	Standing weekly MJHMP status update with Cal OES
11/30/2022	GIS capabilities update with Cal OES and EMD
12/5/2022	Standing weekly MJHMP status update with Cal OES
12/12/2022	Standing weekly MJHMP status update with Cal OES
12/13/2022	Plan review, update process and clarification assistance Eastvale
1/4/2023	GIS mapping meeting EMD staff
1/5/2023	Plan review, update process and clarification assistance Riverside
1/9/2023	Peer review Norco LHMP
1/10/2023	Peer review Calimesa LHMP
1/11/2023	Follow up meeting with County Flood Department
1/16/2023	Standing weekly MJHMP status update with Cal OES
1/18/2023	IID Peer review of LHMP
1/18/2023	Plan review, update process and clarification assistance Indian Wells
2/7/2023	Plan review, update process and clarification assistance Indio
3/13/2023	Desert Healthcare District & Foundation (DHCD) was unaware of the workshops & meetings. This meeting was with Conrado Barzarga, Chris Christensen, and Kevin Moore to discuss what needs to be done for them to be a participant and submit a LHMP annex
3/21/23	Follow up Zoom meeting with DHCD representatives: Conrado Barzarga, Chris Christensen, and Kevin Moore

See Appendix C for a list of meetings. Many meetings were held virtually and supporting documentation will be provided upon request.

Public outreach for the MJLHMP process was conducted through multiple forums including in-person meetings, community event booths and online via survey. The forums and facilitators outlined a brief history of previous hazards, mitigation actions, and the benefits of a multi-jurisdictional hazard mitigation plan in Riverside County to interested parties.

As part of the public outreach and planning, participating members of the public were asked if they were concerned with any hazards or problems occurring in their living or working areas relevant to the identified hazards.

The top hazards participants identified as having the highest potential threat to their communities was as follows:

- Earthquake
- Wildland Fire
- Pandemic
- Floods
- Emerging Re-emerging Infectious Diseases

Additional actions requested by the public for local government to take to reduce or eliminate the risk of future hazard damages were summarized as follows:

- Monitor community development relevant to hazards
- Providing personal preparedness training and education for hazards
- Improve community infrastructure to be resilient to disasters
- Improve community education on hazards within communities
- Ensure climate change is incorporated for applicable hazard profiles

The MJLHMP planning team reviewed the public input (comments, suggestions, and general feedback) and adjusted the hazard profiles accordingly. Hazard profiles are located in Section 5, and / or mitigation actions tables within this plan.

The public input identified actions that need improvement relating to personal preparedness, and community education as noted above. The MJLHMP planning team identified that this can be improved by expanding our mitigation outreach capabilities as identified in section 7.5.1 of this plan. A specific improvement within 7.5.1 titled *Improvement to Outreach in disadvantaged communities* was developed to improve our mitigation outreach capability by assigning staff to conduct community education throughout the lifecycle of this plan. The purpose of the assigned activities will be to educate the public and specifically vulnerable populations on the different community hazards and educate the public on steps to take to be resilient to community hazards.

The public input also identified the need for continued personal preparedness training. The MJLHMP Planning Team leveraged this input and identified *CERT Training and retention* as a high priority project that must continue to be implemented as a mitigation project. This project is identified within Table 12 of this document, the *2023 MJLHMP Mitigation Actions Table.*

3.8 Existing Plans and Studies

Coordination with other community planning efforts is paramount to the success of the MJLHMP. Hazard mitigation planning involves identifying existing policies, tools, and actions that will reduce a community's risk and vulnerability to hazards. Riverside County uses a variety of comprehensive planning mechanisms, such as general plans and ordinances, to guide growth and development. Integrating existing planning efforts, mitigation policies, and action strategies into the MJLHMP establishes a credible and comprehensive way to tie into and support other community programs. This MJLHMP incorporates information from the following existing plans, ordinances, studies, reports, initiatives, and other relevant data from neighboring communities and other jurisdictions.

- General Plan
    - Safety Element
- Zoning Ordinances
- Subdivision Ordinances
- Water Conservation
- Wildfire Ordinance
- California Building Codes
- Riverside County Flood Control Master Drainage Plan
- Community Wildfire Protection Plan(s)
- Riverside County Flood Insurance Studies
- Riverside County Operational Area Emergency Operations Plan
- State of California Multi-Hazard Mitigation Plan

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Section 4.0 – Updates and Mitigation Actions

4.1 Updates to 2023 MJLHMP Plan

During the 2023 MJLHMP update, Riverside County OA identified additional revisions to hazard definitions, Flu Pandemic was changed to Pandemic and Aqueduct was changed to Aqueduct Failure. These revisions clarify and/or expand upon the profile of each updated hazard definition. In the 2023 MJLHMP pandemic ranked within our top identified hazards with earthquakes, wildland fires, floods, emerging /re-emerging infectious diseases.

The MJLHMP Steering Committee determined that communications failure should be added to the hazards in the 2018 MJLHMP because of its potential to affect response capabilities. Communication failures can have a detrimental effect on the operation of the County Emergency Operation Center (EOC) ultimately hindering the OA's ability to return to normal operations.

The maps that are in the 2023 MJLHMP plan are current maps from EMD GIS Specialist and Cal OES's MyPlan Program.

Some revisions to the 2023 plan mitigation actions included:

- Revised Risk Assessment, concerning updated hazard information
- Changed jurisdictional and Special Districts participants.
- Incorporation of existing plans, ordinances, and studies.

There have been no changes in the priorities such as hazards to be mitigated or type of mitigation actions pursued. For a list of mitigation priorities, see Table 10 of this plan.

The goals, objectives and mitigation strategies reflect our top ten (10) hazards and risks for Riverside County.

1. Earthquake
2. Wildland Fire
3. Emerging/Re-emerging Infectious Diseases
4. Pandemic
5. Floods
6. Electrical Failure
7. Extreme Weather
8. Drought
9. Hazardous Material Incident
10. Cyber Attack / Cyber Terrorism

4.2 Hazard Updates

The hazards identified in the 2023 update MJLHMP remain similar to the 2018 MJLHMP. However, OAPC changed flu pandemic to pandemic and aqueduct to aqueduct failure at their January 13, 2022, meeting for the 2023 MJLHMP update.

Table 10: Hazard Identification

Hazard	Reason Hazard Identified
Earthquake	• History of events • Presence of fault lines and geologic activity
Pandemic	• Due to viruses constantly mutating and becoming more contiguous
Wildland Fire	• History of events • Presence of a large amount of timber and brush
Electrical Failure	• History of events
Emerging / Re-emerging Infectious Diseases	• History of events
Cyber Attack	• History of events and danger to sensitive security information for Health Care Facilities
Terrorist Event	• Heightened sense of awareness since September 2001 • History of event in December 2015
Communications Failure	• History of events • Impact level of events
Flood	• History of events
Civil Disorder	• Vulnerability due to number of public venues
Drought	• History of events • Potential to drastically increase wildfire hazard
Nuclear/Radiological Incident	• Vulnerability due to hazardous material incidents, dirty bombs or improvised explosive devices

Extreme Weather	• History of events
Transportation Failure	• History of events and the presence of many transportation corridors and airport flight paths
Dam Failure	• Vulnerability of dams
Aqueduct Failure	• Presence of aqueducts serving multiple counties
Tornado	• History of events
Insect Infestation	• History of events
Jail/Prison Event	• Vulnerability from events at correctional facilities
Pipeline Disruption	• History of events • Multiple pipelines within the OA
Landslide	• History of events
HazMat Incident	• History of events • Many transportation corridors and hazardous materials facilities
Water Supply Disruption/Contamination	• History of events • Potential disruption to the OA

Non-Profiled Hazards

The MJLHMP planning team reviewed data and discussed several other hazards, which were eliminated from further discussion because they occur rarely and/or their impacts pose little to no risk. The list below details these hazards and provides a brief explanation for their omission from further profiling.

- **Avalanche** – Snowfall is an isolated problem to our mountain communities such as Idyllwild, the frequency of this hazard impacting those communities is very limited.
- **Coastal Erosion/Storm** – This hazard is very unlikely to impact the County due to the distance from coast and the ocean.
- **Hurricane** - This hazard is unlikely to impact the County due to its geographic location.
- **Tsunami** -This hazard is very unlikely to impact the County due its distance from ocean.
- **Volcano** - This hazard is unlikely to impact the County due to its proximity to active volcanos.

4.3 Mitigation Actions and Updates

4.3.1 2018 Plan Mitigation Actions (Historical Reference)

2018 mitigation strategies and projects are summarized in the following table:

Table 11: 2018 Plan Mitigation Actions

2018 MJLHMP Mitigation Actions Table					
Type of Hazard	**Mitigation Actions**	**Departments/ Jurisdictions**	**Status Update/Timeframe**	**Potential Funding Source**	**Status of moving to 2023 MJLHMP**
All Hazards	CERT Training and retention	County of Riverside Emergency Management Department (EMD)	Ongoing for the current plan (yrs. 2018-2023). There will be one yearly training in each county district to ensure members of the community get the opportunity to refresh and reinforce CERT skills. This action will be reassessed during the update phase of the 2018 MJLHMP.	State Homeland Security Program (SHSP)	Yes
All Hazards	Continue to utilize the Safety Element of the Riverside County General Plan and the Riverside County FD Master Plan as base documents to implement goals, objectives and mitigation actions	All Riverside County Departments	Ongoing for the current plan (yrs. 2018-2023). The Safety Element in the General Plan is updated as new information and changes arise. This action will be reassessed during the monitoring and update phase of the 2018 MJLHMP.	County General Fund	Yes
Earthquake	Working with CalOES and FEMA to revise the Southern California Catastrophic Earthquake Response Plan	All Cities in Riverside County	Ongoing for the current plan (yrs. 2018-2023). Riverside County will continue to collaborate with Cal OES/ FEMA to improve this plan. This action will be reassessed during the monitoring and update phase of the 2018 MJLHMP.	County General Fund	Yes

Earthquake	Reviewed Office of Statewide Health Planning and Development (OSHPD), Structural Performance Categories and Nonstructural Performance Categories (SPC/NPC) Ratings of Acute Care Hospital Buildings and reported the findings at EM Healthcare Coalition	EMD & Hospitals within Riverside County	Ongoing for the current plan (yrs. 2018-2023). These reports will continuously be reviewed to ensure updates and consistencies with any changes. This action will be reassessed during the monitoring and update phase of the 2018 MJLHMP.	Hospital Preparedness Program (HPP) Grant	Yes
Earthquake	Worked with local City Emergency Manager (EM) to address '08 Golden Guardian Riverside County Shake Out Scenario/Assumptions	EMD	Ongoing for the current plan (yrs. 2018-2023). County will continuously work with City EM to update, inform and improve the annual Shake Out Scenario and help the community increase their preparedness skills. This action will be reassessed during the monitoring and update phase of the 2018 MJLHMP.	County General Fund	Yes
Earthquake	Mitigate potential seismic hazards through adoption and strict enforcement of current building codes	County of Riverside Transportation Land Management Agency (TLMA)	Ongoing for the current plan (yrs. 2018-2023). The codes will be revised and updated to be consistent with emergency measures that can help prevent earthquake impacts in county buildings. This action will be reassessed during the monitoring and update phase of the 2018 MJLHMP.	County General Fund	Yes
Pandemic Flu	Provide training on immunization techniques	Riverside University Health System-Public Health (RUHS-PH)	Ongoing for the current plan (yrs. 2018-2023). Continue training to teach any new techniques, strategies, and to ensure all staff are proficient. This action will be reassessed during the monitoring and update phase of the 2018 MJLHMP.	Public Health Emergency Preparedness Grant (PHEP)	Yes
Pandemic Flu	Participated and conducted a Non-Medical Intervention Tabletop Exercise	EMD & RUHS-PH	Completed on 09/28/2015	Pan Flu Grant PHEP Grant	No

Pandemic Flu	Participated and conducted a Flu vaccination exercise	EMD & RUHS-PH	Completed on 11/10/2016	Pan Flu Grant PHEP Grant	No
Pandemic Flu	Generate a draft Crisis Care Plan	EMD & RUHS-PH	Completed 08/30/2016	Pan Flu Grant PHEP Grant HPP Grant	No
Pandemic Flu	Training Medical Reserve Corp (MRC) in hospital surge exercises	EMD	Started in 2011 and is on-going for the life of the current plan (yrs. 2018-2023). Continue training to keep updating and informing volunteers to increase their skills. This action will be reassessed during the monitoring and update phase of the 2018 MJLHMP.	HPP Grant State and SHSP	No
Pandemic Flu	Training Medical Reserve Corp. (MRC) volunteers in Alternate Care Site	EMD	Completed in 2014	HPP Grant SHSP Pan Flu Grant	No
Wildland Fire	Create wildfire protection zones that reduce the risks to citizens and firefighters from fire dangers	Riverside County Fire Department & CAL FIRE	Ongoing for the current plan (yrs. 2018-2023). Continuously update and develop protection zones that can help decrease wildfire risks in the community. This action will be reassessed during the update phase of the 2018 MJLHMP.	State Mission and/or Grant funding	Yes
Wildland Fire	Strengthen defensible space inspections in fire prone areas	Riverside County Fire Department & CAL FIRE	Ongoing for the current plan (yrs. 2018-2023). Continue inspections in locations that are susceptible to fires. This action will be reassessed during the monitoring and update phase of the 2018 MJLHMP.	State/County General Funds & Structural Fire Taxes	Yes
Wildland Fire	Continue maintenance of existing fire roads throughout the county to provide fire department access	Riverside County Fire Department & CAL FIRE	Ongoing for the current plan (yrs. 2018-2023). Continue keeping the roads well paved and easy to have fire trucks be able to drive on. This action will be reassessed during the monitoring and update phase of the 2018 MJLHMP.	State Mission and/or Grant funding	Yes Combined into one

Wildland Fire	Fuel reduction projects throughout the county to reduce fire potential	Riverside County Fire Department & CAL FIRE	Ongoing for the current plan (yrs. 2018-2023). Continuously improve and develop projects to lower the impact of fires in the county. This action will be reassessed during the monitoring and update phase of the 2018 MJLHMP.	State Mission and/or Grant funding	Yes
Wildland Fire	Develop and enforce construction and design standards that ensure the development incorporates fire prevention features	Riverside County Fire Department & CAL FIRE	Ongoing for the current plan (yrs. 2018-2023). Continuously enforce and update measures to prevent fire hazards. This action will be reassessed during the monitoring and update phase of the 2018 MJLHMP.	Developer Fees	Yes
Wildland Fire	Conduct and implement long range fire safe planning through code adoption/policies consistent with the Safety Element of the General Plan	Riverside County Fire Department & CAL FIRE & TLMA (Planning Division)	Ongoing for the current plan (yrs. 2018-2023). Continuously implement code policies to integrate them into the Safety Element as they are developed/updated and approved. This action will be reassessed during the monitoring and update phase of the 2018 MJLHMP.	County General Fund and Fire Marshal Fees	Yes
Wildland Fire	Ben Clark Training Center to provide wildland fire protection related classes to fire personnel	Riverside County Fire Department & CAL FIRE	Ongoing for the current plan (yrs. 2018-2023). Continuously make sure that this center is available to provide wildland fire protection classes to fire staff to improve their skills on fire mitigation and preparedness. This action will be reassessed during the monitoring and update phase of the 2018 MJLHMP.	County General Fund, private colleges fees, and State Mission Grant funding	Yes
Wildland Fire	Continue wildland fire suppression/preparedness to maintain a state of readiness throughout the year	Riverside County Fire Department & CAL FIRE	Ongoing for the current plan (yrs. 2018-2023). Continuously provide skills training to the community to be prepared for disasters. This action will be reassessed during the monitoring and update phase of the 2018 MJLHMP.	State Mission and/or Grant funding	Yes
Wildland Fire	Rapid intervention, identification, and mitigation of Goldspot Oak Bore Beetle (GSOB) trees at various infestation levels on State Responsibility Area (SRA)	CAL FIRE Unit Forester	Ongoing for the current plan (yrs. 2018-2023). Monitor infestation levels of GSOB trees to continue removing infested trees if necessary. This action will be reassessed during the monitoring	State Mission and/or Grant funding	Yes

	lands throughout the county. Herbicide or tree removal if necessary		and update phase of the 2018 MJLHMP.		
Wildland Fire	Rapid intervention, identification and mitigation of Pine Bark Beetle infestation, epidemic during times of drought. Removal of trees that are symptomatic or the use of pesticide when applicable	CAL FIRE Unit Forester	Ongoing for the current plan (yrs. 2018-2023). Monitor infestation levels of Pine Bark Beetle to continue removing infested trees or to continue using pesticides if necessary. This action will be reassessed during the monitoring and update phase of the 2018 MJLHMP.	State Mission and/or Grant funding	Yes
Wildland Fire	Continue Truck Trail and road maintenance to provide access for fire suppression vehicles and personnel.	CAL FIRE Unit Forester	Ongoing for the current plan (yrs. 2018-2023). Continuously preserve and improve Truck Trail and roads, if needed, for rapid available access to fire suppression vehicles. This action will be reassessed during the monitoring and update phase of the 2018 MJLHMP.	State Mission and/or Grant funding	Yes combined into one
Wildland Fire	Continue Fire Road maintenance of culverts and road prisms in open space areas on SRA land to allow for adequate drainage.	CAL FIRE Unit Forester	Ongoing for the current plan (yrs. 2018-2023). Continuously preserve and improve culverts and road prisms, if needed, for sufficient drainage. This action will be reassessed during the monitoring and update phase of the 2018 MJLHMP.	State Mission and/or Grant funding	Yes combined into one for 2023 MJLHMP
Electrical Failure	Coordinated with Southern California Edison to be included in their power outage notifications	EMD	Ongoing for the current plan (yrs. 2018-2023). EMD joined SoCal Edison's recipient list as of Dec. 2016 to continuously be informed of any emergency notifications to help prevent electrical failure impacts. This action will be reassessed during the monitoring and update phase of the 2018 MJLHMP.	County General Fund	Yes
Emerging / Re-emerging Infectious Diseases	Drafted a Region VI Highly Contagious Disease Transportation Plan	EMD	Completed on 12/08/2016.	HPP Grant Ebola Grant	No

Emerging / Re-emerging Infectious Diseases	Facilitated a Region VI Highly Contagious Disease Transportation Tabletop Exercise	EMD	Completed on 09/29/2016 The situation manual for this was completed on 11/14/2016	HPP Grant Ebola Grant	No
Emerging / Re-emerging Infectious Diseases	Drafted a Riverside County Viral Hemorrhagic Fever Preparedness and Response Plan (VHF Plan)	EMD & RUHS-PH	Completed on 11/2016	HPP Grant Ebola Grant	No
Cyber Attack	**Enterprise Intrusion Prevention System (IPS)** Protects the county network from Internet-based threats and attacks (~140,000 attacks/day on average)	Riverside County Technology Information (RCIT)	Ongoing for the current plan (yrs. 2018-2023). Continue to update/ maintain IPS network to protect the county from cyber-attacks or threats. This action will be reassessed during the update phase of the 2018 MJLHMP.	County General Fund	Yes
Cyber Attack	**Enterprise Breach Detection System** Inspects all internal/lateral county network traffic for indicators of compromise (IOC) enabling ISO to detect, respond to, contain, prevent cyber-attacks, network reconnaissance, malware outbreaks, data exfiltration, and C2 (command & control) and botnet activities	RCIT	Ongoing for the current plan (yrs. 2018-2023). Continuously inspect the county network to detect forms of threats or attacks. This action will be reassessed during the monitoring and update phase of the 2018 MJLHMP.	County General Fund	Yes
Cyber Attack	**Albert Sensor** Monitors/reports to the Center for Internet Security (CIS) Multi-State Information Sharing and Analysis Center (MS-ISAC) all Domain Name System (DNS) and NetFlow traffic for correlation with the Department of Homeland Security's threat intelligence database for real-time alerting of malicious network connections to blacklisted IP address on the Internet	RCIT	Ongoing for the current plan (yrs. 2018-2023). Continuously maintain the Albert Sensor in order keep having the association with the Department of Homeland Security's database on alerting network threats for the county. This action will be reassessed during the monitoring and update phase of the 2018 MJLHMP.	County General Fund	Yes

Cyber Attack	**Countywide Security Awareness Training** SANS Securing The human information security and privacy training modules deployed on county learning management system (LMS) Educates our workforce on how to be extra vigilant and things to look out for to avoid falling victim to a targeted attack	RCIT	Ongoing for the current plan (yrs. 2018-2023). Continuously provide training to the county's workforce on signs of cyber-attacks and prevent them from being a victim of these attacks. This action will be reassessed during the monitoring and update phase of the 2018 MJLHMP.	County General Fund	Yes
Cyber Attack	**Enterprise Security Information Event Management (SIEM)** Serves as the county's centralized security event log management repository and correlation engine	RCIT	Ongoing for the current plan (yrs. 2018-2023). Continue to maintain the SIEM to monitor and prevent security threats. This action will be reassessed during the update phase of the 2018 MJLHMP.	County General Fund	Yes
Cyber Attack	**Enterprise Internet Proxy (Web Filter)** Prevents county employees and malware from accessing malicious / compromised command & control (C2) websites and servers, in addition to non-county authorized websites based on category/content filtration policies/rules	RCIT	May 2017 – December 2018 Product (Blue Coat Proxy Advance Secure Gateway (ASG)) has been procured and is in the process of being deployed.	County General Fund	Yes
Cyber Attack	**Governance, Risk, & Compliance (GRC) Software Suite** Platform on which our security operations (active network monitoring, breach detection, incident response, business impact analysis, threat containment / eradication, alerting/reporting, process workflow automation, security audits, risk assessments / register, regulatory compliance checks) will be carried out	RCIT	Implementation estimated to begin in June 2017 – July 2018. Product (RSA Archer GRC) has been procured and is in the process of being deployed.	County General Fund	No Not longer viable

Cyber Attack	**Security Operations Center (SOC)** Planning phase completed. Construction estimated to begin in September 2017	RCIT	September 2017 – September 2018. The County's Cyber Security Operations Center (SOC) is under construction.	County General Fund	Yes
Cyber Attack	**Information Security Forum (ISF)** Convene on a quarterly basis with department information security officers/liaisons to discuss key security topics, risk trends, and other related matters, including: Formation of a Critical Security Incident Response Team (CSIRT) Conducting security incident/breach simulations and tabletop exercises	RCIT	October 2018 – ongoing This forum will be on-going for the life of the current plan (yrs. 2018-2023). Will continue to conduct constant security incident/breach simulations and tabletop exercises that can help prevent cyber-attacks in the future. This action will be reassessed during the monitoring and update phase of the 2018 MJLHMP. The ISO is in the process of identifying members to serve on the Critical Security Incident Response Team (CSIRT). Estimated timeline for formation and initial kickoff meeting is October 2018.	County General Fund	Yes
Terrorist Event	SWAT team trained to respond to terrorism events	Riverside County Sheriff (RSO)	Ongoing for the current plan (yrs. 2018-2023). Continuously provide training to reflect personnel attrition and train on new tactics. This action will be reassessed during the monitoring and update phase of the 2018 MJLHMP.	County General Fund	Yes
Terrorist Event	Hazard Device Team trained to respond to terrorism events	RSO	Ongoing for the current plan (yrs. 2018-2023). Continuously provide training to reflect personnel attrition and train on new tactics and trends. This action will be reassessed during the monitoring and update phase of the 2018 MJLHMP.	County General Fund	Yes

Terrorist Event	Sheriff Emergency Response Team trained to respond to terrorism events	RSO	Ongoing for the current plan (yrs. 2018-2023). Continuously provide training to reflect personnel attrition and train on new trends. This action will be reassessed during the monitoring and update phase of the 2018 MJLHMP.	County General Fund	Yes
Terrorist Event	Sheriff personnel are assigned to the Joint Terrorism Task Force	RSO	Ongoing for the current plan (yrs. 2018-2023). Continuously integrate new sheriff personnel to improve this group's structure and capabilities. This action will be reassessed during the monitoring and update phase of the 2018 MJLHMP.	County General Fund	Yes
Terrorist Event	Ben Clark Training Center provides terrorism related classes for Law Enforcement and First Responders.	RSO	Ongoing for the current plan (yrs. 2018-2023). Classes are funded each year through the State Homeland Security Program (SHSP) to continuously educate and train personnel on new skills and improve their abilities. This action will be reassessed during the monitoring and update phase of the 2018 MJLHMP.	County General Fund	Yes
Terrorist Event	Tactical response training	RSO & Riverside County Fire Department	Ongoing for the current plan (yrs. 2018-2023). Continuously train and improve on tactical response. This action will be reassessed during the monitoring and update phase of the 2018 MJLHMP.	County General Fund	Yes
Communications Failure	**County of Riverside Network (CORNET)** Redundant Internet connections Backbone links are configured with a mesh topology to provide full redundancy	RCIT	Ongoing for the current plan (yrs. 2018-2023). Continuously configure links to prevent the termination of internet connections. This action will be reassessed during the monitoring and update phase of the 2018 MJLHMP.	County General Fund	Yes

Communications Failure	**Enterprise Voice Network (VoIP)** Centralized SIP trunking for ingress/egress PSTN access via 8 geographically separated locations Carrier failover protection for inbound voice traffic Enterprise call processing for VoIP Endpoints are logically and physically separated into 3 datacenters ensuring a High-Availability solution Remote site routers configured for SRST; in times of WAN outages, local IP Phones will re-register to local equipment, providing inter-site calling and access to the PSAP via carrier provided analog circuits	RCIT	Ongoing for the life of the current plan (yrs. 2018-2023). Continuously provide accessibility to phone carrier connection and call processing. This action will be reassessed during the monitoring and update phase of the 2018 MJLHMP.	County General Fund	Yes
Communications Failure	**Enterprise Best Practices** Internal escalation contact list for all essential personal readily available 24x7 On-Call staffing availability for both Voice and Data Networks Vendor support available at 24x7x4 for all critical Network and Voice equipment Regular professional staff training on emerging technologies Frequent equipment configuration backups to SAN Critical Enterprise level equipment is located at facilities with full battery and generator backup power	RCIT	Ongoing for the current plan (yrs. 2018-2023). Continue to update contact list when staff support is needed in case of emergencies. Continue to train staff on technologies that arise and equip facilities with power backup supplies. This action will be reassessed during the monitoring and update phase of the 2018 MJLHMP.	County General Fund	Yes

Communications Failure	**Enterprise Emergency Notification System** InformaCast Advanced on-premise notification solution for immediate reach to the County's 20,000+ VoIP endpoints InformaCast Mobile cloud-based notification solution to extend the County's reach off-network to mobile devices such as cellular phones and tablets	RCIT	On Premise solution has been rolled out to all County VoIP endpoints. Mobile Solution was rolled out to EMD. Mobile solution is ready to be rolled out to other departments as requested. Ongoing for the current plan (yrs. 2018-2023). Continue to have a notification system that connects with off-network devices in case of communication failure, including Wi-Fi. This action will be reassessed during the update phase of the 2018 MJLHMP.	County General Fund Department Funds; departments who wish to use this service will be billed back to the departments based on how many users	Yes
Communications Failure	**Network Connectivity** Use of Cellular based redundant WAN links for critical county locations. Introduction of MPLS technologies to provide alternate network paths for County locations	RCIT	Several locations have purchased a Cellular based redundant WAN link. Solution can be purchased by other departments. Installation can take up to 6 weeks to install, based on availability. Ongoing for the current plan (yrs. 2018-2023). Continue to provide alternate network paths for County locations during a communication failure. This action will be reassessed during the update phase of the 2018 MJLHMP.	County General Fund Department Funds; billable by the cellular carrier to requesting departments	Yes
Flood	**University Wash Channel, Stage 3 Project No. 221-1-8-00120-03-12** This project will increase public safety/improve local economics by retrofitting an older, built-out commercial/ industrial area with drainage infrastructure to alleviate flood damage to existing businesses.	Riverside County Flood Control and Water Conservation District (RCFCWCD)	Notice To Proceed 2/21/17 Completed 11/14/17	Riverside County Flood Control funds Cost: $3,044,500	No

	The project will address street and intersection flooding				
Flood	**Monroe MDP – Monroe Channel Project No. 1-8-00071 Stage 4** Replacement of City's existing open channel with underground reinforced concrete box with 10-year storm capacity at request of the City of Riverside. Project limits are from California Avenue upstream to Magnolia Avenue	RCFCWCD	Expected to be advertise in 4th Quarter 2016 Notice to Proceed 8/30/17 Completed 5/01/18	Riverside County Flood Control funds Cost: $2,489,067	No
Flood	**Jurupa – Pyrite MDP Line A-2 Project No. 1-8-00234 Stage 1** Master planned lateral stormdrain to Jurupa Channel. Project is east-west drain crossing Agate Street about 1,000 feet south of Jurupa Road. Outlet point at Jurupa Channel is unimproved and likely to remain so.	RCFCWCD	30 percent Plans & R/W Acquisition as of 1/10/17 Projected Start: 9/2018 Projected End: during the life of the plan (2018-2023)	Riverside County Flood Control funds Cost: $338,332	No
Flood	**University MDP Line 3 Project No. 1-8-09020 Stage 1** approximately 2,900 ft of 30" RCP east in Blaine St. then northeast to Blaine St. Retention Basin, located 600 ft. north of Blaine St. between Valencia Hill Dr. and Mt. Vernon Ave. Budgeted for scoping study and evaluation of FEMA map floodplain limits only	RCFCWCD	Pending approval Projected Start: 12/2020 Projected End: during the timeframe of the MJLHMP (2018-2023)	Riverside County Flood Control funds Cost: $2,926,028	No

Flood	**Santa Ana River Stabilization** **Project No. 1-8-00010 Stg. 90** USACE is expected to initiate restoration of the federally constructed reach of the Santa Ana River Levee system downstream of San Bernardino County line to Tequesquite. Work will likely include repair of groins and toe protection	RCFCWCD	Pending approval 5-year CIP (Capital Improvement Plan) Projected start and end: during the timeframe of the MJLHMP (2018-2023)	Riverside County Flood Control funds Cost: $10,685,000	No
Flood	**Sycamore Dam – Outlet Structure Modifications** **Project No. 1-8-00042** This project will upgrade the level of safety and serviceability. Initial project components include the repair/reinforcement of the existing outlet channel; construction of a new debris rack structure; erosion control on the embankment of the dam; construction of a safer access road into the facility; design for a safer routing of flood waters from the emergency spillway to Central Avenue; and the installation of a control section to measure outflow from the outlet pipe of the dam. Completion of this project is planned to follow the Woodcrest Dam Outlet Modification project.	RCFCWCD	Pending until Woodcrest Dam is complete 5-year CIP (Capital Improvement Plan) Projected start and end during the timeframe of the MJLHMP (2018-2023)	Riverside County Flood Control funds Cost: $1,854,991	No
Flood	**Box Springs Dam – Outlet Modification** **Project No. 1-8-00041** Reconstruct outlet structure to prevent blockage from sediment accumulation	RCFCWCD	Pending until Woodcrest Dam is complete 5-year CIP (Capital Improvement Plan) Projected start /end: during the MJLHMP timeframe (2018-2023)	Riverside County Flood Control funds Cost: $981,842	No

Flood	**Alessandro Dam Outlet Modification** **Project No. 1-8-00043** Reconstruct outlet structure to prevent blockage from sediment accumulation	RCFCWCD	Pending until Woodcrest Dam is complete 5-year CIP (Capital Improvement Plan) Projected start and end during timeframe of MJLHMP (2018-2023)	Riverside County Flood Control funds Cost: $907,682	No
Flood	**Prenda Dam Outlet Modification** **Project No. 1-8-00044** Reconstruct outlet structure to prevent blockage from sediment accumulation	RCFCWCD	Pending until Woodcrest Dam is complete. 5-year CIP (Capital Improvement Plan) Projected start and end during timeframe of MJLHMP (2018-2023)	Riverside County Flood Control funds Cost: $1,238,312	No
Flood	**Woodcrest Dam Outlet Modification** **Project No. 1-8-00045** This project will upgrade the level of safety/serviceability. The approved Project Charter identifies the primary scope of work for the project as follows: design/construction of a new inlet structure to reduce potential for clogging of the outlet works; rehabilitation of existing outlet gate assembly and control stem; implementation of automated gate control system; rehabilitation of the outlet pipe; restoration of outlet channel; and install of surficial erosion controls on the surface of the dam embankment. This project will serve as an example for performing similar upgrades to the remaining Riverside Reservoirs	RCFCWCD	Development of design plans and specifications on hold until latest Geotechnical investigation is complete Projected Start: March 2019 Projected start and end during timeframe of MJLHMP (2018-2023)	Riverside County Flood Control funds Cost: $2,216,529	No

Flood	**Corona MDP 5 Stage 1 Project No. 2-8-00280** This project includes the construction of an underground storm drain beginning in Sherman Ave. south of Railroad St. and extending down Railroad Street westerly to Smith St. The City is willing to use District funding for the design/construction of this project	RCFCWCD	Pending approval 5-year CIP (Capital Improvement Plan) Projected start and end during timeframe of MJLHMP (2018-2023)	Riverside County Flood Control funds Cost: $1,397,201	No
Flood	**Corona MDP Line 52 Stage 1 Project No. 2-8-00350** An underground storm drain extending north from Third St. along E. Grand Blvd. then under the 91 Freeway to Temescal Creek Channel	City Of Corona	Notice to Proceed 7/29/17 Expected Completion: Summer 2018	Riverside County Flood Control funds City of Corona Funds Cost: $4,522,000	No
Flood	**Coldwater Canyon Structural Improvements Project 2-8-00505** Proposed conceptual improvements include 1) reducing flood risk and nuisance to traveling public on Temescal Canyon Rd. at the intersection of Glen Ivy Rd.; and 2) an armored berm along the east bank of Coldwater Wash down stream of the intersection of Temescal Canyon Rd. and Glen Ivy Rd. The armored berm would prevent the migration of the active Coldwater Wash Channel, thereby protecting the west side of the Mountain Cove Development. Conceptual improvements are pending friendly acquisition of the underlying parcels needed for the project	RCFCWCD	Pending approval 5-year CIP (Capital Improvement Plan) Projected start and end during timeframe of MJLHMP (2018-2023)	Riverside County Flood Control funds Cost: $6,005,806	No

Flood	**Coldwater Canyon Floodplain Acquisition Project No. 2-8-00505** Funded portion of project includes a hydrologic and geomorphologic assessment of Coldwater Canyon Wash from Glen Ivy Road to Temescal Wash. Study will evaluate the stability of Coldwater Canyon Wash and recommend potential minimalist interventions to protect Squaw Mountain Bridge and prevent erosion of Painted Hills development canyon slopes along Coldwater Canyon Wash. Balance of funds would support potential interventions recommended by the report including floodplain buyout	RCFCWCD	Pending approval 5-year CIP (Capital Improvement Plan) Projected start and end during timeframe of MJLHMP (2018-2023)	Riverside County Flood Control funds Cost: included in the $6,005,806 amount for Coldwater Canyon Structural Improvement project listed above	No
Flood	**Southeast Compton Wash at Corona Sanitary landfill Project No. 2-8-09054** Riverside County Waste Mgmt District has requested assistance in solving ongoing flooding/erosion issues along southeast side of the landfill	Riverside County Waste Management District**	Pending approval 5-year CIP (Capital Improvement Plan) Projected start and end during timeframe of MJLHMP (2018-2023)	Riverside County Flood Control funds Cost: $500,000	No
Flood	**Lake Mathews Estates Water Quality Pond Project 2-8-09058** Proposed in the "Drainage Water Quality Management Plan for the Lake Matthews Watershed", this roughly 10-acre project shall be located on the south side of Cajalco Rd. about ¾-mile west of WoodRd. The project will capture first flush runoff from Cajalco Creek and carry it to an off-channel pond to be treated and/or infiltrated	RCFCWCD	Pending approval 5-year CIP (Capital Improvement Plan) Projected start and end during timeframe of MJLHMP (2018-2023)	Riverside County Flood Control funds Cost: $2,794,983	No

Flood	**LITTLE LAKE MDP LINE B, STG 1 STETSON AVE CHANNEL, STG 7 aka HEMET MDP LINE D** **Project #s 224-4-8-00265-01-12 224-4-8-00211-07-12** RCFCWCD constructed a segment of the District's Little Lake MOP Line B. The infra-structure will diminish floods and damage to private property /businesses, improve safety of traveling public during storm events. The new drain will reduce flood related repair /maintenance costs for streets in the City of Hemet. Little Lake MDP Line B Stg 1 is located in the City of Hemet and extends into the City of San Jacinto/unincorporated Riverside County at approx. 300 feet north of Berkley Ave and terminating at 200 feet south of Florida	RCFCWCD	Stage 1 Completed 06/21/16 Stage 2 Pending approval Projected start and end during timeframe of MJLHMP (2018-2023)	Riverside County Flood Control funds Cost: $6,398,777	No
Flood	**Temescal Wash Floodplain Project No. 2-8-00052** Acquisition of floodplain area for flood protection, water conservation and habitat mitigation banking	RCFCWCD	Pending approval 5-year CIP (Capital Improvement Plan) Projected start and end during timeframe of MJLHMP (2018-2023)	Riverside County Flood Control funds Cost: $23,534,000	No
Flood	**Ortega Channel Retrofit Project No. 3-8-00070** Project will replace a portion of the clog-prone storm drain with a more accessible/ maintainable open channel	RCFCWCD	Pending approval 5-year CIP (Capital Improvement Plan) Projected start and end during timeframe of MJLHMP (2018-2023)	Riverside County Flood Control funds Cost: $1,628,761	No
Flood	**Little Lake MDP Line B Stage 2 Project No. 4-8-00265** An underground storm drain from just south of Florida Ave., southerly in Meridian Street to Whittier Ave.	RCFCWCD	Pending approval 5-year CIP (Capital Improvement Plan) Projected start and end during timeframe of MJLHMP (2018-2023)	Riverside County Flood Control funds Cost: $6,804,257	No

Flood	**San Jacinto River Stage 3 Project No. 4-8-00020** "Stage 3" covers the nearly 10-mile river reach beginning at the entrance to Railroad Canyon and ending upstream at the Ramona Expressway crossing near the Bernasconi Hills. This environmentally and fiscally challenged project has seen several evolutions and has been essentially dormant for a decade. Funding shown is for intensive planning / engineering study of options for managing future development. Goal is to develop a viable project for the San Jacinto River from Ramona Expressway to Railroad Canyon considering flood management, transportation, environmental and other opportunities and constraints	RCFCWCD	Pending approval Projected Start: 11/2019 Projected start and end during timeframe of MJLHMP (2018-2023)	Riverside County Flood Control funds ADP (Area Drainage Plan) Funds Cost: $70,000,000	No
Flood	**Beaumont MDP Line 16 Stage 1 Project No. 5-8-00201** Project would build MDP Line 16 in Grand Avenue from Beaumont Cherry Valley Water District (BCVWD) infiltration ponds easterly to Bellflower Avenue as an element of a cooperative project with the BCVWD to provide both flood control and storm water capture to recharge groundwater	RCFCWCD	Pending approval Projected Start: 12/2020 Projected start and end during timeframe of MJLHMP (2018-2023)	Riverside County Flood Control funds Cost: $5,353,074	No
Flood	**Murrieta Creek Channel (Phase II & III) Project No. 7-8-00021** Murrieta Creek Flood Control Project from Old Town Temecula to Elm Street in Murrieta	RCFCWCD /United States Army Corps of Engineers*	Pending approval 5-year CIP (Capital Improvement Plan) Projected start and end during timeframe of MJLHMP (2018-2023)	Riverside County Flood Control funds Cost: $82,000,000	No

Flood	**Whitewater River Levee Restoration Project No. 6-8-00250** Restoration work to increase freeboard and bring levee adjacent to Cimarron Golf Resort into compliance with FEMA certification guidelines	RCFCWCD	Pending – Full scope of restoration work not yet established but funding figure shown is based on preliminary engineer's estimate 5-year CIP (Capital Improvement Plan) Projected start and end during timeframe of MJLHMP (2018-2023)	Riverside County Flood Control funds Cost:1,260,000	No
Flood	**Palm Canyon Wash – Cherley Creek Levee Restoration Stage 90 Project No. 6-8-00040** Major construction to bring levee serving small tributary upstream of South Palm Canyon Wash into compliance with FEMA certification guidelines. Project will be combination of RSP and soil-cement lined channel and levee	RCFCWCD	Expected Advertise Date: 2nd Quarter 2018 Projected Start: 08/2019 Projected start and end during timeframe of MJLHMP (2018-2023)	Riverside County Flood Control funds Cost: $6,187,021	No
Flood	**Banning MDP Line D-2 Stage 1 Project No. 5-8-00169** This project is over one mile of underground storm drain that connects to the existing Ramsey Street Storm Drain at the intersection of Hargrave Street and Ramsey Street. It includes Line D-2, Stage 1 which will continue northerly along Hargrave Street for approximately 5,250 feet before terminating at Indian School Lane. Line D-2A, Stage 1 will tie into Line D-2 at the intersection of Hargrave Street and Theodore Street. Line D-2A will continue westerly along Theodore Street for approximately 600 feet before terminating at Florida Street.	RCFCWCD /City of Banning	Notice to Proceed: 5/15/17 Completed: 2/27/18	Riverside County Flood Control funds	No

Civil Disorder	Trained and equipped Mobile Field Force Teams throughout the county	RSO	Ongoing for the current plan (yrs. 2018-2023). Continuously provide training to reflect personnel attrition; Less-lethal equipment acquired. This action will be reassessed during the monitoring and update phase of the 2018 MJLHMP.	County General Fund	No

4.3.2 Prioritization Process

Once the mitigation actions were identified, the Steering Committee was provided with FEMA's recommended STAPLEE prioritization criteria for deciding ranking of mitigation actions. STAPLEE stands for the following:

• Social: Does the action treat people fairly? (e.g., different groups, different generations) Does it consider social equity, disadvantaged communities, or vulnerable populations?

• Technical: Will it work? (Is the action technically feasible? Does it solve the problem?)

• Administrative: Is there capacity to implement and manage the project? (adequate staffing, funding, and other capabilities to implement the project?)

• Political: Who are the stakeholders? Did they get to participate? Will there be adequate political and public support for the project?

• Legal: Does the jurisdiction have the legal authority to implement the action? Is it legal? Are the reliability implications?

• Economic: Is the action cost-beneficial? Is there funding available? Will the action contribute to the local economy?

• Environmental: Does the action comply with environmental regulations? Will there be negative environmental consequences from the action?

In accordance with the Disaster Mitigation Act requirements, an emphasis was placed on the importance of a benefit-cost analysis in determining action priority. Other criteria used to assist in evaluating the benefit-cost of a mitigation action included:

•Does the action address the hazards or areas with the highest risk?

•Does the action protect lives?

•Does the action protect infrastructure, community assets or critical facilities?

•Does the action meet multiple objectives (Multiple Objective Management)?

•What will the action cost?

•What is the timing of available funding?

The mitigation categories, multi-hazard actions, and criteria are included in Appendix C.

The 2023 MJLHMP Steering Committee reviewed and discussed the STAPLEE criteria to determine which 2023 mitigation actions scored the highest after comparing them to the STAPLEE criteria. Actions identified in the 2018 MJLHMP that were carried over into the updated 2023 MJLHMP were prioritized and ranked with the new mitigation actions. STAPLEE scores 40 and greater were prioritized as high, scores between 30 and 39 were periodized as medium and scores below 30 were prioritized as low based on the established goals in Section 8.

Table 12: 2023 MJLHMP Mitigation Actions

2023 MJLHMP Mitigation Actions Table

Type of Hazard	Mitigation Actions	Lead Dept/ Jurisdiction	Status / Timeframes	From 2018 MJLHMP	Estimate Cost and Funding	Priority
Multiple	Continue using Riverside County General Plan, its Safety Element, and the MJLHMP to implement goals, objectives, and mitigation actions	County departments	Ongoing 2023-2028. The Safety Element in General Plan was updated on 9/28/21. This action will be reassessed during MJLHMP maintenance	Yes	Cost is negligible County General Fund	High
Multiple	CERT Training and retention	Emergency Management Department (EMD)	Ongoing 2023-2028. CERT volunteers are directed to opportunities such as RACES, General Volunteers, and Medical Reserve Corps	Yes	$50,000 /yr. SHSP	High
Earthquake	Conduct annual Great Shakeout earthquake drills and collaborate with city emergency managers to increase community earthquake preparedness	EMD	Ongoing 2023-2028	Yes	Cost is negligible BRIC HMGP	Low
Earthquake	Update the 2010 Southern California Catastrophic Earthquake Response Plan	EMD & Cities within Riverside County	2023-2025. Riverside County will continue to collaborate with Cal OES/ FEMA to update this plan. This action will be reassessed during maintenance of the MJLHMP	Yes	$100,000 BRIC HMGP County General Fund	High

Earthquake	Seismic compliance for acute care hospitals	EMD & Riverside County Hospitals	2023-2028. Riverside County will continue to collaborate with California Department of Health Care Access and Information and hospital representatives to seek hospital compliance with seismic requirements.	Yes	50 million BRIC HMGP HPP	High
Wildland Fire & Electrical Failure	Coordinate notifications of power outages with Southern California Edison	EMD	2023-2028, This action will be reassessed during maintenance of the 2023 MJLHMP	Yes	$50,000 County General Fund	High
Multiple	Outdoor Alert & Warning Project for the Mt San Jacinto Region	EMD	2023-2024. Ongoing once project is completed. Completion timeframe is based on the availability of funding	No	10 million HMGP Evac Grant	High
Multiple	Outdoor Alert & Warning Project for the Santa Ana River bottom	EMD	2023-2028, Project is in the concept phase. A feasibility study is to be conducted during the MJLHMP 2023-2028 timeframe	No	15 million BRIC HMGP	Medium
Earthquake	Mitigate potential seismic hazards through adoption and strict enforcement of current building codes for new and existing building	TLMA / Facilities Management	2023-2028. Ongoing. Codes will be revised and updated to be consistent with emergency measures that can help prevent earthquake impacts in county buildings. This action will be reassessed during maintenance of the 2023 MJLHMP. County General Fund	Yes	$50,000 County General Fund BRIC HMGP	Medium
Pandemic Emerging / Re-emerging Infectious Diseases	Immunization technique trainings	Riverside University Health System-Public Health	2023-2028. Trainings for new techniques, strategies, and ensuring all staff are proficient	Yes	$50,000 PHEP HPP	High

Wildland Fire	Create wildfire protection zones that reduce the risks to citizens and firefighters from fire dangers	RCFD & CAL FIRE	*2023-2028.* Continuously update and develop wildfire protection zones to decrease wildfire risks in the community. This action will be reassessed during maintenance of the 2023 MJLHMP	Yes	>$100K State Mission BRIC HMGP	High
Wildland Fire	Strengthen defensible space inspections in fire prone areas	RCFD & CAL FIRE	2023-2028. Continue inspections in locations susceptible to fires. This action will be reassessed during maintenance of the 2023 MJLHMP. State and County General Funds & Structural Fire Taxes	Yes	>$100K State & County General Funds BRIC HMGP	High
Wildland Fire	Continue maintenance of existing fire roads throughout the county to provide fire department access	RCFD & CAL FIRE	2023-2028. This action will be reassessed during maintenance of the 2023 MJLHMP	Yes Combined duplicated projects	>$100K State Mission Funds BRIC HMGP	Medium
Wildland Fire	Fuel reduction projects throughout the county to reduce fire potential	RCFD & CAL FIRE	*2023-2028.* This action will be reassessed during maintenance of the 2023 MJLHMP	Yes	>$100K State Mission Funds BRIC HMGP	High
Wildland Fire	Develop and enforce construction and design standards that ensure the development incorporates fire prevention features	RCFD & CAL FIRE	*2023-2028.* This action will be reassessed during maintenance of the 2023 MJLHMP. Developer fees	Yes	>50K Developer Fees	Medium
Wildland Fire	Conduct and implement long range fire safe planning through code adoption/policies consistent with the General Plan Safety Element	RCFD & CAL FIRE	2023-2028. This action will be reassessed during maintenance of the 2023 MJLHMP. County General Fund and Fire Marshal Fees	Yes	>50K County General Fire Marshal fees Fund BRIC HMGP	Medium
Wildland Fire	Continue wildland fire suppression/preparedness to maintain a state of	RCFD & CAL FIRE	2023-2028. Continuously provide skills training to the community to prepare	Yes	>$100K County General	Medium

	readiness throughout the year		for disasters. This action to be reassessed during maintenance of the 2023 MJLHMP		Fund BRIC HMGP	
Wildland Fire	Rapid intervention, identification, and mitigation of Goldspot Oak Bore Beetle trees (GSOB) at various infestation levels on State Responsibility Area (SRA) lands throughout the county. Herbicide or tree removal if necessary	RCFD & CAL FIRE	2023-2028. Continuously monitor infestation levels of GSOB trees to continue removing infested trees if necessary. This action will be reassessed during maintenance of the 2023 MJLHMP	Yes	>$100K State Mission Funds BRIC HMGP	Medium
Wildland Fire	Rapid intervention, identification and mitigation of Bark Beetle infestation, epidemic during times of drought. Removal of symptomatic trees or the use of pesticides	RCFD & CAL FIRE	2023-2028. This action will be reassessed during maintenance of the 2023 MJLHMP	Yes	>$100K State Mission Funds BRIC HMGP	Medium
Cyber Attack	**Enterprise Intrusion Prevention System (IPS)** Protects the county network from Internet-based threats/attacks (~140,000 day on avg)	RCIT	2023-2028. This action will be reassessed during maintenance of the 2023 MJLHMP	Yes	>$100K County General Fund	Medium
Cyber Attack	**Enterprise Breach Detection System** Inspects all internal/ lateral county network traffic for indicators of compromise (IOCs) enabling the ISO to rapidly detect, respond to, contain, and prevent cyberattacks, malware outbreaks, network reconnaissance, data exfiltration, C2 (command & control) and botnet activities	RCIT	2023-2028. This action will be reassessed during maintenance of the 2023 MJLHMP	Yes	>$100K County General Fund	Medium

Cyber Attack	**Albert Sensor** Monitors and reports to the Center for Internet Security (CIS) Multi-State Information Sharing and Analysis Center (MS-ISAC) all Domain Name System (DNS) and NetFlow traffic for correlation with the Department of Homeland Security's threat intelligence database for real-time alerting of malicious network connections to blacklisted IP address on the Internet	RCIT	2023-2028. This action will be reassessed during maintenance of the 2023 MJLHMP	Yes	>$100K County General Fund	Medium
Cyber Attack	**Countywide Security Awareness Training** SANS Securing The human information security and privacy training modules deployed on county learning management system (LMS) Educates our workforce on how to be extra vigilant and things to look out for to avoid falling victim to a targeted attack	RCIT	2023-2028. This action will be reassessed during maintenance of the 2023 MJLHMP	Yes	>$100K County General Fund	High
Cyber Attack	**Enterprise Security Information Event Management (SIEM)** Serves as the county's centralized security event log management repository and correlation engine	RCIT	2023-2028. This action will be reassessed during maintenance of the 2023 MJLHMP	Yes	>$100K County General Fund	High

Cyber Attack	**Enterprise Internet Proxy (Web Filter)** Prevents county employees and malware from accessing compromised/malicious websites and C2 (command & control) servers, in addition to non-county authorized websites based on category/content filtration policies/rules	RCIT	2023-2028. This action will be reassessed during maintenance of the 2023 MJLHMP	Yes	>$100K County General Fund	High
Cyber Attack	**Governance, Risk, & Compliance (GRC) Software Suite** Platform on which security operations (active network monitoring, breach detection, incident response, business impact analysis, threat containment, eradication, alerting/reporting, process workflow automation, security audits, risk assessments/register, regulatory compliance checks) will be carried out. Abandoned Project in 2018 no longer viable	RCIT	N/A	No longer viable		N/A
Cyber Attack	**Security Operations Center (SOC)** Completed and ongoing	RCIT	2023-2028. This action will be reassessed during maintenance of the 2023 MJLHMP	Yes	>$100K County General Fund	High

Cyber Attack	**Information Security Forum (ISF)** Convene on a quarterly basis with department information security officers/ liaisons to discuss key security topics, risk trends, and other related matters, including formation of a Critical Security Incident Response Team (CSIRT), and conducting security incident/breach simulations and tabletop exercises	RCIT	2023-2028. – Ongoing This action will be reassessed during maintenance of the 2023 MJLHMP	Yes	<25K County General Fund	Medium
Cyber Attack	**Tabletop Crisis Simulator** Will allow the county to perform tabletop exercises with realistic scenarios that are relevant to our industry and regularly updated. Exercises will allow staff to test incident response plans and record results to track progress over time	RCIT	2023-2028. This action will be reassessed during maintenance of the 2023 MJLHMP	Yes	>$100K County General Fund	High
Cyber Attack	**Breach Attack and Simulation** A platform that simulates automated attack scenarios and tests the efficacy of our current Cyber Security Tools and how we respond to events	RCIT	2023-2028. This action will be reassessed during maintenance of the 2023 MJLHMP	Yes	>$100K County General Fund	High
Cyber Attack	**KnowBe4 Phishing Simulation** Allows county employees to receive monthly phishing tests as part of our Security Awareness Training	RCIT	2023-2028. This action will be reassessed during maintenance of the 2023 MJLHMP	Yes	>$100K County General Fund	Medium

Com Failure	**Enterprise Voice Network (VoIP) Centralized SIP trunks** Centralized SIP trunking for ingress/ egress PSTN access via 3 geographically separated locations. Expected completion for circuit migration Feb 2023. Carrier failover protection for inbound voice traffic expected completion end of Q2 2023. Enterprise call processing for VoIP. Endpoints are logically and physically separated into 3 datacenters ensuring a High- Availability solution. Remote site routers configured for SRST; in times of WAN outages, local IP Phones will re-register to local equipment, providing inter-site calling and access to the PSAP via carrier provided analog circuits	RCIT	Expected completion end of 2qrt 2023	Yes	>$100K County General Fund	High
Com Failure	**Enterprise Availability Best Practices** Internal escalation contact list for all essential personal readily available 24-7. On-Call staffing availability for both Voice and Data Networks. Vendor support is available 24-7 for all critical	RCIT	2023-2028. This action will be reassessed during maintenance of the 2023 MJLHMP. County General Fund	Yes	>$100K County General Fund	Low

	Network and Voice equipment. Ongoing staff training on emerging technologies. Frequent equipment configuration backups to a storage area network (SAN). Full battery and generator backup power for Critical Enterprise level equipment					
Com Failure	**InformaCast Advanced on-premises notification** Enterprise Emergency Notification System solution for immediate reach to the County's 20,000+ VoIP endpoints. InformaCast Mobile cloud-based notification solution to extend the County's reach off-network to mobile devices such as cellular phones and tablets. Being used at the department level for in building paging solutions at some locations. This solution has the potential to perform advanced notification to phones, laptops, cellphones but needs further development. No plans to be used as a widespread mitigation action throughout the County	RCIT	2023-2024.This action will be reassessed during maintenance of the 2023 MJLHMP	Yes	>$100K County General Fund & Dept funds	Low

Com Failure	**Network Connectivity** Use of Cellular based redundant WAN links for critical county locations. Introduction of MPLS technologies starting Q2 2022 that enables higher bandwidth by pushing multiple signals through our fiber optic lines. In additional the technology can create segregated networks between County departments	RCIT	MPLS technology estimated completion Q4 2025. Purchased by departments requesting this service. This action will be reassessed during maintenance of the 2023 MJLHMP	Yes	>$100K County General Fund Dept funds	High
Com Failure	**County of Riverside Network (CORNET) Redundant Internet connections** CORNET's network architecture is built as a Hub and Spoke design. Included in this design are six Hub locations interconnected via a Mesh Design with multiple 10GPS Backbone links. This provides redundancy at all hub sites	RCIT	2023-2028. Ongoing. This action will be reassessed during maintenance of the 2023 MJLHMP. County General Fund	Yes	>$100K County General Fund	High
Terrorist Event	SWAT team trained to respond to terrorism events	Riverside County Sheriff (RSO)	2023-2028. This action will be reassessed during maintenance of the 2023 MJLHMP	Yes	>$100K County General Fund	High
Terrorist Event	Hazard Device Team trained to respond to terrorism events. Continuously provide training for personnel attrition and for new tactics and procedures	RSO	2023-2028. This action will be reassessed during maintenance of the 2023 MJLHMP	Yes	>$100K County General Fund	High

Terrorist Event	Sheriff Emergency Response Team trained to respond to terrorism events. Continuously provide training for personnel attrition and for new tactics and procedures	RSO	2023-2028. This action will be reassessed during maintenance of the 2023 MJLHMP	Yes	>$100K County General Fund	High
Terrorist Event	Sheriff personnel assigned to the Joint Terrorism Task Force are integrated to improve structure and capabilities	RSO	2023-2028. This action will be reassessed during maintenance of the 2023 MJLHMP	Yes	>$100K County General Fund	High
Terrorist Event	Ben Clark Training Center provides terrorism related classes for law enforcement and first responders.	RSO	2023-2028. This action will be reassessed during maintenance of the 2023 MJLHMP. County Classes are funded each year through the State Homeland Security Program (SHSP)	Yes	>$100K SHSP	High
Terrorist Event	Tactical response training	RSO & RCFD	2023-2028. This action will be reassessed during maintenance of the 2023 MJLHMP	Yes	>$100K County General Fund	High
Civil Disorder	Train and equip Mobile Field Force Teams throughout the county. Continuously provide training for personnel attrition, new tactics, and procedures and equipment	RSO	2023-2028. This action will be reassessed during maintenance of the 2023 MJLHMP	Yes	>$100K County General Fund	High
Flood	Implementation of Master Drainage Plans in Zone 1: Eastvale, Day Creek, San Sevaine Channel, Glen Avon, Jurupa-Pyrite, Paramount Estates, Rubidoux, Norco, Home Gardens, La Sierra, Monroe, Central Riverside, Box Springs, University,	Riverside County Flood Control and Water Conservation District (RCFCWCD)	2023-2028. This action will be reassessed during maintenance of the 2023 MJLHMP	No	> 1 million RCRCWCD funds FMA	High

	Sunnymead, Reche Canyon, Moreno, SW Riverside, Monroe System B					
Flood	Implementation of Master Drainage Plans in Zone 2: Eastvale, Day Creek, Norco, Home Gardens, SW Riverside, Lake Mathews DWQMP, Monroe System B, Mead Valley, Perris Valley	RCFCWCD	2023-2028. This action will be reassessed during maintenance of the 2023 MJLHMP	No	> 1 million RCRCWCD funds FMA	High
Flood	Implementation of Master Drainage Plans in Zone 3: West Elsinore, Lakeland Village, Sedco, Wildomar	RCFCWCD	2023-2028. This action will be reassessed during maintenance of the 2023 MJLHMP	No	> 1 million RCRCWCD funds FMA	High
Flood	Implementation of Master Drainage Plans in Zone 4: Moreno Valley West End, Moreno, Mead Valley, Perris Valley, San Jacinto River Basin, Lakeview-Nuevo, San Jacinto Valley, Little Lake, Romoland, Homeland, Green Acres, West Hemet, Hemet, Winchester, SW Hemet, Salt Creek, Murrieta Creek, Anza-Wilson	RCFCWCD	2023-2028. This action will be reassessed during maintenance of the 2023 MJLHMP	Yes	> 1 million RCRCWCD funds FMA	High
Flood	Implementation of Master Drainage Plans in Zone 5: Reche Canyon, Moreno, Beaumont, Banning	RCFCWCD	2023-2028. This action will be reassessed during maintenance of the 2023 MJLHMP	No	> 1 million RCRCWCD funds FMA	High

Flood	Implementation of Master Drainage Plans in Zone 6: Garnet Wash, East Wide, Canyon, Long Canyon, & Tributaries, Desert Hot Springs, Palm Springs	RCFCWCD	2023-2028. This action will be reassessed during maintenance of the 2023 MJLHMP	No	> 1 million RCRCWCD funds FMA	High
Flood	Implementation of Master Drainage Plans in Zone 7: Wildomar, Murrieta Creek, Anza-Wilson	RCFCWCD	2023-2028. This action will be reassessed during maintenance of the 2023 MJLHMP	Yes	Cost: $82,000,000 RCRCWCD funds FMA	High
Flood	Surveying efforts of all current and future facilities	RCFCWCD	2023-2028. This action will be reassessed during maintenance of the 2023 MJLHMP	No	>100K RCRCWCD funds FMA	High
Flood	Installation of cameras and data collection from videos around existing facilities	RCFCWCD	2023-2028. This action will be reassessed during maintenance of the 2023 MJLHMP	No	>100K RCRCWCD funds FMA	High
Flood	Installation of rain gauges and data collection throughout the county	RCFCWCD	2023-2028. This action will be reassessed during maintenance of the 2023 MJLHMP	No	>100K RCRCWCD funds FMA	High
Flood	Regular Maintenance for critical drainage infrastructure	RCFCWCD	2023-2028. This action will be reassessed during maintenance of the 2023 MJLHMP	No	>100K RCRCWCD funds FMA	High
Flood	Participation in CRS Program. Community outreach efforts	RCFCWCD	2023-2028. This action will be reassessed during maintenance of the 2023 MJLHMP	No	>100K RCRCWCD funds BRIC HMGP FMA	High
Flood	Installation of Dam Automation and Telemetry	RCFCWCD	2023-2028. This action will be reassessed during	No	>100K RCRCWCD funds FMA	High

			maintenance of the 2023 MJLHMP			
Flood	Ongoing studies to outline flood hazard areas outside of master Drainage Plan	RCFCWCD	2023-2028. This action will be reassessed during maintenance of the 2023 MJLHMP	No	>100K RCRCWCD funds FMA	High

Note: Please refer to individual annexes for a full listing of jurisdictional Mitigation Actions

Figure 17: Riverside County FY Capital Assets

Capital asset activity for the year ended June 30, 2021 was as follows (in thousands)

COUNTY OF RIVERSIDE
Notes to the Basic Financial Statements (Continued)
June 30, 2021

NOTE 8 – CAPITAL ASSETS

Capital asset activity for the year ended June 30, 2021 was as follows (In thousands):

	Restated Balance July 1, 2020	Additions	Deletions/ Adjustments	Transfers	Balance June 30, 2021
Governmental activities:					
Capital assets, not being depreciated:					
Land & easements	$ 597,367	$ 7,974	$ (322)	$ -	$ 605,019
Construction in progress	895,745	180,531	(2,866)	(48,747)	1,024,663
Total capital assets, not being depreciated	1,493,112	188,505	(3,188)	(48,747)	1,629,682
Capital assets, being depreciated:					
Infrastructure	3,811,982	58,736	(102)	26,653	3,897,269
Land improvements	110	-	-	-	110
Structures and improvements	1,892,830	1,133	(16,179)	5,063	1,882,847
Equipment	633,361	48,085	(42,940)	16,661	655,167
Total capital assets, being depreciated	6,338,283	107,954	(59,221)	48,377	6,435,393
Less accumulated depreciation for:					
Infrastructure	(1,811,517)	(121,789)	82	-	(1,933,224)
Land improvements	(32)	(1)	-	-	(33)
Structures and improvements	(627,300)	(42,754)	4,293	-	(665,761)
Equipment	(395,526)	(46,567)	39,270	370	(402,453)
Total accumulated depreciation	(2,834,375)	(211,111)	43,645	370	(3,001,471)
Total capital assets, being depreciated, net	3,503,908	(103,157)	(15,576)	48,747	3,433,922
Governmental activities capital assets, net	$ 4,997,020	$ 85,348	$ (18,764)	$ -	$ 5,063,604

Source: (Riverside County Comprehensive Annual Financial Report 2021)

4.4 Critical Facilities and Infrastructures

Critical facilities are facilities that pose unacceptable risks if severely damaged or become non-operational. In Riverside County, critical facilities include schools, hospitals, fire stations, police stations, jails, emergency operation centers, communication centers, dams, and industrial sites that use or store explosives, toxic materials. It is essential that critical facilities have no structural weaknesses that can lead to collapse.

Usefulness of critical facilities is limited if they become structurally unsafe or utilities are disrupted. Seismic hazard mitigation for critical structures is complex due to the diverse use of these facilities. Earthquake ground motion could affect a variety of critical structures such as the control tower in an airport or buildings with computers and telephone circuits used for communications networks. Strong ground motion can also result in damage to freeway interchanges and bridges essential for the transportation of goods and services. Buried pipelines are generally not damaged by ground motion but can be severely disrupted in areas of surface rupture, liquefaction, or landslides.

Table 13: Critical Facilities

FACILITY TYPE	UNICORPORATED	INCORPORATED CITIES	TOTAL FACILITIES	REPLACEMENT VALUE
Airports	4	12	16	$4,718,671
Correctional Facilities (Jails/Prisons)	4	4	8	$316,591,306
Educational Institutions	-	-	641	$1,688,809,964
Fire Stations	37	94	135	$539,834,410
Law Enforcement Facilities	10	24	28	$647,199,000
Medical Facilities	1	17	18	$331,174,000

Animal Shelters**	3	7	10
CHP Stations**	1	7	8
Communication Infrastructure**	Facilities: 1 Server sites: 8	facilities: 60 Server sites: 892	facilities: 61 Server sites: 900
Dams/Debris Basins**	12	59	71
Emergency Operations Centers**	2	54	56
Department Operations Centers**	0	7	7
Fairgrounds**	1	2	3
Federal Military Installations**	2	0	2
Hazmat Facilities**	1,872	6,117	7,989
National Guard Armories**	0	4	4
Public Utilities/Public Works**	9	56	65
Rail Yards/Train Stations**	1	8	9
Shelters (Mass Care)* **	-	-	~ 252

Note: These figures may be an estimate, based upon the information provided. About 90 percent of server sites will be consolidated under one department by June 2018.

*The number of shelters is an estimate of what the Red Cross Association has in their database, but any facility that the county considers is necessary to use as potential mass care shelter in case of a disaster can be added to the list, meaning there is no specific number of shelters.

**Facilities unable to give replacement values.

Table 14: Riverside County Capital Asset

COUNTY OF RIVERSIDE

Capital Asset Statistics by Function
Last Five Years
June 30, 2022

	Fiscal year ending June 30				
Function/Program	2022	2021	2020	2019	2018
County Libraries					
Branch libraries	35	35	35	35	36
Book mobiles	-	2	2	2	2
Books in collection	1,319,861	1,082,227	1,062,203	829,893	1,337,332
Museum	1	1	1	1	-
Riverside University Health System-Medical Center					
Major clinics	4	4	4	4	4
Routine and specialty clinics	44	44	44	44	44
Bed licensed	439	439	439	439	439
Fire Department					
Stations	37	37	37	37	37
Trucks	167	167	164	162	158
Parks and Recreation					
Regional parks	9	9	9	11	11
Historic sites	4	4	4	5	5
Nature centers	3	3	3	4	4
Archaeological sites	6	6	6	6	6
Wildlife reserves	9	9	9	9	9
RV and mobile home parks	2	2	2	2	2
Managed areas	9	9	9	5	5
Recreational facilities	1	1	1	1	1
Community centers	-	-	-	-	-
County Sheriff Department					
Patrol stations	10	10	10	10	10
Patrol vehicles	961	993	905	977	966
Waste Resources					
Landfills	5	6	6	6	6
Capacity in tons	45,376,689	62,713,411	62,713,411	62,713,411	62,668,370

Source: County of Riverside Annual Comperhensive Financial Report, 2022

Retreived from the internet on 2/3/2023

Note: this data reflects the asset statistics for the unincorporated portions of Riverside County. Please refer to individual annexes for participating jurisdiction data.

Table 15: Riverside County Communications Infrastructure Facilities

Repeater	Location	Latitude	Longitude
Strawberry Peak	San Bernardino National Forest	34°13'55.02"N	117°14'4.15"W
Carbon Canyon	Chino Hills State Park	33°51'45.84"N	117°41'13.46"W
Santiago Peak	Cleveland National Forest	33°42'37.07"N	117°32'3.17"W
El Cariso	Cleveland National Forest	33°40'33.28"N	117°30'56.52"W
Elsinore Peak	Cleveland National Forest	33°36'9.00"N	117°20'36.00"W
Pine Cove	San Bernardino National Forest	33°44'44.00"N	116°42'58.00"W
Red Mountain	Moreno valley	33°37'48.09"N	116°50'52.08"W
Red Mountain	Sage	33°37'48.02"N	116°50'52.66"W
Box Springs	Box Springs Mountain	33°57'42.06"N	117°16'49.15"W
Mt David	Beaumont	33°54'50.87"N	117° 0'3.25"W
Mt Edna	San Bernardino National Forest	33°52'44.06"N	116°52'53.08"W
Whitewater	Whitewater	33°55'28.56"N	116°36'53.74"W
Thomas Mountain	San Bernardino National Forest	33°37'11.09"N	116°40'49.07"W
Santa Rosa Peak	San Bernardino National Forest	33°32'42.33"N	116°28'9.77"W
Cactus City	Cactus City	33°40'40.31"N	115°57'54.19"W
Oasis	Bureau of Land Management	33°37'7.58"N	115°56'18.78"W
Chuckawalla	Chuckawalla	33°36'19.76"N	114°54'8.02"W
Black Rock	Black Rock Mountain	33°36'37.09"N	114°45'34.86"W
Big Maria	Big Maria Mountains	33°52'4.00"N	114°40'9.00"W

Table 16: Riverside County Public Safety Enterprise Communications System Radio Locations

PSEC - Site Information				
#	Site Name	City	ZIP	Building ID
1	Alessandro	Riverside	92506	RV0908
2	Billy Goat	Aguanga	92536	AZ4704
3	Box Canyon	Desert Center	92239	DC2918
4	Arlington	Riverside	92503	RV1055
5	Avocado Flats	Fallbrook	92028	SND6000
6	Banning	Banning	92220	BA102
7	Big Maria (No Equip)	Blythe	92225	BL328
8	Quail Mesa	Parker		ARZ6102
9	Black Eagle	Desert Center	92239	DC2905
10	Black Jack	Desert Center	92239	DC2906
11	Black Rock	Blythe	92225	BL307
12	Blue Mountain	Colton	92313	New # CTN6500
13	Blythe	Blythe	92225	BL327
14	Box Springs	Riverside	92557	MV1201
15	Brookside	Beaumont	92223	BE1607
16	Cactus City	Indio	92203	IN736
17	Cajalco	Corona	92881	CR410
18	Chuckwalla	Desert Center	92239	DC2917
19	Clinton Keith	Murrieta	92562	MU1320
20	Corn Springs	Desert Center	92239	DC2907
21	Corona	Corona	91720	CR403
22	Corona\Buena Vista	Corona	92882	CR411

23	Edom Hill	Desert Hot Springs	92241	NEW# DH1704 OLD-IN065 (DH065)
24	El Cariso	Lake Elsinore	92530	LE513
25	Elsinore Peak	Lake Elsinore	92530	LE515
26	Elsinore Peak	Lake Elsinore		LE516
27	Elsinore Peak Generator Building	Lake Elsinore		LE517
28	Estelle Mountain	Perris	92570	PR818
29	Glen Avon	Riverside	92509	New # JV5945 (Old # RV1049)
30	Gold Crown (Pinto) Eliminated	Eliminated	Eliminated	Eliminated
31	Green River	Corona	92880	CR412
32	Hemet	Hemet	92543	HM605
33	Hidden Valley	Parker	85371	ARZ6101
34	Homeland	Homeland	92548	HL4902
35	Indio	Indio	92201	IN706
36	Indio Hill	Indio	92201	IN064 NEW# IN737
37	Iron Mountain	Earp	92242	DC2909
38	Joshua Tree	Joshua Tree	92277	DC2910
39	JTNP - Belle	Joshua Tree National Park	92239	DC2904
40	JTNP - Cottonwood Eliminated	Desert Center	92239	DC2908
41	JTNP - Lost Horse Eliminated	Eliminated	Eliminated	Eliminated

42	Lake Hemet	Mountain Center	92561	MC3603
43	Lake Matthews	Riverside	92504	RV1048
44	Lake Riverside	Aguanga	92536	AZ4703
45	Leona	Perris	92570	PR819
46	Line	Mecca	92254	ME2008
47	Margarita	Temecula	92592	TM1510
48	Marion Ridge	Idyllwild	92549	ID2503
49	Marshall	Perris	92570	PR820
50	Mead Valley	Perris	92570	PR821
51	Mecca Landfill	Desert Center	92239	DC2911
52	Menifee	Menifee	92584	MN2104
53	Morongo	Cabazon	92230	CB3107
54	Mt. David	Beaumont	92223	BE1601
55	North Mt.	San Jacinto	92583	SJ1404
56	Palen/McCoy	Desert Center	92239	DC2920
57	Beacon Hill	Norco	92860	NR3703
58	Perris	Perris	92570	PR805
59	Pleasants Peak ELIMINATED	Corona	92879	CR004 ELIMINATED
60	Quail Valley	Quail Valley	92587	QV5102
61	Ranger Peak	Idyllwild	92549	BA180
62	Red Mountain	Hemet	92544	HM612
63	Redondo Mesa	Murrieta	92562	MU1321
64	Rice	Desert Center	92239	DC2912
65	Ridge Road	Lake Elsinore	92530	LE512
66	Riverside CAC	Riverside	90501	RV0905
67	Road 62	Desert Center	92239	DC2921

68	Road 177	Desert Center	92239	DC2913
68	Santa Rosa Peak	Mountain Center	92561	CO201
70	Santiago Peak	Corona	92883	CR413
71	Snow Peak	Morongo Valley	92339	MGV6201
72	Sunnyslope	Riverside	92509	New #JV5939 (Old #RV1050)
73	Temescal	Corona	92883	CR414
74	Timoteo	Moreno Valley	92555	MV1228
75	Toro Peak	Mountain Center	92561	MC3604
76	Vaquero	Temecula	92590	TM1509
77	Vidal Junction	Earp	92242	DC2915
78	Whitewater	Banning	92282	BA184
79	Grape Hill	Corona	N/A	N/A
80	Hollingsworth	Murrieta	N/A	N/A

4.4.1 Mitigation Goals and Strategies Relating to Critical Facilities

On September 28, 2021, the Safety Element including a description of the Riverside County Multi-Jurisdictional Local Hazard Mitigation Plan was adopted into the 2015 General Plan.

The General Plan identified the following policies relating to critical facilities.

S 6.15 * Strengthen the project permit and review process to ensure that proper actions are taken to reduce hazard impacts and encourage structural and nonstructural design and construction. Damage must be minimized for critical facilities, and susceptibility to structural collapse must be minimized, if not eliminated. (AI 104.2, 152, 155)

a) Ensure that special development standards, designs, and construction practices reduce risk to tolerable levels for projects involving critical facilities, large-scale residential development, and major commercial or industrial development through conditional use permits and the subdivision review process. If appropriate, impact fees should be assessed to finance required actions.

b) Require mitigation measures to reduce potential damage caused by ground failure for sites determined to have potential for liquefaction to the extent feasible and appropriate. Such measures shall apply to critical facilities, utilities, and large commercial and industrial projects as a condition of project approval.

c) Require that planned lifeline utilities, as a condition of project approval and as feasible and appropriate, be designed, located, structurally upgraded, fit with safety shutoff valves, designed for easy maintenance, and have redundant backup lines where unstable slopes, earth cracks, active faults, or areas of liquefaction cannot be avoided.

d) Review proposed uses of fault setback areas closely to ensure that county infrastructure (roads, utilities, drains) is not unduly placed at risk by the developer. Insurance, bonding, or compensation plans should be used to compensate the County of Riverside for the potential costs of repair.

S 6.16 * Promote strengthening of planned and existing utilities and lifelines, the retrofit and rehabilitation of existing weak structures, and the relocation of certain critical facilities. (AI 100, 101, 148, 152, 155, 156)

S 6.17 * Identify critical facilities in hazard-prone areas and work to relocate or harden these facilities to reduce risk of damage and loss of service. (AI 87, 101) County of Riverside General Plan S-26 September 28, 2021

S 6.18 * Prohibit development of critical facilities that are proposed in dam failure inundation areas unless no feasible alternative exists and apply hazardous materials safety guidelines within such zones.

S 6.19 * Coordinate with the Public Utilities Commission (PUC) and/or use the Capital Improvement Program, to strengthen, relocate, or take other appropriate measures to safeguard high-voltage lines, water, sewer, natural gas and petroleum pipelines, and trunk electrical and telephone conduits that (AI 4, 152, 155):

• Extend through areas of high liquefaction potential.

• Cross active faults.

• Traverse earth cracks or landslides.

S 6.20 * Require additional design considerations as appropriate for lifelines within subsidence areas.

S 6.21 Communicate climate risks to energy utilities and request they ensure that new and upgraded infrastructure is climate resilient. (AI 152, 155) S 6.22 * During the development review process, when developing alternatives and adaptation projects for consideration, the County shall require applicants to identify natural infrastructure that may be used through the conservation, preservation, or sustainable management of open space to reduce climate change hazards, where feasible.

S 6.23 Establish a network of equitably located resilience centers throughout unincorporated Riverside County and ensure that resilience centers are situated outside of areas at risk from hazard impacts to the extent possible, offer refuge from extreme heat and extreme weather events, and are equipped with renewable energy generation and backup power supplies. Such facilities should be in easily accessible locations and be available to all community members as needed. (AI 151)

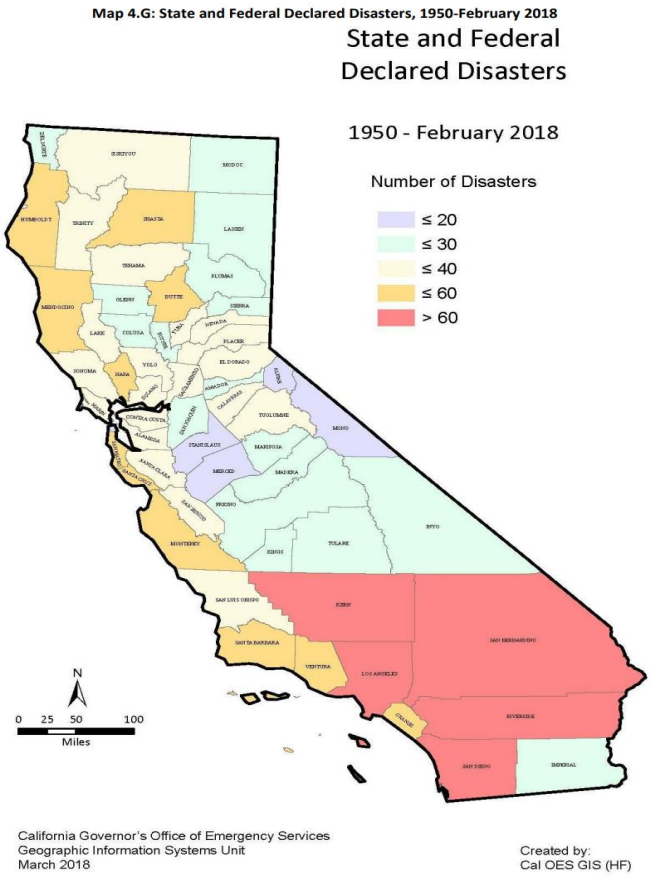
S 6.24 Collaborate with utility companies to support and enhance grid reliability during regular operations and extreme conditions. (AI 152, 155) Source: (All from Safety Element S6.15-S6.24: Critical Facilities and Lifelines)

Note: The Mitigation Goals and Strategies related to each hazard are found in Section 5 of the 2023 LHMP.

4.4.2 Loss Factors

The loss estimates provided in this MJLHMP are based on data currently available resulting in an approximation of the relative risk from the various hazards and potential losses. There are uncertainties inherent in any loss estimation methodology, in part from incomplete knowledge available concerning the different hazards, as well as approximations and simplifications used in the analysis. Nevertheless, it can be determined by the map below that Riverside County is in a region in California having the highest number of declared disasters since 1950.

Map 2: 2018 California State Hazard Mitigation Plan, Primary Sources of Disaster Losses



Map 4.G shows the pattern of California disasters since 1950. The largest numbers have occurred in Southern California in the state's most heavily populated counties.

Table 4.F from the 2018 SHMP Chapter 4, identifies disaster incidents, casualties, and Cal OES costs by type. Cal OES has revised the database during the preparation of the 2018 SHMP.

Table 17: Disaster Incidents, Casualties, and Cost by Type

Disaster Type Per Federal Emergency Management Agency (FEMA)	Declared/ Proclaimed Emergencies Through 2017*	State Emergency Proclamations Though 2017	Federal Disaster Declarations Though 2017	Deaths Through 2017**	Cal OES-Administered Costs Though 2017**
Fire	287	96	191	209[a]	$3,363,404,368
Flood	168	118	50	302	$4,723,407,152
Earthquake	35	22	13	193	$8,144,903,796
Agricultural	18	17	0	0	$389,895,974
Freeze	9	8	4	0	$1,017,890,620
Landslide	9	8	1	24	$126,172,037
Civil Unrest	6	6	1	85	$167,722,732
Drought	9	9	0	0	$2,722,036,634
Hazardous Material	5	3	0	0	0
Wind	3	3	0	0	$82,100
Tsunami	3	3	2	13	$49,617,379
Invasive Species	1	1	0	0	0
Storms	13	9	1	0	$74,115,181
Tornado	1	1	0	0	0
Other	5	5	1	0	$10,660,320
Total	***572***	***309***	***264***	***826***	***$20,789,908,293***

Source: California Governor's Office of Emergency Services (Cal OES) database

Table 4.F above from the SHMP, which shows the pattern of statewide emergencies, disasters, and associated losses by hazard types since 1950, when coupled with seismic knowledge, suggests the following findings:

- Earthquakes occur less frequently than the other primary hazards causing disasters but account for the greatest combined losses (deaths, injuries, and damage costs).
- Wildfires are the most frequent source of declared disasters and account for the third highest combined losses.
- Floods are the second most frequent disaster source and account for the second highest combined losses.

- Earthquake costs exceeded wildfire costs by more than two times, using limited measures identified in these tables.
- Although floods have resulted in a greater number of total deaths during this period, earthquakes have accounted for the highest number of combined deaths and injuries.
- Earthquakes represent by far the greatest long term catastrophic disaster threat.

Earthquakes, fires, and floods are the predominant disasters in California since 1950 as determined by this analysis. For this reason, these hazards are being addressed in the 2023 Mitigation Strategies and are among the top ten hazards for the County.

Continued climate change and drought conditions will relate to high incidents of wildfire and flood declarations. The high number of earthquake declarations for Riverside County is contributed to having three (3) major faults traversing Riverside County: The San Andreas Fault, the Elsinore Fault, and the San Jacinto Fault.

Earthquake hazard mitigation is particularly relevant to SHMP Goal 1 (Significantly reduce life loss and injuries) and SHMP Goal 2 (Minimize damage to structures and property), set forth in Chapter 2 of the SHMP. Considering both the social and economic disruption caused by moderate-sized earthquakes, together with the significant potential for catastrophic earthquakes greater in magnitude than those experienced since 1950, heightened attention is needed for mitigation strategies relating to this hazard. Earthquake mitigation actions often involve expensive projects that will be considered as funding becomes available.

The 2018 SHMP is the data source contained in Figure 19 “2018 California State Hazard Mitigation Plan, Primary Sources of Disaster Losses” and Table 15 “Disaster Incidents, Casualties, and Cost by Type.” Once the 2023 SHMP is completed and approved, Figures and Tables will be updated to include the most recent maps and new information.

4.4.3 2015 General Plan Policies on High-Risk Facilities

Many Riverside County essential public facilities and hazardous materials sites are located within the 100-year flood zones making them high-risk facilities. These facilities include: 14 of Riverside County’s 39 airports; 4 of 18 hospitals; 47 of 109 law enforcement stations, fire stations and emergency operation centers; 92 of 380 schools; 446 of 1,306 highway bridges; and 695 of 1,978 hazardous materials sites.

Riverside County has adopted the following policies related to high-risk facilities to mitigate future damages:

S 3.12 * Public facilities and other facilities essential for emergencies and large public assembly within the County Regulatory Floodplain as mapped by the Federal Emergency Management Agency shall not be approved unless the project is adequately protected from flood hazards, incorporates all required flood protection specific to that area in accordance with County ordinances and guidelines, as feasible, and will not result in any increase in flood levels during the occurrence of a flood event. Such facilities that are new shall have at least two routes for emergency egress and ingress, and the project design shall minimize the potential for debris or flooding to block emergency routes, either through the construction of dikes, bridges, or large-diameter storm drains under roads used for primary access. (AI 25)

S-15 S 3.13 * Existing essential, dependent-care, and high-risk facilities not in conformance with provisions of the County of Riverside zoning should upgrade or modify building use to a level of safety consistent with the inundation risk. (AI 25, 88, 148)

S 3.14 * Development using, storing, or otherwise involved with substantial quantities of on-site hazardous materials should not be permitted within a 100-year floodplain or dam inundation zone, unless all standards for evaluation, anchoring, and flood-proofing have been satisfied. Hazardous materials should be stored in watertight containers, not capable of floating, to the extent required by state and federal laws and regulations. Facilities storing substantial quantities of hazardous materials within inundation zones should be adequately flood-proofed and hazardous materials containers shall be anchored and secured to prevent flotation and contamination. (AI 25)

S 3.15 * Dependent-care facilities should have all flood-vulnerable electrical circuitry flood-proofed. (AI 25)

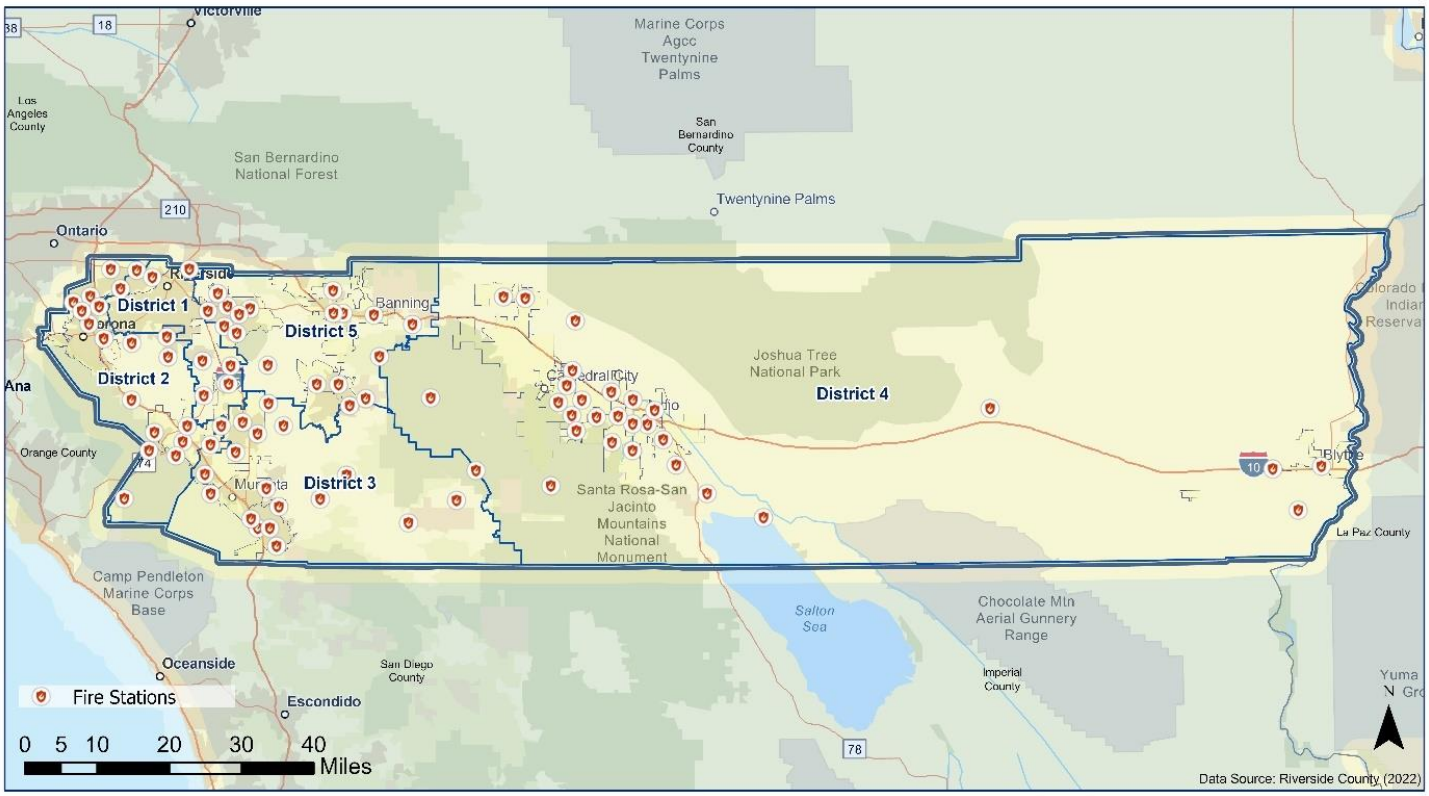
S 3.16 * High-risk facilities should be required to maintain and rehearse inundation response plans. (AI 25)

Source: (All from Safety Element S-4: High Risk Facilities)

4.4.4 Critical Infrastructures Maps

The following maps show Riverside County's Critical Infrastructures.

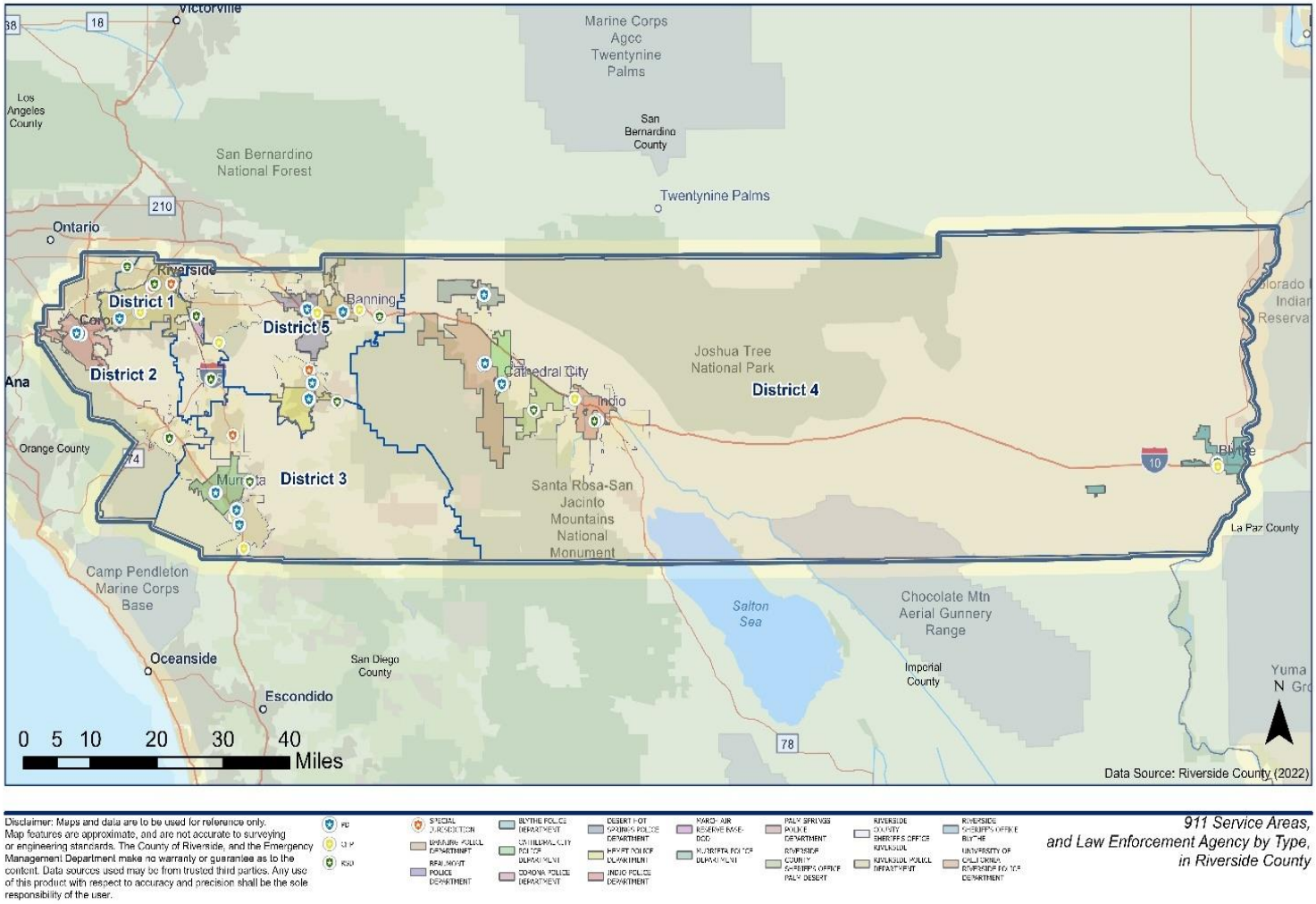
Map 3: Riverside County Fire Facilities Map



Disclaimer: Maps and data are to be used for reference only. Map features are approximate, and are not accurate to surveying or engineering standards. The County of Riverside, and the Emergency Management Department make no warranty or guarantee as to the content. Data sources used may be from trusted third parties. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user.

Fire Stations, in Riverside County

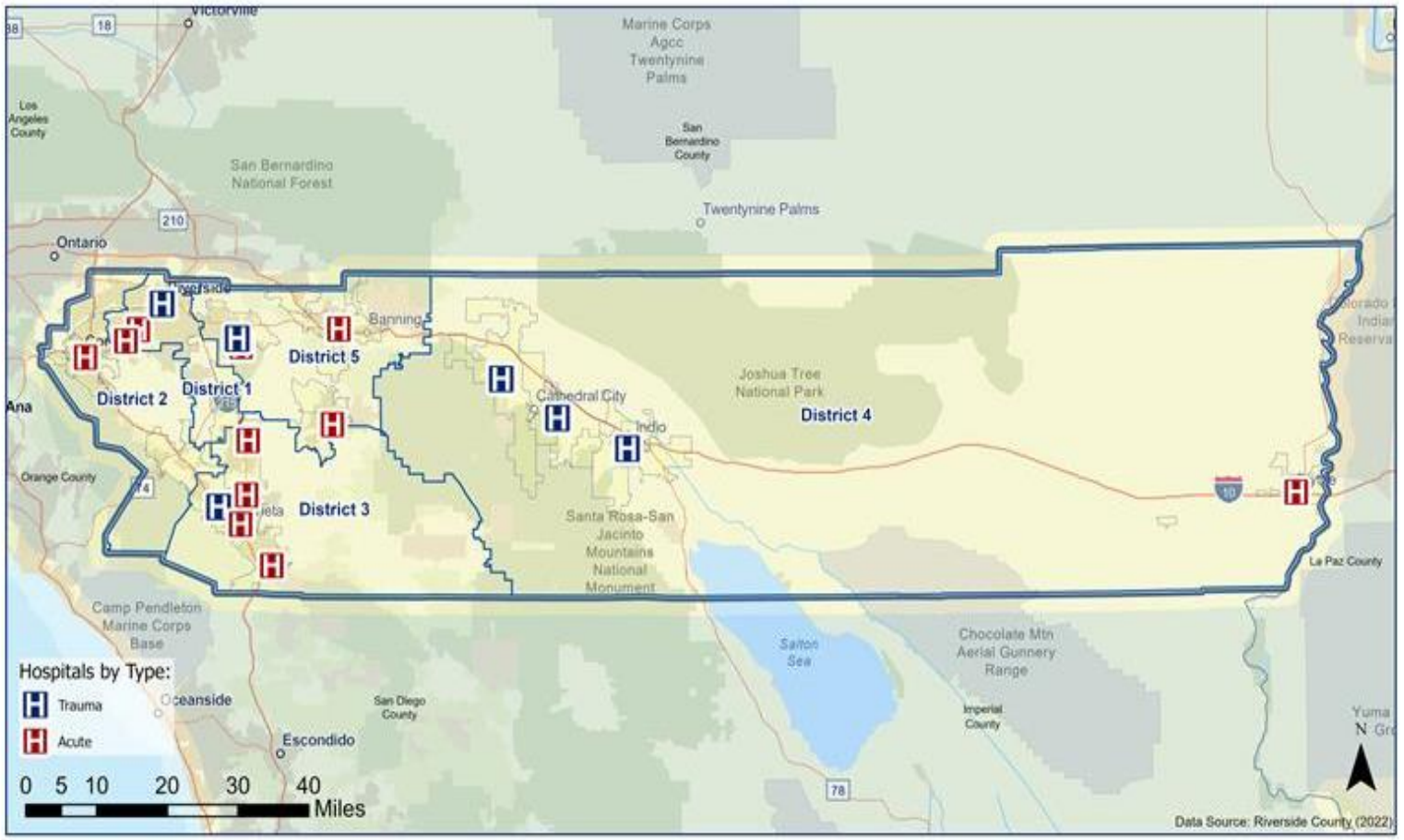
Map 4: Riverside County Law Enforcement Facilities Map



Disclaimer: Maps and data are to be used for reference only. Map features are approximate, and are not accurate to surveying or engineering standards. The County of Riverside, and the Emergency Management Department make no warranty or guarantee as to the content. Data sources used may be from trusted third parties. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user.

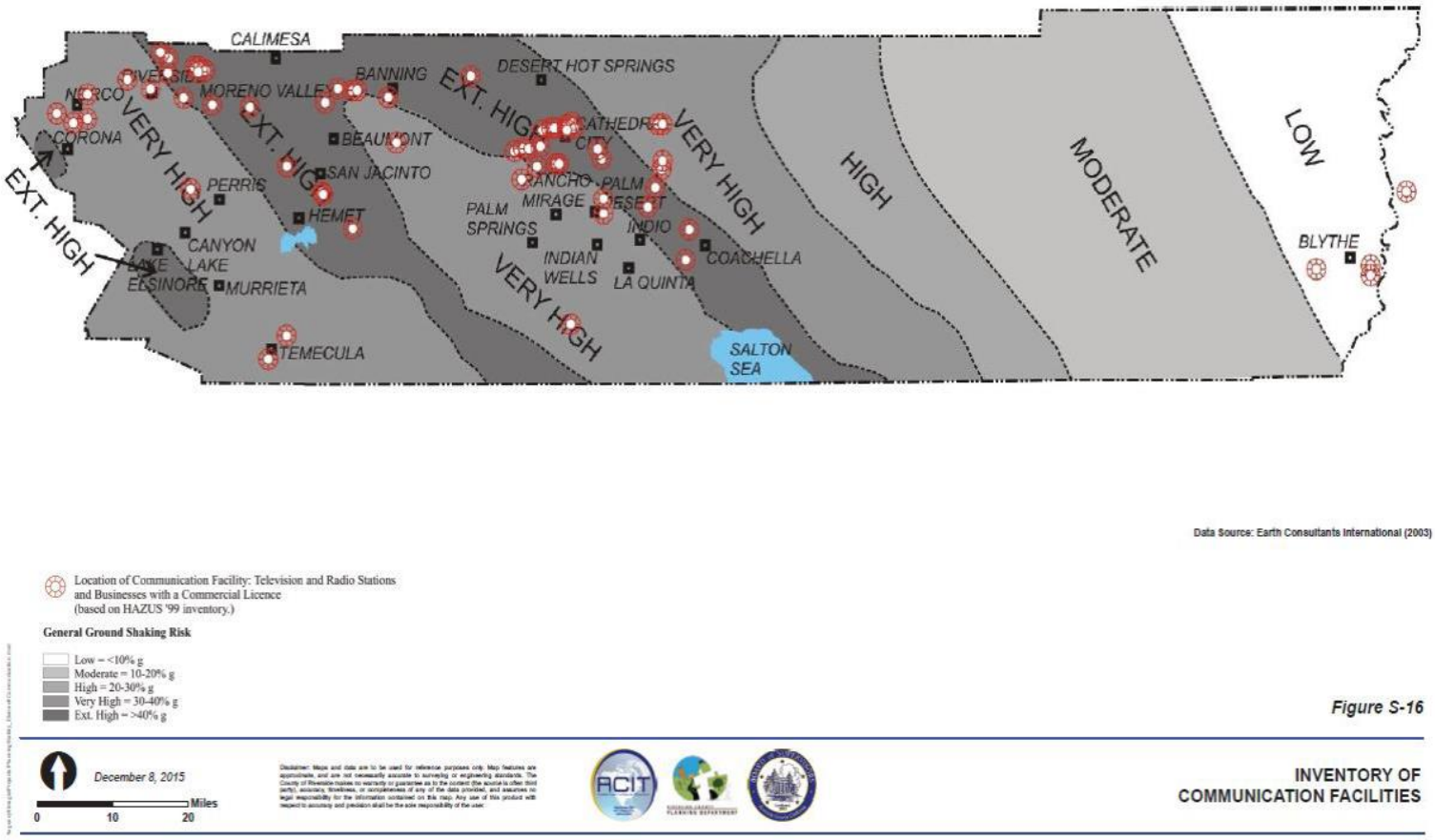
911 Service Areas, and Law Enforcement Agency by Type, in Riverside County

Map 5: Hospital Locations in Riverside County Map

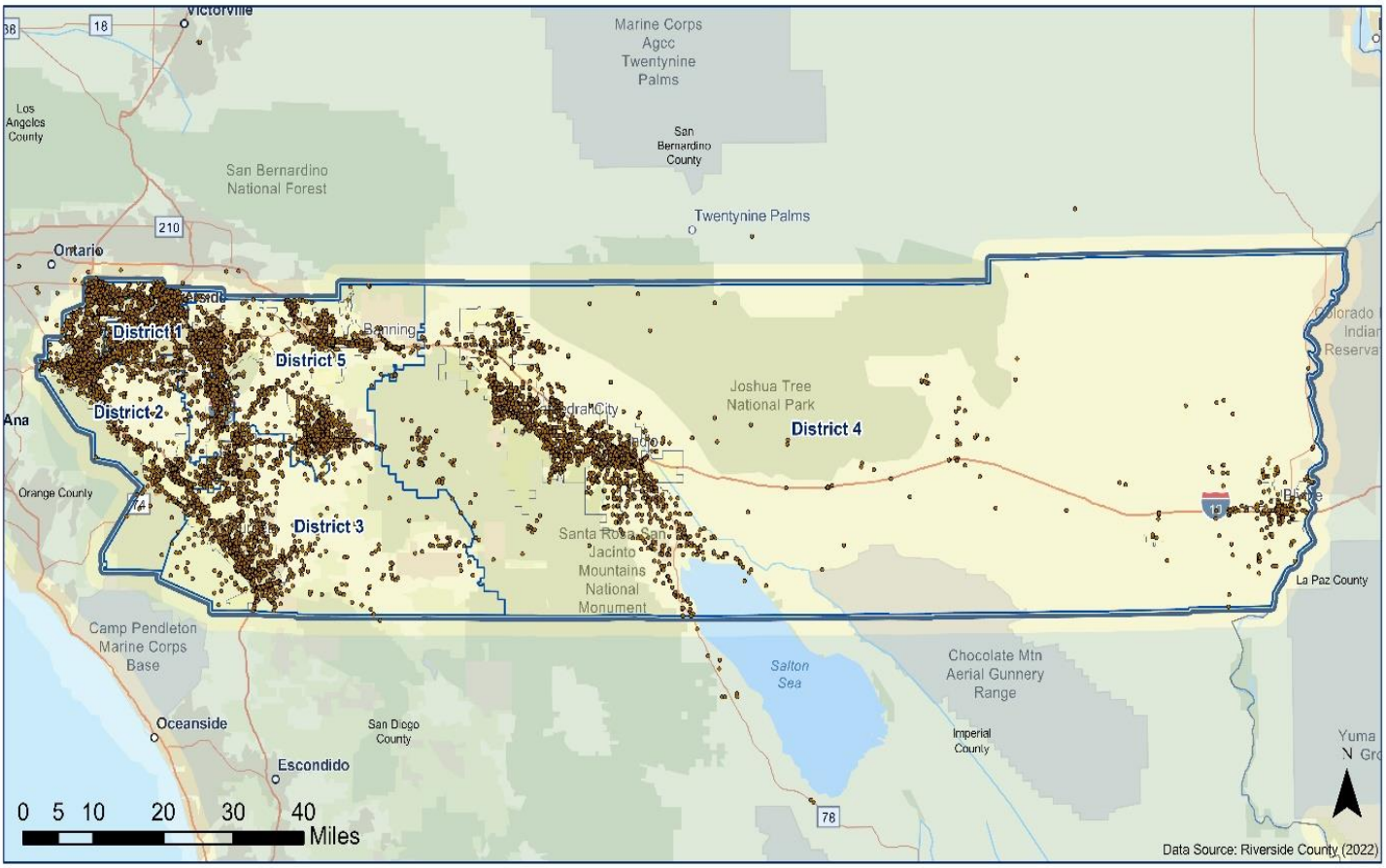


Hospitals by Type, in Riverside County

Map 6: Riverside County Communication Facilities and Ground Shaking Map



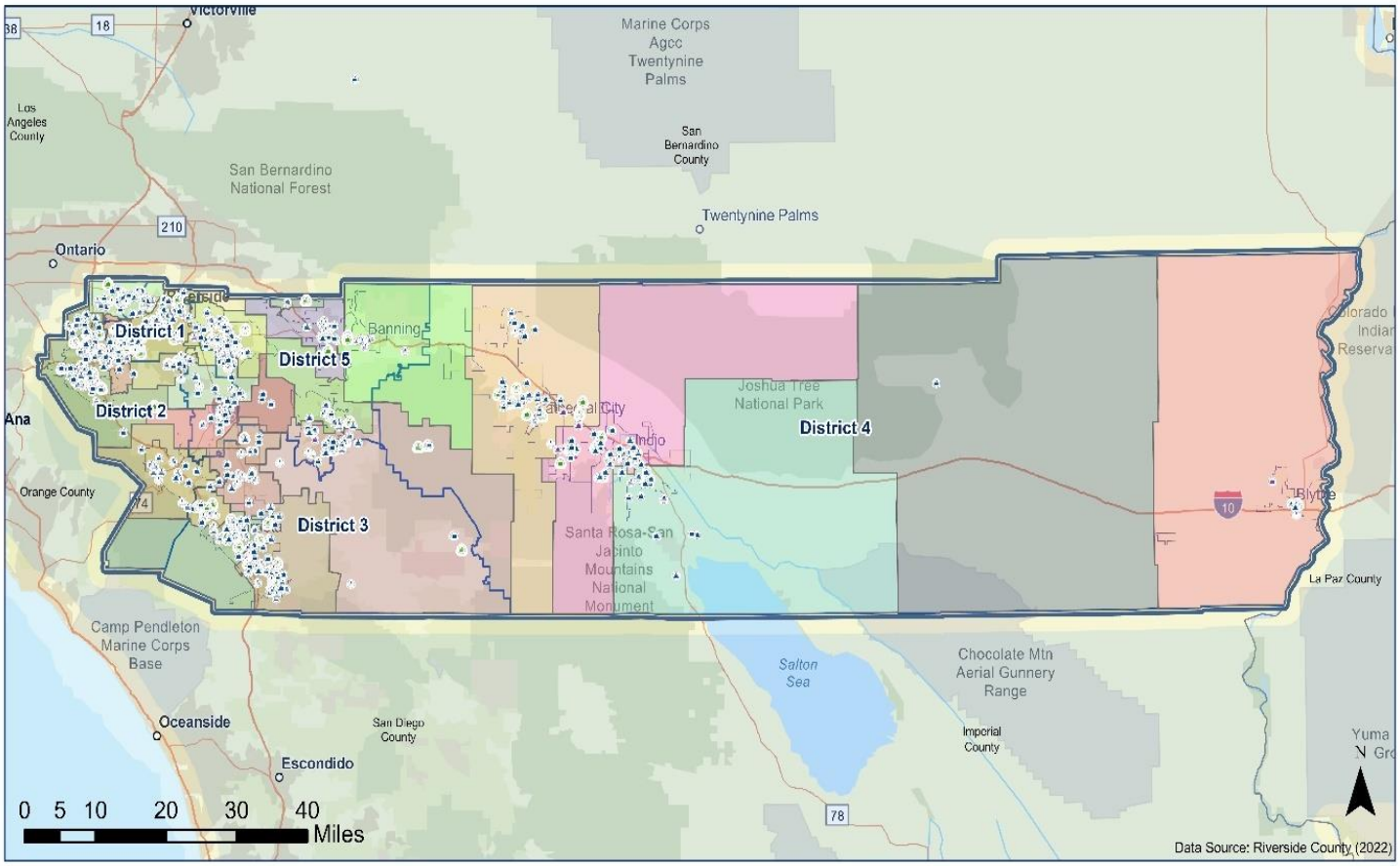
Map 7: Riverside County Hazardous Materials Locations Map



Disclaimer: Maps and data are to be used for reference only. Map features are approximate, and are not accurate to surveying or engineering standards. The County of Riverside, and the Emergency Management Department make no warranty or guarantee as to the content. Data sources used may be from trusted third parties. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user.

Hazardous Material Locations, in Riverside County

Map 8: Riverside County School Inventory Map



4.5 Estimated Property Loss

Table 18: Riverside County Property Values by City

RIVERSIDE COUNTY ASSESSOR
ASSESSED VALUE FOR CITIES
2021/2022

Pri TRA	CITY	TOTAL 2021/2022 LOCAL ROLL	LESS NON-REIMBURSED EXEMPTIONS	NET TANGIBLE VALUE	LESS HOMEOWNER'S EXEMPTIONS	2021/2022 NET TAXABLE VALUE	2020/2021 NET TAXABLE VALUE	NET TAXABLE VALUE CHANGE	NET TAXABLE PERCENTAGE CHANGE
1	BANNING	2,623,412,074	56,991,269	2,566,420,805	34,829,783	2,531,591,022	2,405,475,797	126,115,225	5.24%
2	BEAUMONT	6,702,497,679	120,689,453	6,581,808,226	50,726,439	6,531,081,787	5,971,834,237	559,247,550	9.36%
3	BLYTHE	863,923,000	50,494,071	813,428,929	8,942,936	804,485,993	776,434,872	28,051,121	3.61%
4	CORONA	24,529,896,524	486,535,844	24,043,360,680	126,440,244	23,916,920,436	22,953,623,209	963,297,227	4.20%
5	LAKE ELSINORE	7,491,876,358	91,590,426	7,400,285,932	45,240,775	7,355,045,157	6,922,737,472	432,307,685	6.24%
6	HEMET	6,941,795,606	187,399,775	6,754,395,831	76,885,026	6,677,510,805	6,382,682,662	294,828,143	4.62%
7	INDIO	10,016,838,409	276,999,615	9,739,838,794	69,025,445	9,670,813,349	9,186,672,281	484,141,068	5.27%
8	PERRIS	8,332,543,331	85,705,892	8,246,837,439	40,944,533	8,205,892,906	7,525,695,255	680,197,651	9.04%
9	RIVERSIDE	37,029,174,363	1,692,341,660	35,336,832,703	219,442,562	35,117,390,141	33,342,045,389	1,775,344,752	5.32%
10	SAN JACINTO	3,763,048,828	81,898,573	3,681,150,255	35,320,964	3,645,829,291	3,440,056,095	205,773,196	5.98%
11	PALM SPRINGS	15,840,173,015	286,113,332	15,554,059,683	58,010,023	15,496,049,660	14,407,793,549	1,088,256,111	7.55%
12	COACHELLA	2,393,960,496	171,852,852	2,222,107,644	19,184,378	2,202,923,266	2,090,720,981	112,202,285	5.37%
13	TEMECULA	18,632,805,420	358,555,324	18,274,250,096	97,841,800	18,176,408,296	17,385,971,022	790,437,274	4.55%
14	DESERT HOT SPRINGS	2,315,012,487	76,034,377	2,238,978,110	18,174,777	2,220,803,333	2,060,649,676	160,153,657	7.77%
15	NORCO	3,983,838,157	68,539,025	3,915,299,132	25,138,400	3,890,160,732	3,677,589,881	212,570,851	5.78%
16	INDIAN WELLS	6,647,412,938	48,743,240	6,598,669,698	8,255,800	6,590,413,898	6,352,657,221	237,756,677	3.74%
17	RANCHO MIRAGE	10,531,191,195	765,555,506	9,765,635,689	29,607,200	9,736,028,489	9,277,888,960	458,139,529	4.94%
18	PALM DESERT	16,974,917,677	206,837,182	16,768,080,495	64,628,443	16,703,452,052	16,152,662,735	550,789,317	3.41%
19	CATHEDRAL CITY	5,538,393,591	189,653,752	5,348,739,839	44,691,740	5,304,048,099	5,017,853,321	286,194,778	5.70%
20	LA QUINTA	15,357,911,884	184,400,165	15,173,511,719	46,218,200	15,127,293,519	14,364,884,152	762,409,367	5.31%
21	MORENO VALLEY	19,624,065,854	416,160,436	19,207,905,418	127,127,071	19,080,778,347	18,212,273,888	868,504,459	4.77%
22	CALIMESA	1,311,028,521	21,216,461	1,289,812,060	12,562,292	1,277,249,768	1,108,058,559	169,191,209	15.27%
23	CANYON LAKE	2,051,169,591	11,452,379	2,039,717,212	14,571,200	2,025,146,012	1,929,605,174	95,540,838	4.95%
24	MURRIETA	15,959,027,514	575,582,682	15,383,444,832	97,812,324	15,285,632,508	14,596,215,711	689,416,797	4.72%
25	WILDOMAR	4,058,181,533	112,551,839	3,945,629,694	31,082,800	3,914,546,894	3,712,534,341	202,012,553	5.44%
26	MENIFEE	12,564,137,952	260,450,133	12,303,687,819	103,935,566	12,199,752,253	11,168,083,677	1,031,668,576	9.24%
27	EASTVALE	11,457,134,010	38,857,480	11,418,276,530	51,479,882	11,366,796,648	10,844,689,828	522,106,820	4.81%
28	JURUPA VALLEY	11,921,166,095	101,118,970	11,820,047,125	68,674,552	11,751,372,573	11,366,300,637	385,071,936	3.39%
	CITY TOTALS	285,456,534,102	7,024,321,713	278,432,212,389	1,626,795,155	276,805,417,234	262,633,690,582	14,171,726,652	5.40%
	UNINCORPORATED TOTALS	52,830,876,111	1,015,504,321	51,815,371,790	339,882,604	51,475,489,186	48,013,165,883	3,462,323,303	7.21%
	GRAND TOTAL	338,287,410,213	8,039,826,034	330,247,584,179	1,966,677,759	328,280,906,420	310,646,856,465	17,634,049,955	5.68%

Table 19: Unincorporated Riverside County Property Values

RIVERSIDE COUNTY ASSESSOR
ASSESSED VALUE FOR UNINCORPORATED AREAS
2021/2022

Pri TRA	AREA	TOTAL 2021/2022 LOCAL ROLL	LESS NON-REIMBURSED EXEMPTIONS	NET TANGIBLE VALUE	LESS HOMEOWNER'S EXEMPTIONS	2021/2022 NET TAXABLE VALUE	2020/2021 NET TAXABLE VALUE	ASSESSED VALUE CHANGE	PERCENTAGE CHANGE
53	Alvord	1,505,401,024	5,158,554	1,500,242,470	11,699,800	1,488,542,670	1,431,006,060	57,536,610	4.02%
54	Menifee	1,519,202,229	29,069,185	1,490,133,044	7,365,400	1,482,767,644	1,298,319,529	184,448,115	14.21%
55	Banning	957,277,979	8,294,046	948,983,933	4,058,331	944,925,602	938,179,653	6,745,949	0.72%
56	Beaumont	867,900,070	16,443,129	851,456,941	9,877,993	841,578,948	771,450,564	70,128,384	9.09%
58	Coachella	2,223,595,860	97,885,248	2,125,710,612	7,941,028	2,117,769,584	1,993,338,062	124,431,522	6.24%
59	Corona-Norco	5,413,016,563	36,202,748	5,376,813,815	37,051,750	5,339,762,065	4,974,261,894	365,500,171	7.35%
61	Palm Springs	2,460,153,981	81,006,534	2,379,147,447	24,484,873	2,354,662,574	2,255,875,952	98,786,622	4.38%
62	Desert Center	282,631,456	350,907	282,280,549	260,602	282,019,947	233,843,388	48,176,559	20.60%
65	Elsinore	2,234,527,449	33,136,584	2,201,390,865	18,948,972	2,182,441,893	2,087,162,523	95,279,370	4.57%
68	Colton	142,702,082	4,188,781	138,513,301	945,000	137,568,301	133,642,313	3,925,988	2.94%
71	Hemet	6,241,870,981	223,153,326	6,018,717,655	54,077,254	5,964,640,401	5,547,777,957	416,862,444	7.51%
75	Desert Sands	3,889,602,483	38,508,978	3,851,093,505	28,530,600	3,822,562,905	3,657,281,590	165,281,315	4.52%
80	Moreno	1,546,326,919	15,034,025	1,531,292,894	1,006,600	1,530,286,294	1,212,436,410	317,849,884	26.22%
82	Murrieta	2,896,142,655	23,076,028	2,873,066,627	10,791,200	2,862,275,427	2,768,769,183	93,506,244	3.38%
83	Nuview	939,721,073	13,898,182	925,822,891	7,914,200	917,908,691	880,713,804	37,194,887	4.22%
85	Palo Verde	879,383,931	288,556	879,095,375	2,196,903	876,898,472	901,171,501	(24,273,029)	-2.69%
87	Perris	895,539,574	4,037,192	891,502,382	7,000,988	884,501,394	844,316,610	40,184,784	4.76%
88	Riverside	4,988,699,063	48,608,084	4,940,090,979	34,169,800	4,905,921,179	4,506,409,772	399,511,407	8.87%
89	Romoland	757,569,467	7,095,616	750,473,851	9,013,200	741,460,651	687,487,125	53,973,526	7.85%
91	San Jacinto	283,102,905	120,809,389	162,293,516	1,477,480	160,816,036	154,492,222	6,323,814	4.09%
94	Temecula	8,947,658,184	180,674,564	8,766,983,620	46,852,400	8,720,131,220	8,217,718,677	502,412,543	6.11%
97	Yucaipa	118,892,033	451,645	118,440,388	901,600	117,538,788	113,794,990	3,743,798	3.29%
98	Val Verde	2,839,958,150	28,133,020	2,811,825,130	13,316,630	2,798,508,500	2,403,716,103	394,792,397	16.42%
	TOTALS	52,830,876,111	1,015,504,321	51,815,371,790	339,882,604	51,475,489,186	48,013,165,883	3,462,323,303	7.21%

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Section 5.0 – Risk Assessment

5.1 Overview and Risk Assessment Process

The risk assessment process identifies and profiles relevant hazards and assesses the exposure of lives, property, and infrastructure to these hazards. The Risk is measured by hazard, vulnerability, and exposure probability.

The Riverside County Multi-Jurisdiction Hazard Mitigation Plan's risk assessment follows the methodology described in the FEMA publication Local Mitigation Planning Handbook, which breaks the assessment down to a four-step process:

- Identify Hazards
- Profile Hazard Events
- Inventory Assets
- Estimate Losses

This risk assessment covers the entire geographical extent of Riverside County, including the incorporated communities and other participating jurisdictions. Since this plan is a multi-jurisdictional plan, participating jurisdictions completed their own hazard analysis and risk assessment and many have ranked their hazards differently than the County to match the needs of their jurisdiction. The MJLHMP Steering Committee has evaluated how these identified hazards and risks vary from jurisdiction to jurisdiction. These individual hazards and assessments are briefly outlined in this chapter with more details found in each jurisdictional annex. If no additional data is provided in an annex, it should be assumed that the risk and potential impacts to the affected jurisdiction are the same as those described in this Riverside County Operational Area MJLHMP.

The Riverside County Operational Area MJLHMP update involved a comprehensive review and update of each section of the risk assessment with new data, where available, and new analyses.

5.1.1 Results and Methodology

The MJLHMP Steering Committee utilized the existing 2023 MJLHMP identified hazards. Using existing hazard data and input gained through planning meetings, the MJLHMP Steering Committee agreed upon a list of natural, human caused and technological hazards that could affect Riverside County.

Hazard data from the California Office of Emergency Services (Cal OES), FEMA, and many other sources were examined to assess the significance of these hazards to the planning area. Significance was measured in general terms and focused on key criteria such as frequency and resulting damage, which includes deaths and injuries, as well as property and economic damage. The natural hazards evaluated as part of this plan include those that have occurred historically or have the potential to cause significant human and/or monetary losses in the future. Human caused and technological hazards were evaluated in the same manner. During the assessment of the identified County hazards the Steering Committee realized the need to adjust the definitions for Pandemic Flu and Aqueduct to Pandemic and Aqueduct Failure to incorporate the expanded scope and impact of these hazards. The Committee based this decision from the history of events and probability of future occurrences.

Please see Table 10 Hazard Identification Table for justification of each hazards ranking.

5.2 Consequence Analysis

All participants were asked to evaluate the potential for an event to occur in their jurisdiction by hazard and the potential impact on the following:

1. Public (loss of life and injuries)
2. Responders
3. Continuity of operations for continued delivery of services
4. Property, facilities, and infrastructure
5. Environment
6. Economic condition of the jurisdiction
7. Ability to recover from the event and return to normal daily activities
8. Public confidence in the jurisdiction's governance

The participants were then asked to rate the potential and severity using a scale of between 0 and 4 (4 being the most severe). The jurisdictions were also asked to rank the listed hazards as they relate to their jurisdiction from 1 to 20 (1 being the highest overall threat to their jurisdiction).

The following table was given to participants during the 2018 MJLHMP update and again for the 2023 MJLHMP update.

Table 20: 2018 and 2023 MJLHMP Update Participant Ranking Chart Template

HAZARDS	LOCAL JURISDICTION		
NATURAL DISASTER / CLIMATE	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1-24**
EARTHQUAKE			
FIRE			
FLOOD			
AQUEDUCT FAILURE			
DROUGHT			
INSECT INFESTATION			
LANDSLIDE			
TORNADO			
EXTREME WEATHER			
ANTHOPOGENIC / TECHNOLOGICAL			
CIVIL DISORDER			
COMMUNICATIONS FAILURE			
CYBER ATTACK/ CYBER TERRORISM			
DAM FAILURE			
ELECTRICAL FAILURE			
HAZARDOUS MATERIALS INCIDENT			
JAIL/PRISON EVENT			
NUCLEAR INCIDENT			
PIPELINE DISRUPTION			
RADIOLOGICAL INCIDENT			
TERRORIST EVENT			
TRANSPORTATION FAILURE			
WATER SUPPLY DISRUPTION / CONTAMINATION			
MEDICAL			
EMERGING / RE-EMERGING INFECTIOUS DISEASES			
PANDEMIC			

Note: Please refer to the individual Local Hazard Mitigation Plans for participating jurisdiction

Please See Appendix D for the Inventory Worksheet template provided to participants.

The County used a similar format for the probability and severity ranking for potential hazards but also included information on healthcare impact and mitigation capabilities. The following chart was used by the MJLHMP Steering Committee for ranking the 2023 Hazards.

Table 21: Jurisdictional Vulnerability Worksheet

NATURAL DISASTER / CLIMATE	SEVERITY 0 - 4	PROBABILITY 0 - 4	HISTORIC FREQUENCY	PRIORTY	RANKING 1-24
EARTHQUAKE	4	2	Medium	High	2
FIRE	4	4	Very High	High	1
FLOOD	3	3	High	High	5
AQUEDUCT FAILURE	2	3	Low	Low	19
DROUGHT	3	3	High	Medium	8
EXTREME WEATHER	3	3	High	High	7
INSECT INFESTATION	2	3	High	Medium	15
LANDSLIDE	3	3	Medium	Medium	14
TORNADO	2	1	Low	Low	22
ANTHOPOGENIC /					
CIVIL DISORDER	3	2	Low	High	17
COMMUNICATIONS FAILURE	3	2	Low	High	12
CYBER ATTACK/ CYBER TERRORISM	4	1	High	High	10
DAM FAILURE	1	3	Low	Medium	13
ELECTRICAL FAILURE	4	4	Very High	High	6
HAZARDOUS MATERIALS INCIDENT	3	4	Very High	Medium	9
JAIL/PRISON EVENT	2	1	Low	Low	20
NUCLEAR INCIDENT	4	1	Low	Low	23
PIPELINE DISRUPTION	3	2	Low	Low	21
RADIOLOGICAL INCIDENT	4	1	Low	Low	24
TERRORIST EVENT	3	1	Low	High	11
TRANSPORTATION FAILURE	3	2	Low	Medium	16
WATER SUPPLY DISRUPTION /	2	3	Medium	Medium	18
MEDICAL					
EMERGING / RE-EMERGING	4	4	High	High	3
PANDEMIC	4	2	Low	High	4

Table 22: 2023 MJLHMP Top Five Identified Hazards

Riverside County Multi-Jurisdictional Local Hazard Mitigation Plan Risk Assessment Chart					
Jurisdiction	Priority Risk/ Hazards				
	#1	**#2**	**#3**	**#4**	**#5**
Riverside OA	Earthquake	Wildland Fire	Emerging / Re-emerging Infectious Diseases	Pandemic	Flood
Cities					
Banning	Earthquake	Fire	Transportation	HazMat	Flood
Beaumont	Earthquake	Fire	Flood	HazMat	Transportation
Blythe	Extreme Weather	Wind	Power Failure	Transportation	HazMat
Calimesa	Fire	Earthquake	Flood	Extreme Weather	Drought
Canyon Lake	Flood	Earthquake	Fire	Transportation	Nuclear Incident
Cathedral City	Earthquake	Flood	Wind	Landslide	Extreme Weather
Coachella	Earthquake	Extreme Weather	HazMat	Power Failure	Wind
Corona	Earthquake	Fire	Power Failure	Terrorism	Flood
Desert Hot Springs	Earthquake	Flood	Fire	Extreme Weather	Wind
Eastvale	Earth	Flood	Fire	Pipeline	Insect Infestation
Hemet	Earthquake	Pan Flu	Fire	Electrical Failure	Emerging / Re-emerging Diseases

Indian Wells	Earthquake	Flood	Extreme Weather	Power Failure	Wind
Indio	Earthquake	Extreme Weather	Emerging / Re-emerging Diseases	Pandemic	Drought
Jurupa Valley	Earthquake	Pan Flu	Fire	Power Failure	Emergency Disease
La Quinta	Earthquake	Flood	Power Failure	Extreme Weather	Drought
Lake Elsinore	Fire	Flood	Power Failure	Extreme Weather	Drought
Murrieta	Earthquake	Pan Flu	Fire	Power Failure	Emerging / Re-emerging Diseases
Norco	Flood	Fire	Earthquake	Extreme Weather	Agricultural Hazard
Palm Desert	Earthquake	Flood	Extreme Weather	Power Failure	Drought
Palm Springs	Earthquake	Power Failure	Transportation	Extreme Weather	Wind
Perris	Fire	Flood	Earthquake	HazMat	Power Failure
Rancho Mirage	Earthquake	Flood	Fire	Drought	Civil Unrest
Riverside	Earthquake	Flood	Drought	Terrorism	Fire
San Jacinto	Earthquake	Extreme Weather	Flood	Landslide	Drought
Temecula	Transportation	Earthquake	Flood	Terrorism	Fire
Wildomar	Earthquake	Fire	Drought	Flood	Extreme Weather
Tribes					
Morongo	Wildfire	Severe Wind Event	Earthquake	Electrical Failure	Transportation
Special Districts					
Eastern Municipal Water	N/A	N/A	N/A	N/A	N/A
High Valleys Water	Extreme Weather	Drought	Fire	Wind	Power Failure

Idyllwild Fire Protection	Fire	Drought	Insect Infestation	Earthquake	Pandemic
Imperial Irrigation District	Earthquake	Extreme Weather	Terrorism	N/A	N/A
Kaiser	Earthquake	Fire	Extreme Weather	Drought	Wind
Rancho California Water	Earthquake	Drought	Flood	Fire	N/A
Santa Ana Watershed	Earthquake	Wind	N/A	N/A	N/A
Western Municipal Water	Pipeline	Power	Extreme Weather	Drought	Wind
School Districts					
Beaumont Unified	Earthquake	Wind	Drought	Fire	Flood
Desert Sands Unified	Earthquake	Flood	Extreme Weather	HazMat	Drought
Hemet Unified	Civil Disorder	Extreme Weather	Wind	Flood	Fire
Lake Elsinore Unified	Earthquake	Pan Flu	Extreme Weather	Flood	Nuclear
Moreno Valley Unified	Earthquake	Fire	Extreme Weather	Power Failure	Wind
Perris Union High School	Earthquake	Fire	Wind	Pandemic	Flood
Riverside Community College	Insect Infestation	Jail/Prison Event	Civil Disorder	Nuclear	Terrorism
Riverside County Office of Education	Earthquake	Wildland Fire	Pandemic	Flood	Severe Wind
Riverside Unified	Earthquake	Power Failure	Pipeline	HazMat	Extreme Weather
San Jacinto Unified	Earthquake	Fire	Flood	Wind	Extreme Weather

Please refer to individual annexes for additional hazard priorities for participating jurisdictions.

5.3 Hazard Profiles and Descriptions

Hazard Assessment and Identification

The County utilized the tools described in Section 3.3 for the hazard identification process and provided them to participating cities and special districts. Cal OES MyPlan was used for information about floods, earthquake, fire, and some critical facilities locations.

All participating jurisdictions and districts conducted a risk assessment and identified hazards specific to their jurisdiction, document the impact of those hazards, and develop specific goals and strategies to address the risks and hazards.

The probability of each hazard in Riverside County was determined by rating their occurrence level from 0 - 4, in which each level or number represented a specific descriptor. For example, improbable = (0), remote = (1), occasional = (2), probable = (3), and frequent = (4). Each descriptor was defined according to how often each hazard occurs in Riverside County.

- Improbable means it is not likely to happen in more than ten years
- Remote means it happens once in ten years
- Occasional means it happens once in five years
- Probable means it happens once every two years (biannual)
- Frequent means it happens at least once a year (annually)

This rating scale was developed by the county and is based off the existing risk assessment process utilized for previous revisions of this plan. It was developed to interpret the standard probability assessment process discussed in section 5-4 of the FEMA Local Mitigation Planning Handbook (Version 2013) and met the needs of the OA jurisdictions participating in the MJLHMP update.

Identification of Hazards

Riverside County Operational Area is vulnerable to potential negative impacts from a broad range of hazards and threats due to its vast geography, mix of urban and rural areas, and rapidly growing populations. Below are three broad categories of hazards that threaten the OA:

- Natural hazards
- Technological hazards
- Human caused hazards

5.3.1 Earthquake

Severity: 4

Probability: 2

Location: OA Jurisdictions Affected by Earthquakes

- All incorporated cities of Riverside County
- Unincorporated areas of Riverside County

Hazard Definition

An earthquake is a sudden, rapid shaking of the ground caused by a sudden shift on a fault. For hundreds of millions of years, the forces of plate tectonics have shaped the Earth as the huge plates that form the Earth's surface move slowly over, under, and past each other. Sometimes the movement is gradual. At other times, the plates are locked together, unable to release the accumulating energy. When the accumulated energy grows strong enough, the plates break free causing the ground to shake. Most earthquakes occur at the boundaries where the plates meet; however, some earthquakes occur in the middle of plates.

Where earthquakes have struck before, they can strike again, often without warning. The major form of direct damage from most earthquakes is damage to building construction. Bridges are vulnerable to collapse and dam failure may generate major downstream flooding. Buildings vary in susceptibility depending on their construction and the types of soils on which they are built. Earthquakes destroy utility infrastructure which, in turn, may set off fires, hinder rescue efforts, and impact normal functions for an extended period. The hazard of earthquakes varies from place to place depending on the regional and local geology. Ground shaking may occur 65 miles or more from the epicenter (the point on the ground surface above the focus). Ground shaking can change the mechanical properties of some fine grained, saturated soils, where upon the soils liquefy and act as a fluid (liquefaction).

Most earthquake related injuries result from collapsing walls, flying glass, and falling objects resulting from shaking ground and structures.

Table 23: Historical Earthquakes in California - 5.0 and above that may have impacted Riverside County

Year	Richter Scale Magnitude	Location
1812	7.5	Wrightwood/ San Bernardino County
1812	7.2	Santa Barbara Channel/ Santa Barbara County
1857	7.9	Fort Tejon/ Kern County
1868	6.8	Hayward/ Alameda County
1872	7.4	Owens Valley/ Inyo County
1892	7.0	Laguna Salada/ Baja California
1892	6.4	Vacaville-Winters/ Solano County/ Yolo County
1899	5.7	Cajon Pass/ San Bernardino County
1899	6.5	San Jacinto/ Riverside County
1906	7.9	San Francisco/ San Francisco County
1910	6.0	Lake Elsinore/ Riverside County
1915	6.1	Imperial Valley/ El Centro/ Imperial County
1915	6.3	Imperial Valley/ El Centro/ Imperial County
1918	6.8	San Jacinto/ Riverside County
1923	7.1	Humboldt/ Humboldt County
1923	6.3	North San Jacinto/ Riverside County
1925	6.8	Santa Barbara/ Santa Barbara County
1927	7.1	Lompoc/ Santa Barbara County
1932	6.4	Eureka/ Humboldt County
1933	6.4	Long Beach/ Los Angeles County
1940	6.9	Imperial Valley/ Imperial County
1941	5.5	Santa Barbara/ Santa Barbara County
1942	6.6	Fish Creek Mountains/ San Diego County/ Imperial County
1947	6.5	Manix/ San Bernardino County
1948	6.0	Desert Hot Springs/ Riverside County
1952	7.5	Kern County
1954	6.4	Arroyo Salada/ Imperial County
1954	6.5	Eureka/ Humboldt County
1957	5.3	Daly City/ San Mateo County

1966	6.0	Parkfield/ Monterey County
1966	5.9	Truckee/ Nevada County
1968	6.5	Borrego Mountain/ San Diego County
1971	6.5	San Fernando/ Los Angeles County
1975	5.7	Oroville-Thermalito/ Butte County
1978	5.1	Santa Barbara/ Santa Barbara County
1979	5.7	Coyote Lake/ Santa Clara County
1979	6.4	Imperial Valley/ Imperial County
1980	5.5	Whitewash/ San Diego County
1980	6.0	Mammoth Lakes/ Mono County
1980	7.0	Humboldt/ Humboldt County
1983	6.7	Coalinga/ Fresno County
1984	6.2	Morgan Hill/ Santa Clara County
1986	5.6	North Palm Springs/ Riverside County
1986	5.4	Oceanside/ San Diego County
1986	6.5	Chalfant Valley/ Mono County
1987	5.9	Whittier Narrows/ Los Angeles County
1989	6.9	Loma Prieta/ Santa Clara County
1991	5.8	Sierra Madre/ Los Angeles County
1992	6.1	Joshua Tree/ San Bernardino County
1992	7.2	Cape Mendocino/ Humboldt County
1992	7.3	Landers/ San Bernardino County
1992	6.5	Big Bear/ San Bernardino County
1994	6.7	Northridge/ Los Angeles County
1995	5.4	Ridgecrest/ Kern County
1995	5.8	Ridgecrest/ Kern County
1996	5.3	Coso/ Inyo County
1998	5.4	San Juan Bautista/ San Benito County
1998	5.2	Redding/ Shasta County
1999	7.1	Mojave Desert/ Kern County
2000	5.0	Yountville/ Napa County
2001	5.5	Portola/ Plumas County
2003	6.5	San Simeon/ San Luis Obispo County

2004	6.0	Parkfield/ Monterey County
2007	5.6	Alum Rock/ Santa Clara County
2008	5.4	Chino Hills/ San Bernardino County
2010	6.5	Eureka/ Humboldt County
2010	7.2	Baja California/ Mexico
2012	5.4	Brawley/ Imperial County
2013	5.7	Canyondam/ Plumas County
2014	6.8	Ferndale/ Humboldt County
2014	5.1	La Habra/ Orange County
2014	6.0	American Canyon (South Napa)/ Napa County
2016	5.2	Borrego Springs/ San Diego County
2019	6.4	Ridgecrest/ Kern County
2019	7.1	Ridgecrest/ Kern County
2020	5.5	Searles Valley/ San Bernardino County
2020	5.8	Lone Pine/ Inyo County
2021	6.0	Antelope Valley/ Los Angeles County
2022	6.4	Ferndale/ Humboldt County

Source: https://www.earthquakeauthority.com/California-Earthquake-Risk/California-Earthquake-History-Timeline#recent-earthquakes-in-california

Probability of future events:

Located within Riverside County are several known active and potentially active earthquake faults, including the San Andreas Fault, San Jacinto Fault, and Elsinore Fault In the event of an earthquake, the location of the epicenter, as well as the time of day and season of the year, would have a profound effect on the number of deaths and casualties, as well as property damage.

Research organization, such as the California Institute of Technology Seismological Laboratory and the United States Geological Survey (USGS), are devoted to the detection and logging of earthquake events in Riverside County. Earthquakes represent the most destructive source of hazards, risk, and vulnerability, both in terms of recent state overall history and the probability of future destruction of greater magnitudes than previously recorded. The San Andreas, San Jacinto, and Elsinore Faults are all capable of producing significant earthquakes, with a magnitude of 6.7 or greater. The table below shows the probability of a major earthquake on these three faults within unincorporated Riverside

County by 2045, according to the Third California Earthquake Rupture Forecast. Other faults, both in and outside unincorporated Riverside County may also be capable of generating significant earthquakes with damaging effects.

Table 24: Chances of Significant Earthquakes on Major Faults in Riverside County

Fault	Mean Chance by 2045			
	M6.7 or greater	M7.0 or greater	M7.5 or greater	M8.0 or greater
San Andreas	24.21%	21.29%	11.62%	3.15%
San Jacinto	6.71%	6.43%	5.29%	2.75%
Elsinore	3.66%	1.82%	0.95%	<0.01%

Source: Third California Earthquake Rupture Forecast

Source:
https://planning.rctlma.org/Portals/14/genplan/2021/elements/Ch06_Safety_092821.pdf

Extent (Magnitude/Severity)

Catastrophic – For extent, the severity of an earthquake, or the amount of energy released during an earthquake is usually expressed in terms of intensity or magnitude as discussed below.

Intensity – Intensity represents the observed effects of ground shaking at any specified location and earthquake shaking decreases with distance from the epicenter of the earthquake. Intensity is an expression of the amount of shaking at any given location on the ground surface based on felt or observed effects, Seismic shaking is typically the greatest cause of losses to structures during earthquakes. Intensity is measured with the Modified Mercalli Intensity (MMI) scale. The intensity of ground shaking at any site or structure is a function of several factors such as:

1) magnitude of earthquake
2) distance from the epicenter
3) duration of strong ground motion
4) local geologic conditions
5) fundamental period of structure

A brief description of those factors and the MMI scale are summarized below along with the effects associated with the MMI scale. Damage typically occurs in MMI of scale VII or above.

Table 25: Earthquake Magnitude, Intensity Measurements, and Intensity Characteristics

Magnitude	Mercalli Intensity	Effects	Frequency
Less than 2.0	I	Microearthquakes, not felt or rarely felt; recorded by seismographs.	Continual
2.0-2.9	I to II	Felt slightly by some people, damages to buildings.	Over 1M per year
3.0-3.9	II to IV	Often felt by people; rarely causes damage; shaking of indoor objects noticeable.	Over 100,000 per year
4.0-4.9	IV to VI	Noticeable shaking of indoor objects and rattling noises; felt by most people in the affected area; slightly felt outside; generally, no to minimal damage.	10K to 15K per year
5.0-5.9	VI to VIII	Can cause damage of varying severity to poorly constructed buildings; at most, none to slight damage to all other buildings. Felt by everyone.	1K to 1,500 per year
6.0-6.9	VII to X	Damage to a moderate number of well-built structures in populated areas; earthquake-resistant structures survive with slight to moderate damage; poorly designed structures receive moderate to severe damage; felt in wider areas; up to hundreds of miles/kilometers from the epicenter; strong to violent shaking in epicentral area.	100 to 150 per year
7.0-7.9	VIII<	Causes damage to most buildings, some to partially or completely collapse or receive severe damage; well-designed structures are likely to receive damage; felt across great distances with major damage mostly limited to 250 km from epicenter.	10 to 20 per year
8.0-8.9	VIII<	Major damage to buildings, structures likely to be destroyed; will cause moderate to heavy damage to sturdy or earthquake-resistant buildings; damaging in large areas; felt in extremely large regions.	One per year 10 – 50 years

Source: USGS

Magnitude – Magnitude represents the amount of seismic energy released at the hypocenter of an earthquake. It is based on the amplitude of the earthquake waves recorded. Seismologists have developed several magnitude scales; one of the first was the Richter Scale, developed in 1932 by the late Dr. Charles F. Richter of the California Institute of Technology. The Richter Scale is numeric and has a logarithmic relationship between scale factors, so that a difference of one scale number represents a tenfold increase in measured amplitude, which in turn corresponds to an approximate 31x energy release difference when compared to the next whole number value. The Moment Magnitude scale (Mw, or M), which is a measurement of energy released by the movement of a fault and is the modern method used by seismologists to measure earthquakes. Overall, as the amount of energy released by an earthquake increases, the potential for ground shaking impacts also increases.

Distance from Epicenter – Earthquake energy generally dissipates (or attenuates) with distance from a fault. Over long distances, this loss of energy can be significant, resulting in a significant decrease in ground shaking with increased distance from the epicenter.

Duration of Strong Shaking – The duration of the strong ground shaking constitutes a major role in determining the amount of structural damage and the potential for ground failure that can result from an earthquake. Larger magnitude earthquakes have longer durations than smaller earthquakes.

Local Geologic Conditions – The geologic and soil conditions at a particular site have the potential to substantially increase the effects of ground shaking. The thickness, density, and consistency of the soil, as well as shallow ground water levels, have the potential to amplify the effects of ground shaking depending on the characteristics of the earthquake. In general, the presence of unconsolidated soils above the bedrock surface can amplify the ground shaking caused by an earthquake.

Fundamental Periods – Every structure has its own fundamental period or natural vibration. If the vibration of ground shaking coincides with the natural vibration period of a structure, damage to the structure can be greatly increased. The extent of damage suffered during an earthquake can also depend on non-geologic factors. The type of building and its structural integrity will influence the severity of the damage suffered. Generally, small, well-constructed, one- and two-story wood and steel frame buildings have performed well in earthquakes because of their light weight and flexibility. Reinforced concrete structures will also usually perform well. Buildings constructed from non-flexible materials, such as unreinforced brick and concrete, hollow concrete block, clay tile, or adobe, are more vulnerable to earthquake damage.

Effects of Ground Shaking – The primary effect of ground shaking is the damage or destruction of buildings, infrastructure, and possible injury or loss of life. Building damage can range from minor cracking of plaster to total collapse. Disruption of infrastructure facilities can include damage to utilities, pipelines, roads, and bridges. Ruptured gas and water lines can result in fire and produce scour/inundation damage, respectively, to structures, as can fire from other causes, such as electrical damages. Secondary effects can include geologic impacts such as co-seismic fault movement along nearby faults, seismically induced slope instability, liquefaction, lateral spreading, and other forms of ground failure and seismic response.

As identified previously the determinants of that damage will occur following an earthquake depend on multiple variables, such as: the infrastructure's distance from the epicenter, type of soil, building construction, etc. Research indicates that damage usually does not occur unless an earthquake magnitude is somewhere above 4 or 5. Earthquake magnitude is the size measured in amplitude on a seismograph. The intensity is a measure of the shaking and damaged which varies based on distance from the epicenter, type of surface material, and other factors. A magnitude above 5.3 is considered a moderate earthquake, and a magnitude above 6.3 is considered a strong earthquake.

A moderate earthquake occurring in or near Riverside County could result in deaths, casualties, property damage, environmental damage, and disruption of normal

government and community services. The effects could be aggravated by collateral emergencies such as fires, flooding, hazardous material spills, utility disruptions, landslides, transportation emergencies, and the possible failure of dams in Riverside County. The community needs would most likely exceed the response capability of the County's first responder and emergency management organizations, requiring mutual assistance from volunteer and private agencies, the California Office of Emergency Services (Cal OES), and the Federal Emergency Support Functions.

A strong earthquake can be catastrophic for Riverside County and could cause thousands of casualties, property damage, disruption in communications and utility systems, disruption in supply and distribution systems, and general panic. An earthquake of this magnitude could directly affect all Riverside County and most of Southern California, causing a critical demand on mutual aid resources and competition for relief support.

Source:https://www.usgs.gov/faqs/what-magnitude-does-damage-begin-occur-earthquake#:~:text=There%20is%20not%20one%20magnitude,somewhere%20above%204%20or%205)

Key effects and response considerations:

- **Effects on people and housing.** In the event of an earthquake, the primary consideration is saving lives. Time and effort must also provide for mental health, reuniting families, shelters, and restoring basic needs and basic services. Major efforts will be required to remove debris and clear roadways, demolish unsafe structures, assist in re-establishing public services and utilities, provide continuing care and temporary housing for affected citizens.
  Local government emergency plans indicate that although there is a general capacity to respond to injuries and damage caused by minor to moderate earthquakes, it is unlikely that local agencies will be able to cope with the immediate impact of a strong earthquake. The public must realize the assistance they have been accustomed to expecting will not be immediately available.

  The damage caused by earthquakes can affect all aspects of a community, from government services to private enterprise to civic activities. These events:
  Severely restrict or overwhelm our response resources, communications, transportation, and utilities; and
  Leave many individuals and neighborhoods cut off from outside support. Damaged roads and disrupted communications systems may restrict the access of emergency response agencies into critically affected areas. Thus, for the initial period

immediately following a disaster—often up to three days or longer—individuals, households, and neighborhoods may need to rely on their own resources for food, water, shelter, and first aid.
Individual preparedness, planning, survival skills, and mutual aid within neighborhoods and worksites during this initial period are essential measures in managing in the aftermath of a disaster. Actions taken in advance will impact the quality of survival and ability to help others safely and effectively. Learning about community hazards, community plans, understanding hazard-specific protective actions, assembling important emergency supplies, and mitigating potential hazards in the home are all essential emergency preparedness activities that citizens can take. In the event of a major earthquake citizens must be prepared to wait for up to 72 hours or more for any type of organized response.

Source:
https://www.ready.gov/sites/default/files/2019.CERT_.Basic_.PM_FINAL_508c.pdf

Impacts on population: Table 24 provides a summary of HAZUS Estimated Impacts on Riverside County. That summary identifies over 19,000 households that could be displaces and over 25,000 homes that could be in a complete damage state. This would require large scale mass care and sheltering services. Loss of utility service would have major impacts on the people in the County. Table 24 noted that 99% of all households could be without water.

Social Vulnerability: Populations most vulnerable to earthquake hazards would be those that rely on specific services or electrical power, which may not be available during or after an earthquake, or those which are homeless, would have a difficult time evacuating due to age or disability, cannot communicate easily due to speaking English less than well, for example.

Effects on commercial and industrial structures. After any earthquake, individuals are likely to lose wages due to the inability of businesses to function because of damaged goods, facilities and/or infrastructure. With business losses, the County of Riverside and the cities in the Riverside County Operational Area will lose revenue. Economic recovery from damaging earthquakes will be critical to the communities involved. If essential services are not restored, many businesses could close. About 25 percent of businesses do not reopen after disasters. Having an emergency disaster plan and a continuity of operations plan in place can reduce that risk and help the business recover faster.

Source**:**https://www.fema.gov/press-release/20210318/stay-business-after-disaster-planning-ahead

- **Effects on infrastructure.** The damage caused by an earthquake can lead to affecting the availability of law enforcement, fire service, and other essential governmental services. Additionally, impacts to water, gas, communication, and electrical services could be interrupted for residents in the OA leaving essential services to be unavailable until alternative options can be provided. Much of the roadways and freeways experience damage, leading to traffic gridlock.

- **Effects on Critical Facilities.** Many critical facilities have been identified as being adjacent to the various faults in the County which includes hospitals, fire stations, law enforcement facilities, and schools. Depending on the location of the earthquake epicenter, facilities that are not seismically retrofitted or built to sufficient earthquake resilience standards could potentially be damaged beyond reasonable repair forcing services to be relocated or have services suspended.

- **Effects on agriculture.** Earthquakes can cause loss of human life, loss of animal life, and property damage to structures and land dedicated to agricultural uses. The most significant long-term impacts on agriculture from earthquakes are those that arise from the cascading effects of fire and flood.

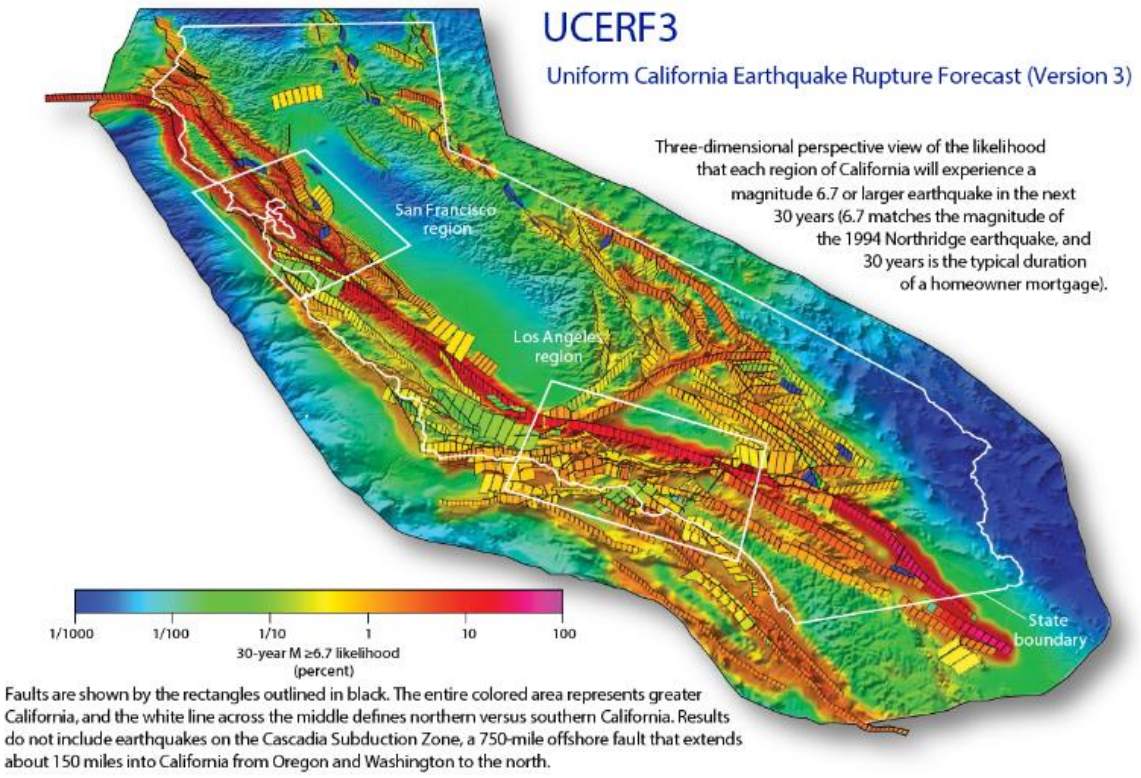
Note: Please refer to Section 4.4 Critical Facilities for additional maps.

Historically, the San Andreas Fault is the most active among the fault network that cuts through rocks of the California coastal region. The entire San Andreas Fault system is more than 800 miles long and extends to depths of at least 10 miles below the earth's crust. The San Andreas Fault in California forms a continuous, narrow break in the earth's crust that extends from northern California southward to the Cajon Pass near San Bernardino City. Several branching faults, including the San Jacinto and Banning faults, share the movement of the crustal plates as the fault continues southeast to the Salton Sea and to Baja California Sea of Cortez.

Studies of the San Andreas near San Gorgonio Pass reveal that this area is more advanced in the cycle of strain accumulation than the western area at the Cajon Pass. Earthquake activity around the Southern San Andreas, including the June 1992 Landers-Big Bear earthquakes, had previously prompted scientists to increase their studies of this area.

The San Jacinto fault has had a higher level of moderate to strong earthquakes during the past 50 to 100 years, although the slip rate is not as high. Geodetic data indicates an appreciable strain accumulation across both faults, implying that either one may be primed for release. The Casa Loma Fault is one of the larger and more active fault segments of the San Jacinto fault. It extends from near the Perris Reservoir to just north of the community of Anza. Clark Fault is another large and active segment which extends near Hemet to just nine (9) miles southwest of the shore of the Salton Sea. This section of the San Jacinto Fault produced a series of large earthquakes starting in 1899 on average every 14 years, with the longest interval being 19 years. In 2015, the Working Group on California Earthquake Probabilities (WGCEP) estimated 30-year probabilities of 19 percent for an M 6.7 and larger event on the Southern San Jacinto Fault.

Map 9: Uniform California Earthquake Rupture Forecast (UCERF3)



Source: http://wgcep.org/UCERF3

Date retrieved from the internet: October 2022

A third major fault zone that traverses Riverside County is the Elsinore Fault. The Elsinore Fault Zone is one of the largest in southern California. The main trace of the Elsinore fault zone has only seen one historical event greater than magnitude 5.2 – the earthquake of 1910 which had a magnitude 6.0 and erupted near Temescal Valley.

Risk Assessment Conclusion

Riverside County is at risk for significant earthquakes causing catastrophic damage and strains on response and mitigation resources. Both property and human life are at high risk. The County experiences hundreds of minor quakes each month from the faults in the area. Studies indicate that stress is building up in major faults like the San Andreas. A major quake could happen at any time.

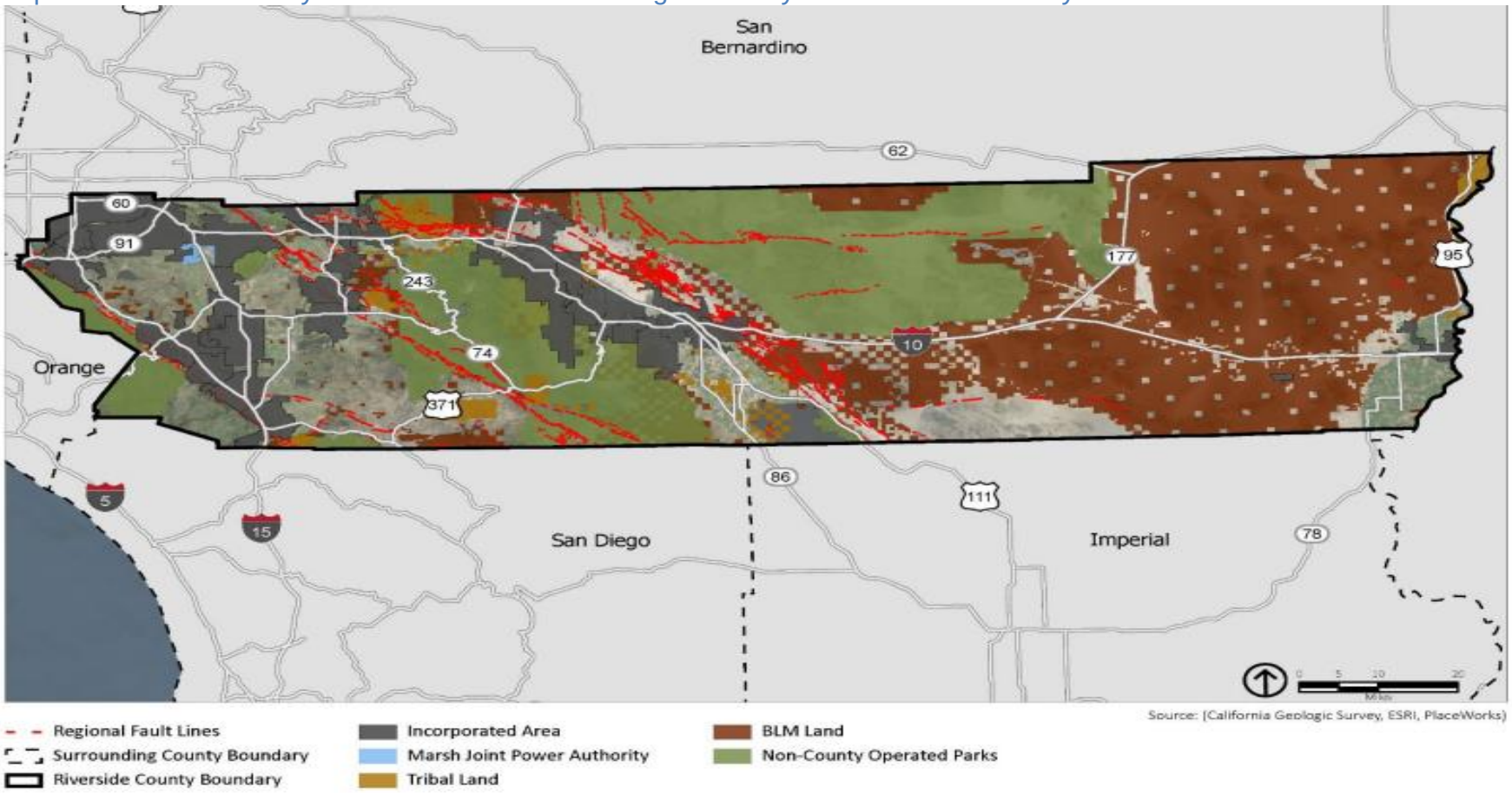
Earthquake risk is very high in Riverside County's most heavily populated western region and in the Coachella Valley, due to the presence of two of California's most active faults: the San Andreas Fault and San Jacinto Fault. The risk is also high in Riverside County's less populated region east of the Coachella Valley.

All scenarios reviewed of a strong earthquake rated at a 7.0 or higher within the OA could have devastating effects overall, leaving emergency response capabilities overwhelmed with service requests, downtime of essential community services for extended periods, deaths, injuries, and mass displacement of community members.

The maps below provide additional context to the potential hazard earthquakes can be to the OA. The maps have been developed using the following sources of information:

- Cal OES MyPlan website
- USGS Quaternary Faults website
- 2021 Riverside County General Plan - Safety Element

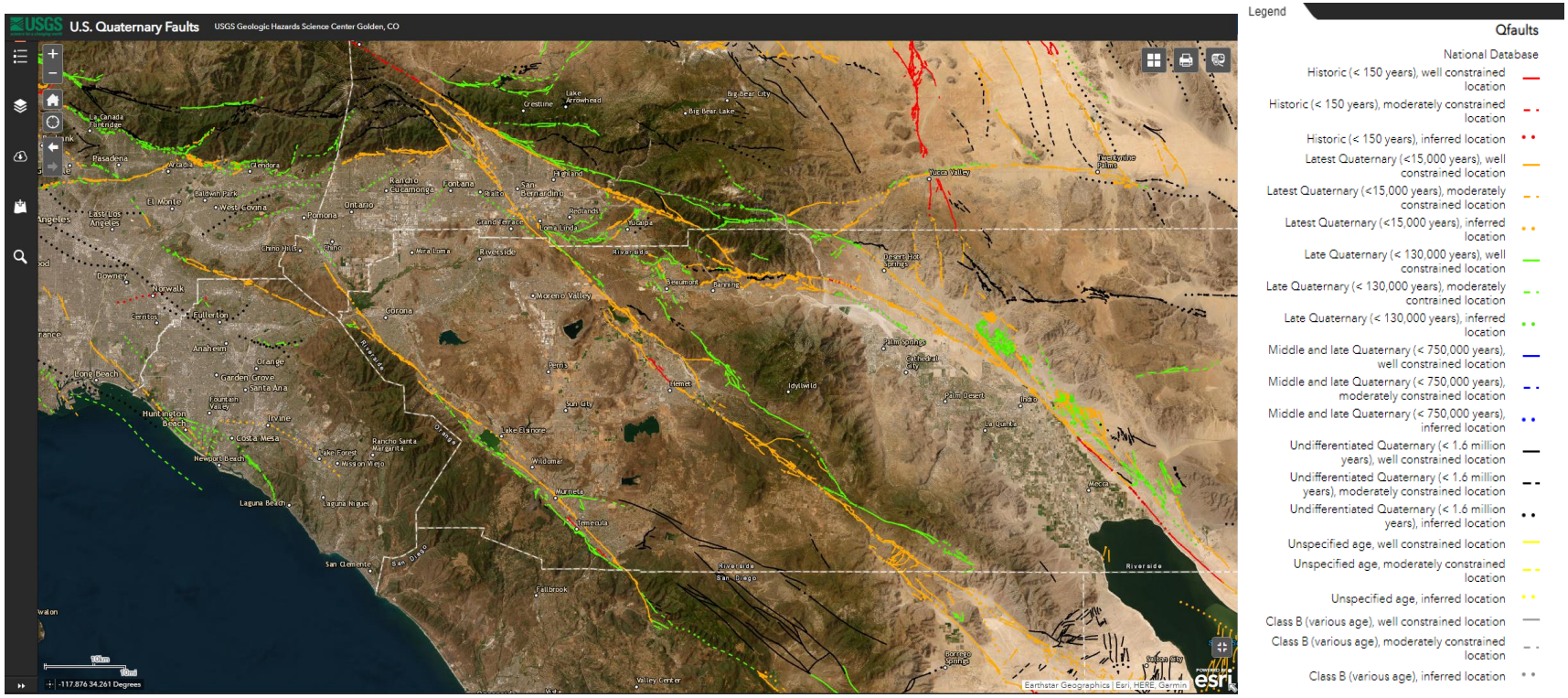
Map 10: Riverside County Faults and Zones According to County General Plan – Safety Element



Source: https://planning.rctlma.org/Portals/14/genplan/2021/elements/Ch06_Safety_092821.pdf

Retrieved from the internet on: December 2022

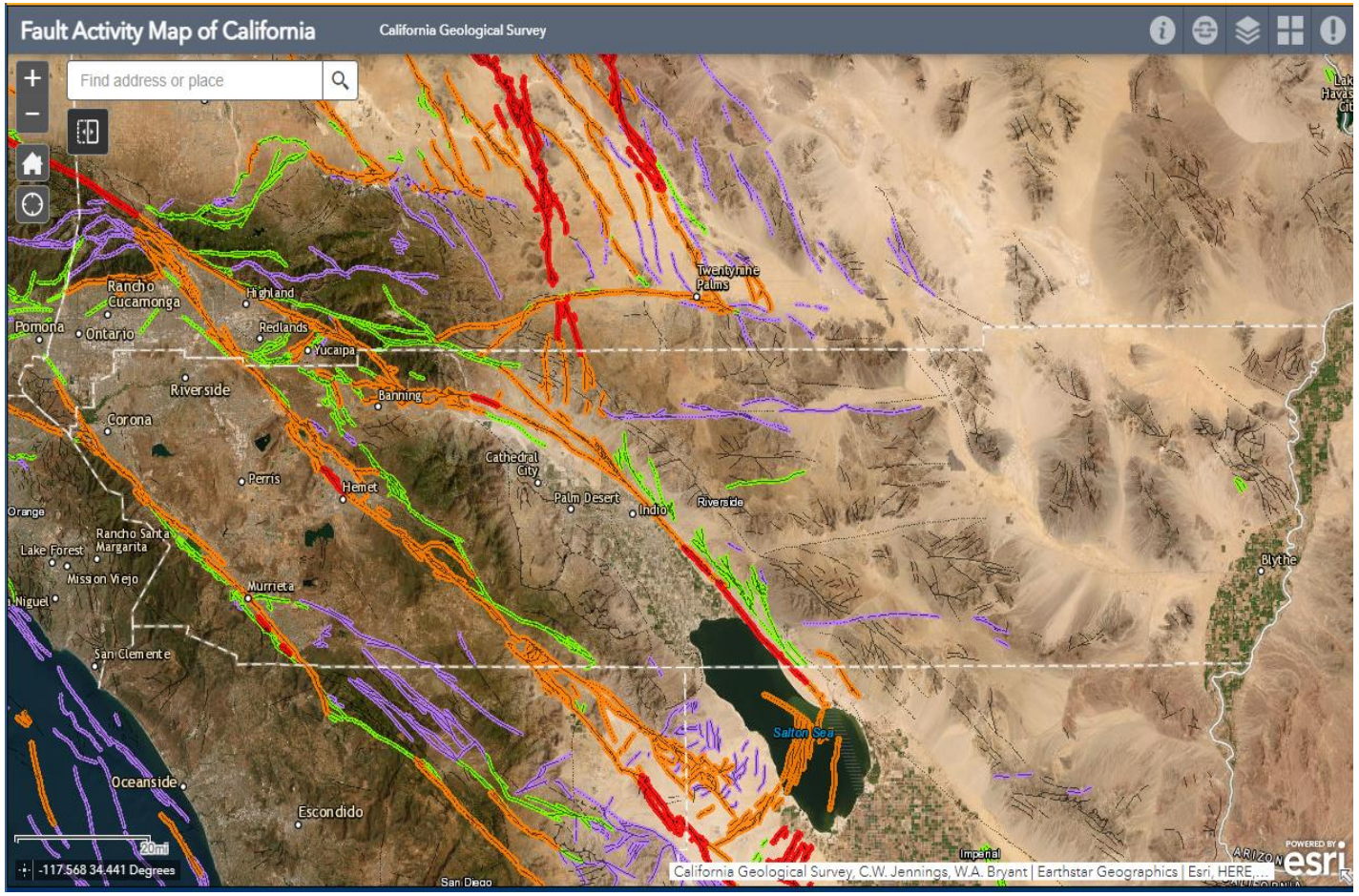
Map 11: Riverside County Faults and Zones



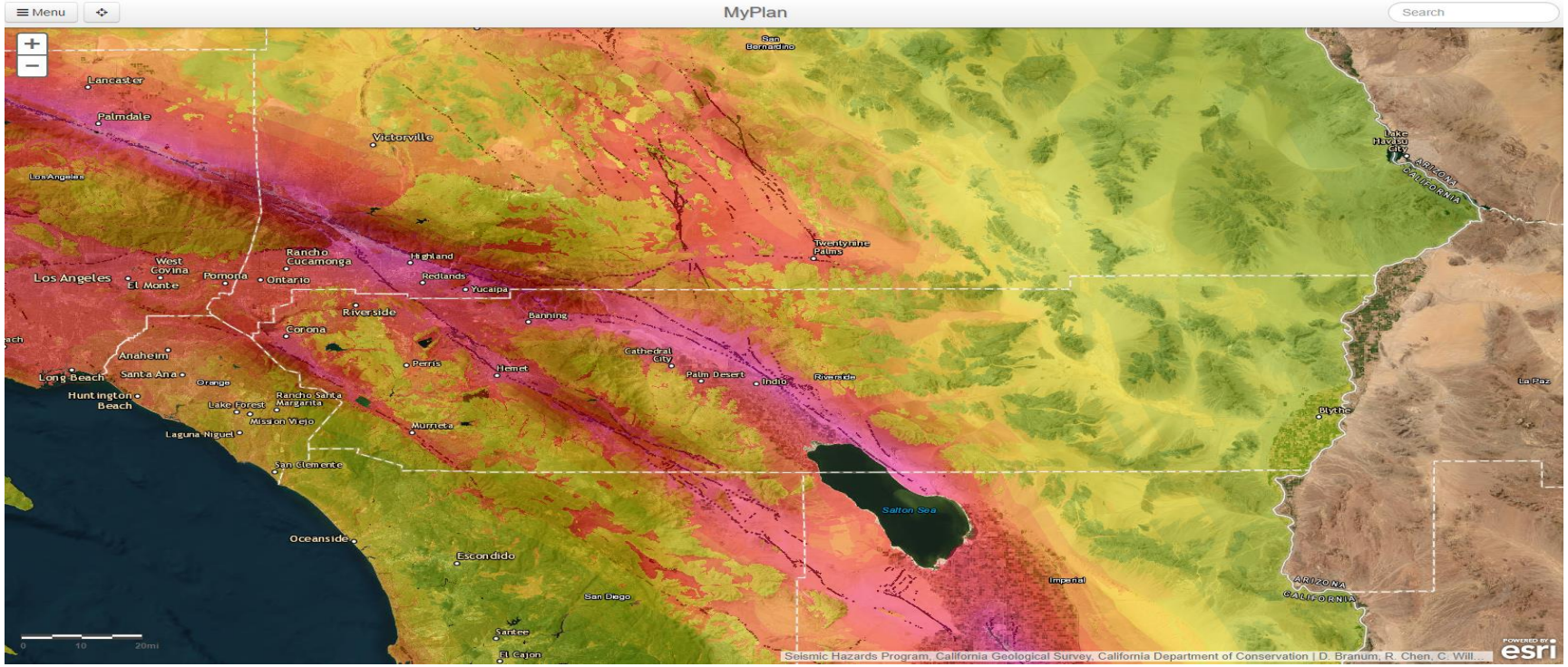
Source: https://usgs.maps.arcgis.com/apps/webappviewer/index.html?id=5a6038b3a1684561a9b0aadf88412fcf

Retrieved from the internet on: December 20, 2022

Map 12: Fault Activity



Map 13: Ground Shaking Potential



The map provided above shows ground shaking potential from earthquakes within Riverside County and depicts expected intermediate periods (1s or 1hz) ground motions with 2% exceedance probability in 50 years. The colors change according to the maximum (peak) intensity of shaking (amplitude of the ground motion). As the shaking at a location progresses from no shaking (green), moderate (yellow), and strong shaking (pink), peaking at a violent shaking level (purple).

Source: https://maps.conservation.ca.gov/cgs/fam/ Retrieved from the internet on: December 20, 2022

Source: https://myplan.caloes.ca.gov/ Retrieved from the internet on: December 20, 2022

Relationship to Other Hazards – Cascading Effects

Earthquakes can cause many cascading effects such as fires, flooding, hazardous material spills, utility disruptions, landslides, transportation emergencies, electrical failure, and failure of dams in Riverside County.

HAZUS Assessment

The HAZUS Loss Library and previously generated scenarios were used to compile general building stock and loss estimates with available earthquake hazard scenarios. Several scenarios around a large earthquake occurring in the OA were used in the assessment. The scenario chosen for analysis were a M7.1 San Andreas Fault Scenario Earthquake centered in the Coachella Valley, and two M7.8 "Shakeout" Scenarios on the Southern San Andreas Fault centered in western Riverside County. One M7.8 "Shakeout" Scenario San Andreas report was generated in 2008 and another was generated in 2021.

The MJLHMP planning team did not have the capability to produce its own custom HAZUS reports for the 2023 plan update. The team leveraged the most recent and available prebuilt scenarios in the FEMA HAZUS Loss Library in conjunction with the M7.8 "Shakeout" Scenario from 2008 to understand impacts. While the 2021 generated data utilized a baseline inventory, it did not provide additional information for essential facilities, transportation, and utility systems. The planning team decided upon review of the 2008 "Shakeout" scenario that the previous data relating the scenario that wasn't addressed in the new modeling should be kept in the assessment. These dated scenario details provide an understanding of potential impacts with an assumption that the impacts stated in the 2008 "Shakeout" Scenario will be exacerbated if they were modeled for today's community profile.

Risk assessment results leveraged from the HAZUS -MH analysis included:

- **General Buildings**
  - Ground Motion
  - Damage State Probabilities
  - Damage
  - Direct Economic Loss
- **Essential Facilities**
  - Medical Care
  - Police Stations
  - Fire Stations
  - Emergency Response
  - Schools

- **Transportation Systems**
  - Highways
  - Railways
  - Light Rail
  - Bus System
  - Port and Harbor
  - Ferry System
  - Airport Transportation
- **Utility Systems**
  - Potable Water
  - Wastewater
  - Oil
  - Natural Gas
  - Electric Power
  - Communication
- **Induced Physical Damage**
  - Fire following
  - Debris
- **Direct Social Losses**
  - Casualties
  - Shelter

Tables 26 (ES-2) and Table 27 provide a summary of HAZUS-MH-estimated impacts for Riverside County for the earthquake scenarios reviewed by the MJLHMP Planning Team. As shown in the table 18.0, the total estimated direct economic loss related to building damage could reach $9.8B in the 2008 “Shakeout” scenario events. The 2021 scenarios showed that a M7.8 along San Andreas Fault in Western Riverside County present day could have an economic loss as high as $12.5 Billion and a M7.1 along the San Andreas fault centered in Coachella could have an economic loss $3.88 Billion. It should be noted that these totals are for Riverside County only. The earthquake scenarios have the potential to cause additional damage in adjacent counties as referenced in Tables 26 and 27.

Table 26: Summary of HAZUS Estimated Impacts on Riverside County for the Earthquake Scenario from 2008

(Table ES-2)

Impact Category	(2008) M 7.8 "Shakeout" San Andreas
Economic loss due to building damage	$6.9 Billion
Total building-related direct economic loss	$9.8 Billion
Number of buildings in complete damage state	25,000*
Debris generated (million tons)	3.5
Displaced households	19,000 Households*
People needing short-term shelter	8,600 People*
Fatalities (2am, 2 pm, 5 pm)	60 buildings (70 all causes) *
Total injuries (2 am, 2 pm, 5 pm)	11,600 buildings (11,900 all causes) *
Percentage of households without water	99%
Number of highway bridges with at least moderate damage (potentially closed)	100

*Note: selected custom estimates for the "Shakeout" scenario have been taken from the full USGS technical report, "The Shakeout Scenario". https://pubs.usgs.gov/of/2008/1150/

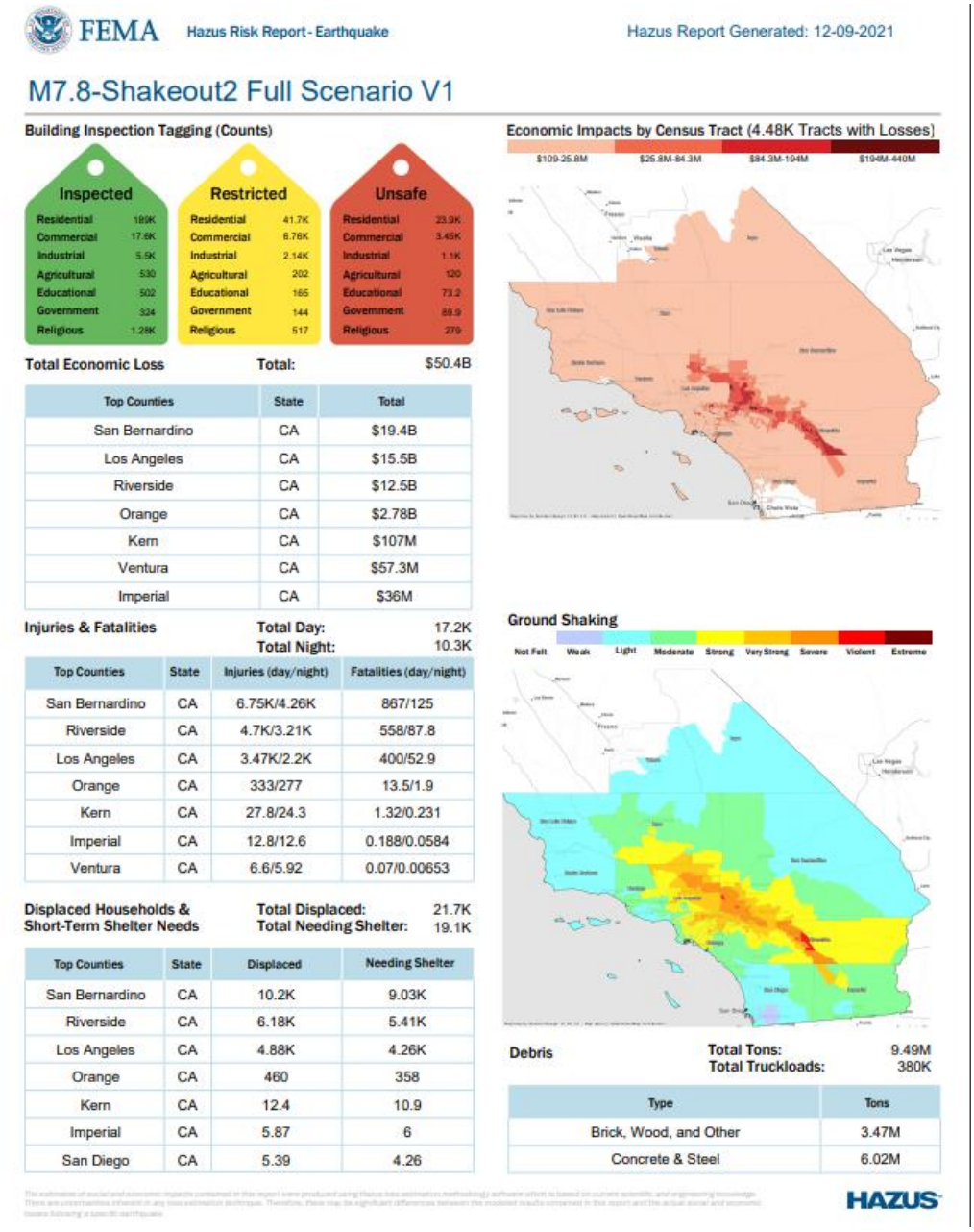
Tables 26 and 27 summarize expected essential facility impacts in the 2008 “Shakeout” earthquake events. Estimated building damages to essential facilities in Riverside County ranges could exceed $351 Million. These loss totals should not be considered all-inclusive, as replacement cost data was unavailable for many hospitals, and a small number of schools, and police facilities at the time this scenario data was utilized. While this data is from 2008, it allows our planning team to understand the potential severity of a larger earthquake impacting the essential facilities.

Table 27: Summary of HAZUS – Estimated Impacts for Riverside County Essential Facilities in Two Earthquake Scenarios

Essential Facility	Category	(2008) M7.8 "Shakeout" San Andreas	
		Mean Damage	Economic Loss ($1,000)
Hospitals	Medium	14%	$3,842
	Large	26%	$5,180
Schools	K-12 (default data)	2%	$3,708
	K-12 (providing data)	6%	$314,182
	CCD (providing data)	5%	$24,465
EOCs		6%	$20
Police Stations		7%	$35
Fire Stations		4%	$14
Total			$351,446

*Note: In Riverside County at the time of this assessment, there are no hospitals which would be categorized by HAZUS as "Small" (<50 licensed acute care beds)

Figure 18: Summary of HAZUS – estimated Impacts for Riverside County in 2021 7.8 Shakeout Full Scenario



FEMA Hazus Risk Report - Earthquake

Hazus Report Generated: 12-09-2021

M7.8-Shakeout2 Full Scenario V1

Building Inspection Tagging (Counts)

Inspected		Restricted		Unsafe	
Residential	189K	Residential	41.7K	Residential	23.9K
Commercial	17.6K	Commercial	6.76K	Commercial	3.45K
Industrial	5.5K	Industrial	2.14K	Industrial	1.1K
Agricultural	530	Agricultural	202	Agricultural	120
Educational	502	Educational	165	Educational	73.2
Government	324	Government	144	Government	89.9
Religious	1.28K	Religious	517	Religious	279

Total Economic Loss **Total:** $50.4B

Top Counties	State	Total
San Bernardino	CA	$19.4B
Los Angeles	CA	$15.5B
Riverside	CA	$12.5B
Orange	CA	$2.78B
Kern	CA	$107M
Ventura	CA	$57.3M
Imperial	CA	$36M

Injuries & Fatalities **Total Day:** 17.2K **Total Night:** 10.3K

Top Counties	State	Injuries (day/night)	Fatalities (day/night)
San Bernardino	CA	6.75K/4.26K	867/125
Riverside	CA	4.7K/3.21K	558/87.8
Los Angeles	CA	3.47K/2.2K	400/52.9
Orange	CA	333/277	13.5/1.9
Kern	CA	27.8/24.3	1.32/0.231
Imperial	CA	12.8/12.6	0.188/0.0584
Ventura	CA	6.6/5.92	0.07/0.00653

Displaced Households & Short-Term Shelter Needs **Total Displaced:** 21.7K **Total Needing Shelter:** 19.1K

Top Counties	State	Displaced	Needing Shelter
San Bernardino	CA	10.2K	9.03K
Riverside	CA	6.18K	5.41K
Los Angeles	CA	4.88K	4.26K
Orange	CA	460	358
Kern	CA	12.4	10.9
Imperial	CA	5.87	6
San Diego	CA	5.39	4.26

Economic Impacts by Census Tract (4.48K Tracts with Losses)

$109-25.8M $25.8M-84.3M $84.3M-194M $194M-440M

Ground Shaking

Not Felt Weak Light Moderate Strong Very Strong Severe Violent Extreme

Debris **Total Tons:** 9.49M **Total Truckloads:** 380K

Type	Tons
Brick, Wood, and Other	3.47M
Concrete & Steel	6.02M

HAZUS

Figure 19: Summary of HAZUS – estimated Impacts for Riverside in 2021 7.1 San Andreas (Coachella) Scenario

FEMA Hazus Risk Report- Earthquake — Hazus Report Generated: 12-08-2021

M7.1-San Andreas (Coachella) Rev V10

Building Inspection Tagging (Counts)

Inspected		Restricted		Unsafe	
Residential	27.6K	Residential	6.46K	Residential	2.44K
Commercial	1.48K	Commercial	489	Commercial	172
Industrial	392	Industrial	130	Industrial	48.4
Agricultural	84.5	Agricultural	27.4	Agricultural	11.4
Educational	37.5	Educational	11.2	Educational	3.91
Government	28.3	Government	11.7	Government	6.04
Religious	99.6	Religious	34.3	Religious	13.5

Total Economic Loss **Total:** $4.23B

Top Counties	State	Total
Riverside	CA	$3.88B
Imperial	CA	$121M
San Bernardino	CA	$117M
Orange	CA	$64.1M
San Diego	CA	$44.4M
Los Angeles	CA	$6.46M
-	-	-

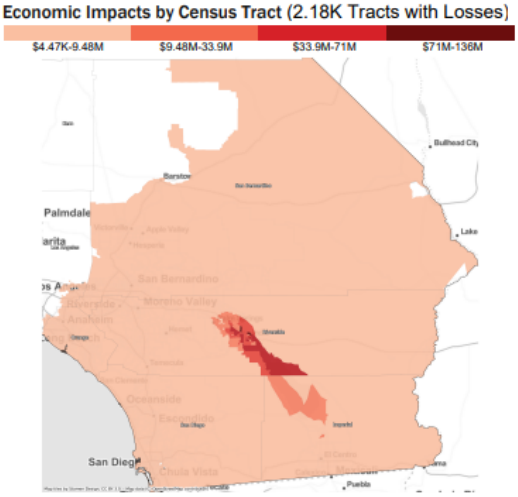
Injuries & Fatalities **Total Day:** 1.33K **Total Night:** 946

Top Counties	State	Injuries (day/night)	Fatalities (day/night)
Riverside	CA	1.15K/861	109/18.6
Imperial	CA	33.9/32.3	0.613/0.165
San Bernardino	CA	18.8/17.7	0.129/0.0186
Orange	CA	9.05/8.45	0.0218/0.0061
San Diego	CA	6.97/6.61	0.0111/0.00283
Los Angeles	CA	1.04/0.965	0.000577/0.000112
-	-	-	-

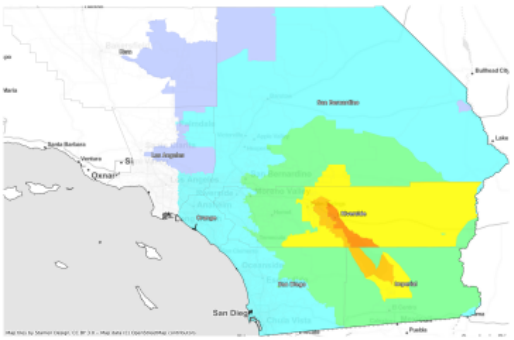
Displaced Households & Short-Term Shelter Needs **Total Displaced:** 1.66K **Total Needing Shelter:** 1.53K

Top Counties	State	Displaced	Needing Shelter
Riverside	CA	1.6K	1.47K
Imperial	CA	28.5	31
San Bernardino	CA	14.8	12.3
Orange	CA	10.4	7.78
San Diego	CA	7.3	5.14
Los Angeles	CA	0.654	0.563
-	-	-	-

Economic Impacts by Census Tract (2.18K Tracts with Losses)



Ground Shaking



Debris **Total Tons:** 777K **Total Truckloads:** 31.1K

Type	Tons
Brick, Wood, and Other	366K
Concrete & Steel	411K

The estimates of social and economic impacts contained in this report were produced using Hazus loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social and economic losses following a specific earthquake.

HAZUS

7.1 San Andreas (Coachella) Earthquake Scenario –OA Impacts

The 7.1 San Andreas (Coachella) scenario will impact the eastern most communities and infrastructure of Riverside County. A summary of the regional impacts is provided in Table 17.2. The MJLHMP Planning team leveraged the scenario and extracted data from census tracks within Riverside County to understand the OA impacts. These impacts are described below:

Of the 686,260 households modeled within the OA specific scenario data, up to 65,095 households could be affected, up to 6,799 homes could have major damage and up to 2,668 homes could be destroyed. The Major Damage and homes destroyed could be considered “red tagged” or unsafe for continued occupancy.

With displaced households, we could see up to 1,597 displaced households and up to 1,474 households would need shelter assistance.

As much as 328,400 tons of brick, wood, and other “light” debris and up to 380,277 tons of concrete and steel “heavy” debris may result from damaged buildings totaling 708,717 tons that would need to be removed in accordance with applicable debris removal standards.

The number of people killed because of the scenario damage is expected to be as high as 127 people. Total injuries are expected to be as high as 1,945 individuals.

The economic loss as stated previously could be as high as $3.8 billion.

2008 “Shakeout” San Andreas Earthquake Scenario OA Impacts

The M7.8 “Shakeout” San Andreas scenario earthquake from 2008 shows that an earthquake of this magnitude will impact most of the populated portions of Riverside County. A summary of impacts is provided in Table 26. It should be noted that impact estimates have been taken from the improved estimates developed by the extensive community modeling effort (Jones, et al., 2008) conducted for the “Shakeout” exercise. The use of these estimates is noted where appropriate due to lack of updated modeling available to the MJLHMP planning team at the time of 2023 plan update.

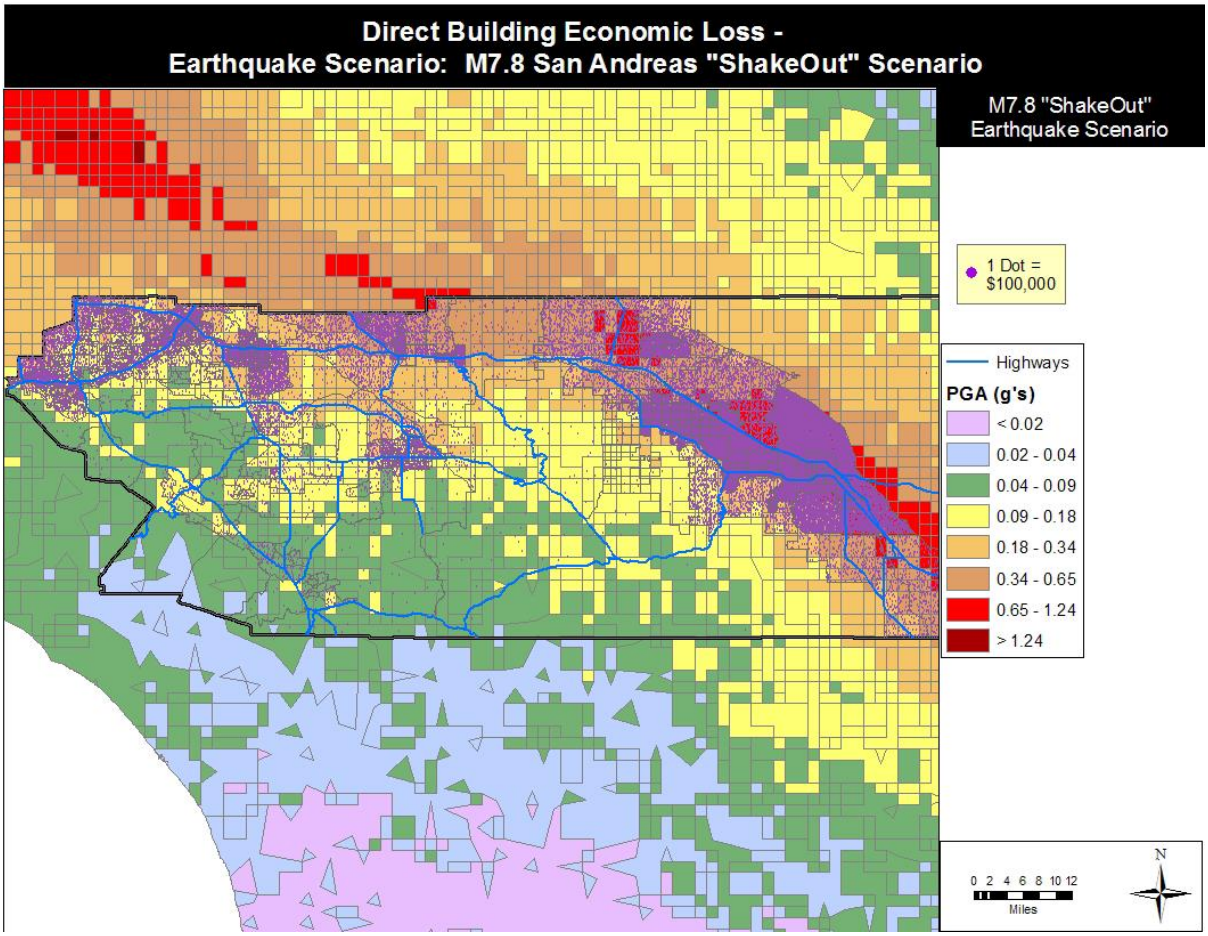
Table 28: Summary of HAZUS – Estimated Impacts for Riverside County Due to an M7.8 Scenario Earthquake on the Shakeout San Andreas Fault

Economic Loss due to Building Damage Total Building-related Direct Economic Loss	$6.9 B $9.8 B
# Buildings in Complete Damage State	25,000* (many MH)
Debris Generated (million tons)	3.5
Displaced Households People Needing Short-term Shelter	19,000 Households* 8,600 People*
Fatalities (2 am, 2 pm, 5 pm) Total Injuries (2 am, 2 pm, 5 pm)	60 in buildings (70 all causes)* 11,600 in buildings (11,900 all)*
% of Households without Water	99%
# Highway Bridges w/ at least Moderate Damage (potentially closed)	100

Source http://pubs.usqs.gov/of/2008/1150

In the M7.8 “Shakeout” Scenario earthquake on the San Andreas Fault, dollar losses related to the shaking-induced building damage are estimated to reach $6.9 billion, while total direct economic losses are expected to be approximately $9.8 billion.

Figure 20: Direct Economic Loss in Riverside County Resulting from an M7.8 Scenario Earthquake on the "Shakeout" San Andreas Fault



According to the published "Shakeout" scenario (Jones, et al., 2008), approximately 25,000 buildings would be expected to suffer "Complete" damage in the scenario earthquake. These buildings, predominantly residential mobile homes, would be considered "red-tagged" or unsafe for continued occupancy. A small percentage of these buildings (15% or less) have the potential for collapse, suggesting the need for Urban Search & Rescue. More than 18,000 buildings are expected to suffer "Extensive" damage in this scenario earthquake and would be considered "yellow-tagged", with restrictions on continued use. While the remainder of buildings would be considered "green-tagged" (safe for occupancy, although some damage may have occurred), approximately 63,000 would be expected to suffer "Moderate" damage, and an additional 137,000 would suffer "Slight" damage.

Almost 3.5 million tons of debris may result from these damaged buildings – 58 percent is expected to be heavy debris (concrete and steel), requiring heavy equipment to break

down and remove, while 42 percent is expected to be light debris (wood, brick, and other debris).

In the "Shakeout" scenario (Jones, et al., 2008), damage to single family and multi-family dwellings is expected to result in the displacement of approximately 19,000 households. Immediately after the earthquake, significant disruption to the water supply and distribution system is expected, essentially impacting the entire county. While many of the displaced may find shelter with friends and family, or in available hotels, approximately 8,600 people are expected to seek public shelter.

The number of people killed because of shaking buildings, transportation system damage, and post-earthquake fire may be on the order of 60 to 70 people. Total injuries, including the range of injuries from minor injuries, treated with basic medical care, to mortal injuries (deaths) from all causes, are estimated to reach 11,900 within the County.

Transportation of the injured for treatment could be impacted by transportation system damage with as many as 100 bridges in the County suffering at least "Moderate" damage.

2021 "Shakeout" San Andreas Earthquake Scenario OA Impacts

The 2021 7.8 San Andreas Scenario earthquake centered in Western Riverside County shows that an earthquake of this magnitude will impact most of the populated portions of Riverside County. A summary of impacts is provided in Table 18.2. The MJLHMP Planning team leveraged the scenario and extracted data from census tracks within Riverside County to understand the OA impacts. These impacts are described below:

Of the 686,260 households modeled within the OA specific scenario data, up to 145,214 households could be affected, up to 17,416 homes could have major damage and up to 13,558 homes could be destroyed. The Major Damage and homes destroyed could be considered "red tagged" or unsafe for continued occupancy.

With displaced households, we could see up to 6,178 displaced households and up to 5,412 households would need shelter assistance.

As much as 1,073,464 tons of brick, wood, and other "light" debris and up to 1,517,408 tons of concrete and steel "heavy" debris may result from damaged buildings totaling 2,590,873 tons of debris that would need to be removed in accordance with applicable debris removal standards.

The number of people killed because of the scenario damage is expected to be as high as 645 people. Total injuries are expected to be as high as 3,158 individuals.

The economic loss as stated previously, could be as high as $12.5 billion.

Essential Facility Impacts

Table 27 provides an overview of essential facility performance in the "Shakeout" San Andreas Scenario earthquake. The table lists the number of essential facility sites and buildings (these numbers will differ for multi-building campuses, such as schools and hospitals). The table also provides the total building replacement value and the number of buildings for which value data was available. As can be seen in the table, replacement cost data for hospitals was generally not available, unlike most other essential facility types. Expected building performance in this earthquake event is on the order of 7 percent damage or less for EOCs, fire stations, police stations, and schools, but as much as 26 percent damage to large hospitals. The total economic loss for essential facilities has been estimated to exceed $351 million, with 97 percent of the total loss occurring in schools. It should be noted that although cost data is only available for 31 hospital buildings (out of 77), these 31 buildings suffer more than $9 million in loss, indicating that the actual total economic loss for hospitals would be significant, but can't be estimated at this time because of the lack of replacement value data.

All scenarios reviewed of a major earthquake rated at a M7.0 or higher within the OA could have devastating effects overall, leaving emergency response capabilities overwhelmed with service requests, downtime of essential community services for extended periods, deaths, injuries, and mass displacement of community members.

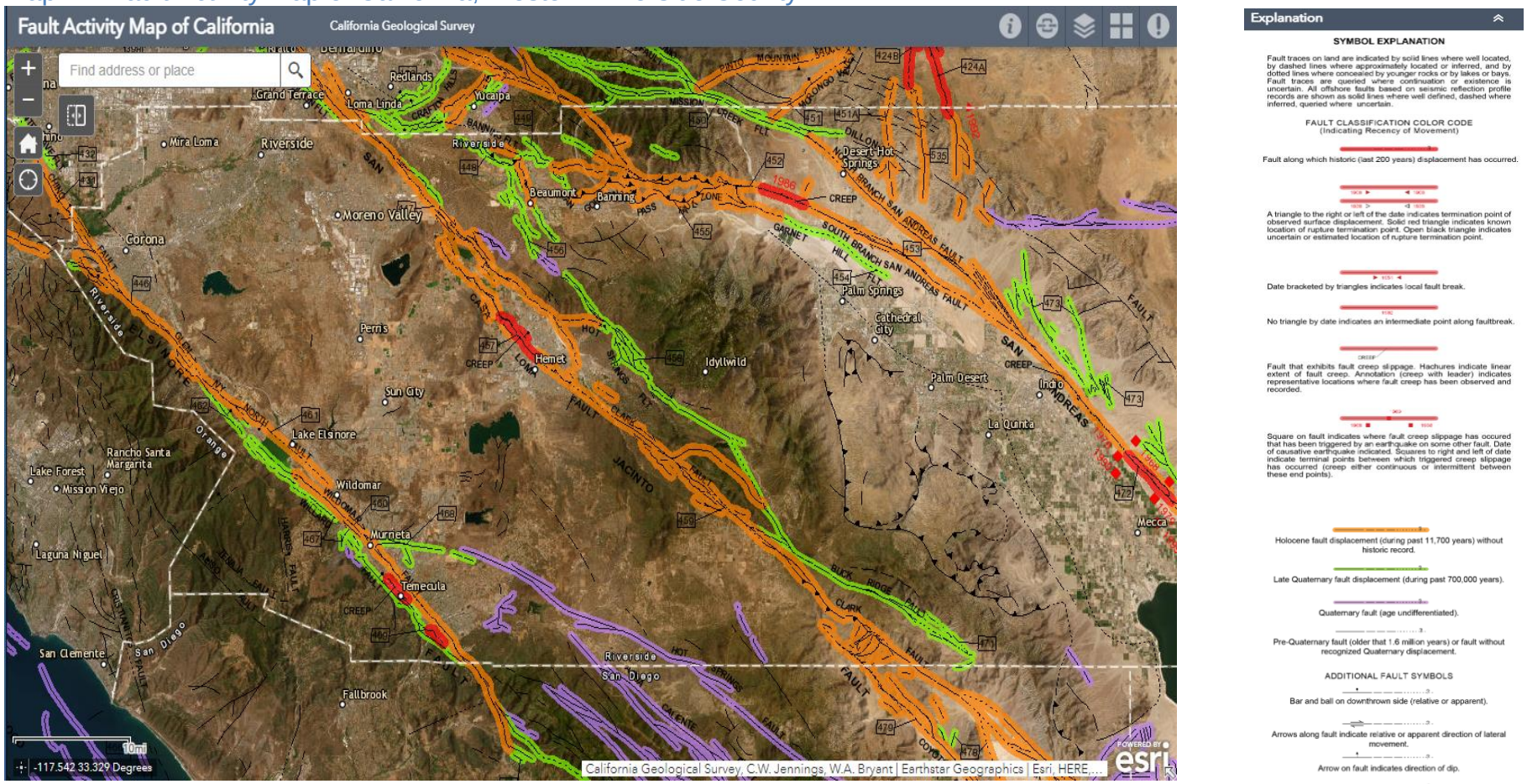
Table 29: Riverside County Essential Facility Loss Estimates – M7.8 "Shakeout" San Andreas Fault Scenario Earthquake

Essential Facility	Category	No. of Facilities/ Sites	No. of Buildings	No. of Beds	Replacement Cost ($1,000)	# Buildings w/ replacement cost data	Functionality Day 1 (%)	Mean Damage	Economic Loss ($1,000)
Hospitals*	Medium	8	28	793	$162,827	21	64	14%	$3,842
	Large	8	49	2,467	$200,792	10	26	26%	$5,180
Schools	K-12 (default data)	152	152		$219,600	152	74	2%	$3,708
	K-12 (providing data)	689	9,981		$6,049,534	9,213	64	6%	$314,182
	CCD (providing data)	12	258		$356,708	257	54	5%	$24,465
EOCs		43	43		$310,273	43	60	6%	$20
Police Stations		51	51		$675,299	48	57	7%	$35
Fire Stations		156	156		$366,493	156	72	4%	$14
TOTALS		**1,119**	**10,718**	**3,260**	**$8,341,525**	**9,900**			**$351,446**

*Note: In Riverside County, there are no hospitals which would be categorized by HAZUS as "Small" (<50 licensed acute care beds)

The following three maps are from the Fault Activity Map of California, California Geologic Survey, Data Map

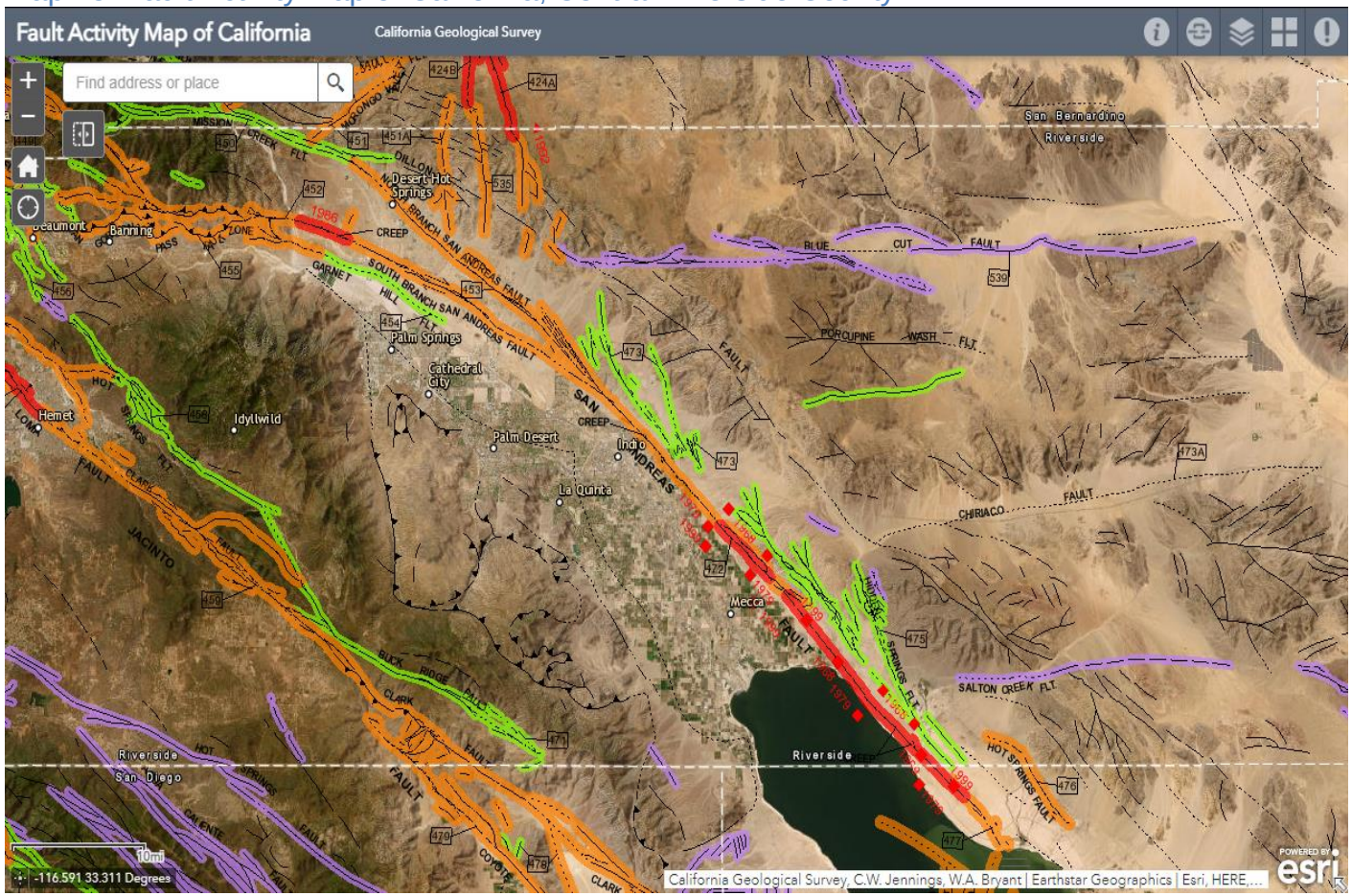
Map 14: Fault Activity Map of California, Western Riverside County



Retrieved from the internet on: December 20, 2022

Source: https://maps.conservation.ca.gov/cgs/fam/

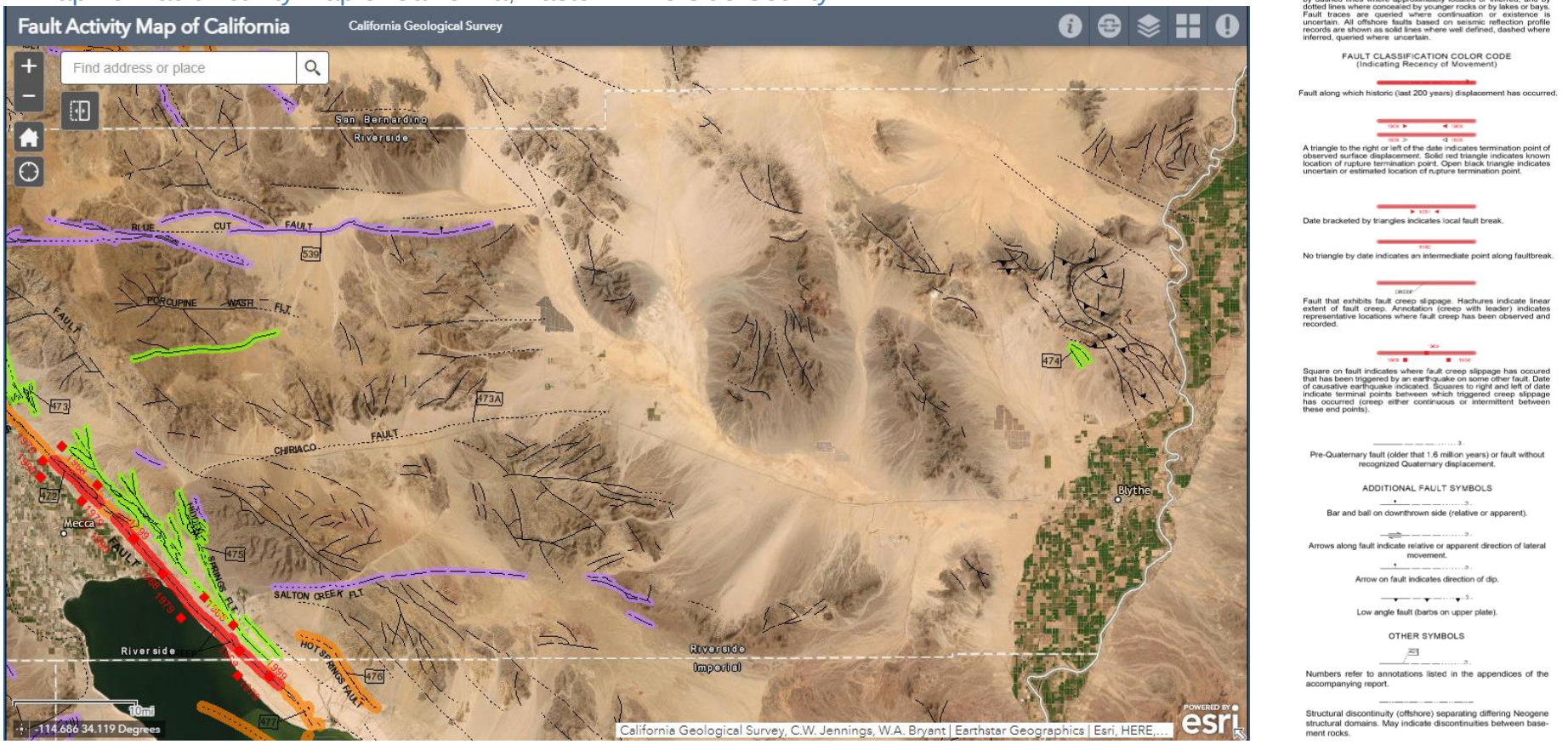
Map 15: Fault Activity Map of California, Central Riverside County



Retrieved from the internet on: December 20, 2022

Source: https://maps.conservation.ca.gov/cgs/fam/

Map 16: Fault Activity Map of California, Eastern Riverside County



Retrieved from the internet on: December 20, 2022

Source: https://maps.conservation.ca.gov/cgs/fam/

Continue to the Next Page.

5.3.2 Pandemic

Severity: 4

Probability: 2

Location: OA Jurisdictions Affected by Pandemic and Epidemic

- All incorporated cities of Riverside County
- Unincorporated areas of Riverside County

Hazard Definition

A disease outbreak can cause illness and result in significant casualties. Since 1900, there have been four influenza pandemics that killed approximately 600,000 people in the United States. Most recently, COVID-19 was discovered in December 2019 in Wuhan, China. It is very contagious and has quickly spread around the world. Due to the nature of this virus (Novel to humans), there was little to no immunity among the population, and it took approximately one year to produce a vaccine that could combat the virus. Hospitalizations and deaths were most pronounced in those 65 and older, and those with underlying medical conditions.

History

2020 - COVID-19 (coronavirus disease 2019) is caused by a virus called SARS-CoV-2. It is part of the coronavirus family, which include common viruses that cause a variety of diseases from head or chest colds to more severe (but rarer) diseases like severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS). COVID-19 most often causes respiratory symptoms that can feel much like a cold, a flu, or pneumonia. With the introduction of non-pharmaceutical interventions and COVID-19 vaccinations the numbers of deaths and hospitalizations have decreased. However, the threat of shifts and drifts of this virus continues to be monitored by the CDC.

2009 - Rise of H1N1, popularly referred to as the Swine Flu. According to the California Center for Infectious Diseases, the H1N1 flu (2009 H1N1 influenza virus) is a type of influenza virus that causes respiratory disease that can spread between people. While most people who have been sick have recovered without needing medical treatment, hospitalizations, and deaths from infection with this virus has occurred. The spread of H1N1 flu occurs in the same way that seasonal flu spreads. Flu viruses are spread mainly from person to person through coughing or sneezing by people with influenza. As a result of preparation and mitigation strategies such as

vaccinations and public education, the threat of a full-blown H1N1 pandemic in the U.S. is receding. However, the possibility of another pandemic still exists.

2003 - A previous pandemic flu threat that still looms is the avian flu. Birds can contract avian flu and pass it along to humans. Some strains of the avian flu are more virulent than others. Public health experts continue to be alert to the risk of a possible re-emergence of a 2003 epidemic of avian flu among people primarily in Asia. People who had been very close contact with infected birds (for example, people who lived with chickens in their houses) contracted a virulent form of avian flu and there was a significant death rate from this disease. Thus far, the avian flu virus has not mutated and has not demonstrated easy transmission from person to person. However, were the virus to mutate in a highly virulent form and become easily transmissible from person to person, the public health community would be very concerned about the potential for a pandemic influenza outbreak. Such a pandemic could disrupt all aspects of society and severely affect the economy.

Risk Assessment

Influenza, also known as the flu, is a disease that attacks the respiratory system (nose, throat, and lungs) in humans. Although mild cases may be similar to a viral "cold," influenza is typically much more severe. It usually comes on suddenly; may include fever, headache, tiredness, dry cough, sore throat, nasal congestion, and body aches; and more often results in complications such as pneumonia. Seasonal influenza is a yearly occurrence that causes serious flu-related complications primarily for persons aged 65 and older and those with chronic health conditions (such as asthma, diabetes, or heart disease), pregnant women, and young children. Those who are exposed but do not succumb develop immunity to the strain circulating that year. Worldwide pandemics of influenza occur when a novel virus emerges to which the population has little immunity. The 20th century saw three such pandemics, the most notable of which was the 1918 Spanish influenza pandemic that was responsible for 20 million deaths throughout the world. Secondary impacts include significant economic disruption that can occur due to loss of employee work time and costs of treating or preventing spread of the flu.

Source: https://archive.cdph.ca.gov/HealthInfo/discond/Pages/Influenza(Flu).aspx

COVID-19 (coronavirus disease 2019) is a disease caused by a virus named SARS-CoV-2 and was discovered in December 2019 in Wuhan, China. It is very contagious and has quickly spread around the world.

COVID-19 most often causes respiratory symptoms that can feel much like a cold, a flu, or pneumonia. COVID-19 may attack more than your lungs and respiratory system. Other parts of your body may also be affected by the disease.

- Most people with COVID-19 have mild symptoms, but some people become severely ill.
- Some people including those with minor or no symptoms may suffer from post-COVID conditions — or "long COVID".
- Older adults and people who have certain underlying medical conditions are at increased risk of severe illness from COVID-19.
- Hundreds of thousands of people have died from COVID-19 in the United States.
- Vaccines against COVID-19 are safe and effective. Vaccines teach our immune system to fight the virus that causes COVID-19.

Source: https://www.cdc.gov/coronavirus/2019-ncov/your-health/about-covid-19/basics-covid-19.html#:~:text=with%20updated%20guidance.-,About%20COVID%2D19,%2C%20a%20flu%2C%20or%20pneumonia.

California Department of Public Health

The California Department of Public Health (CDPH) monitors flu conditions on an annual basis, including all virologic, case based and syndromic surveillance. CDPH works with Riverside County to help the community prepare and mitigate the effects of Pandemic Flu.

- **Effects on people and housing.** The risk to people can be severe, leading to hospitalization and potential loss of life. Damage to housing because of Pandemic Flu is not likely. Depending on the severity of impact, the public's confidence for jurisdictional governance may be challenged if coordinated efforts are not effective and uniformed with best practices identified by subject matter experts such as the Centers for Disease Control.

- **Effects on commercial and industrial structures**. The risks are minimal to structures. Economic impacts for the OA can be apparent in a pandemic. If staff are infected and unable to work, this can limit the ability for industries that require in-person work to be constrained to the limitation of staffing and resources to augment potential quarantine and isolation of employees.

- **Effects on infrastructure.** The risks are minimal, but if there is a pandemic, the risk will decrease the numbers of workers that go to work, which can have economic and functional effects to the organizations in a community. Continuity of Business and Continuity of Government planning goes into action in these cases.

- **Effects on agriculture.** The risk of animals borne disease can be great in a pandemic, depending on the disease. The impact to agriculture can be great, again depending on the disease. The risk to the environment overall will be minimal.

The following charts are from the COVID19.CA.GOV website

Figure 21: California COVID-19 Update for December 8, 2022

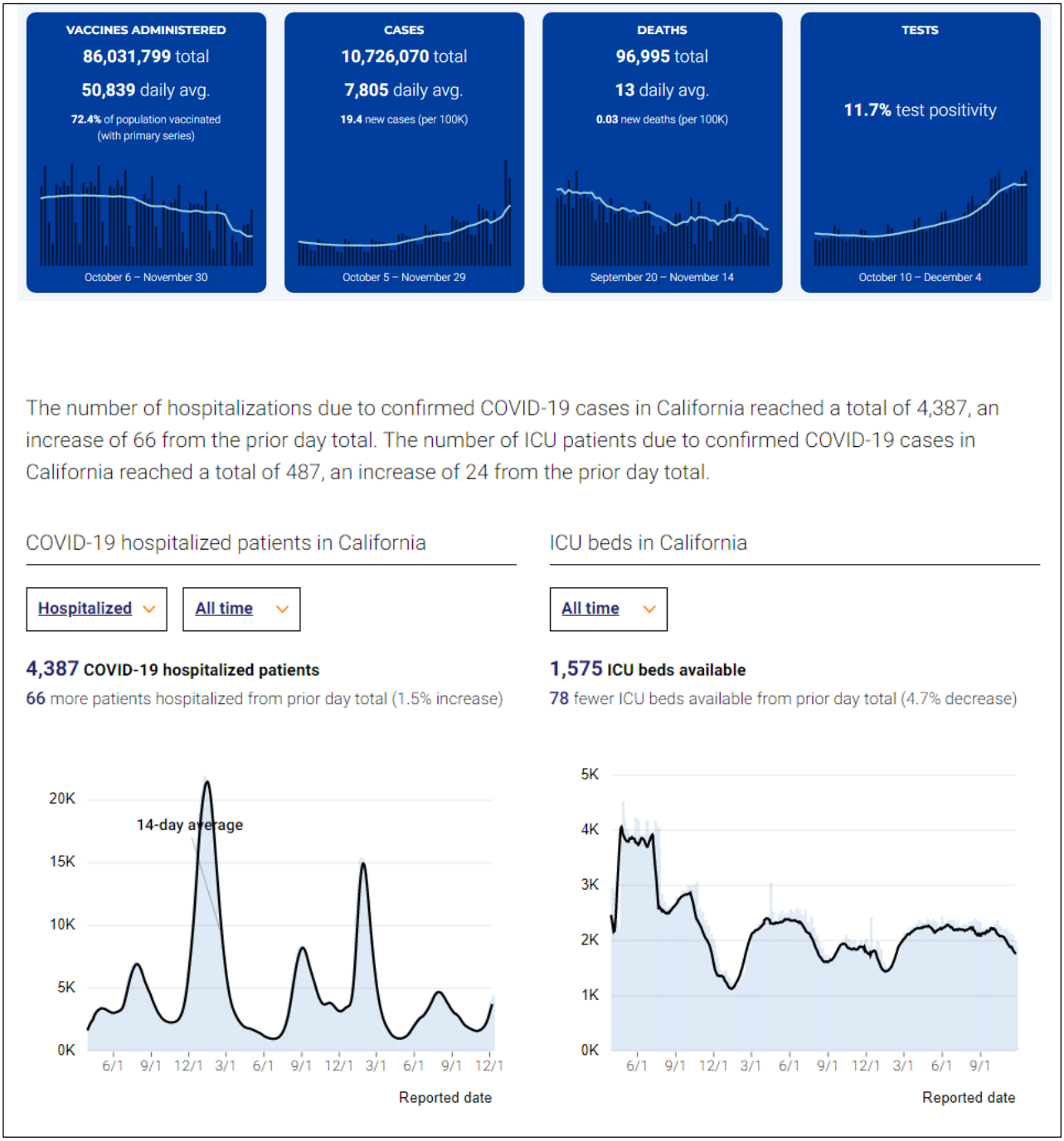
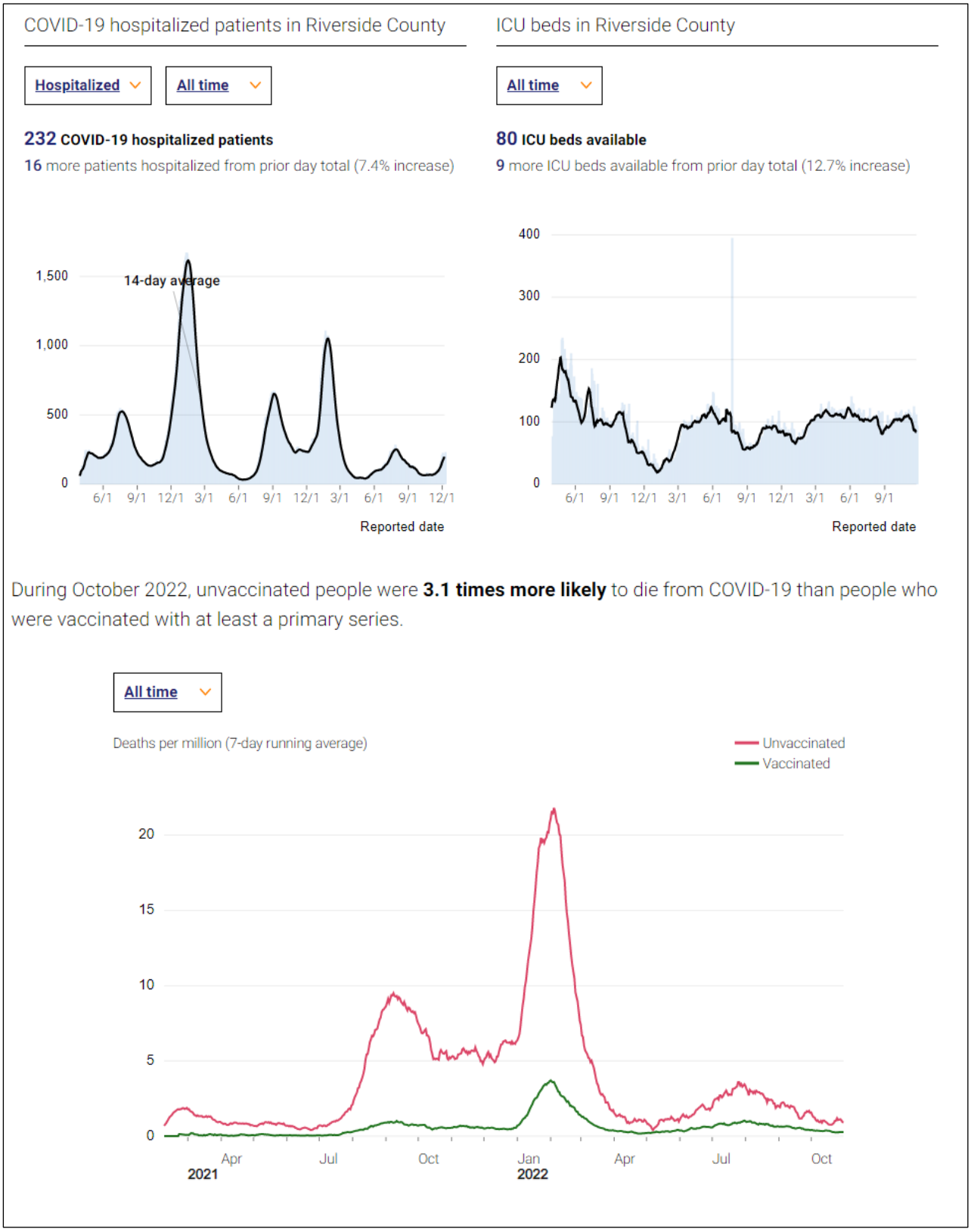


Figure 21 *Continued*



5.3.3 Wildland Fire

Severity: 4

Probability: 4

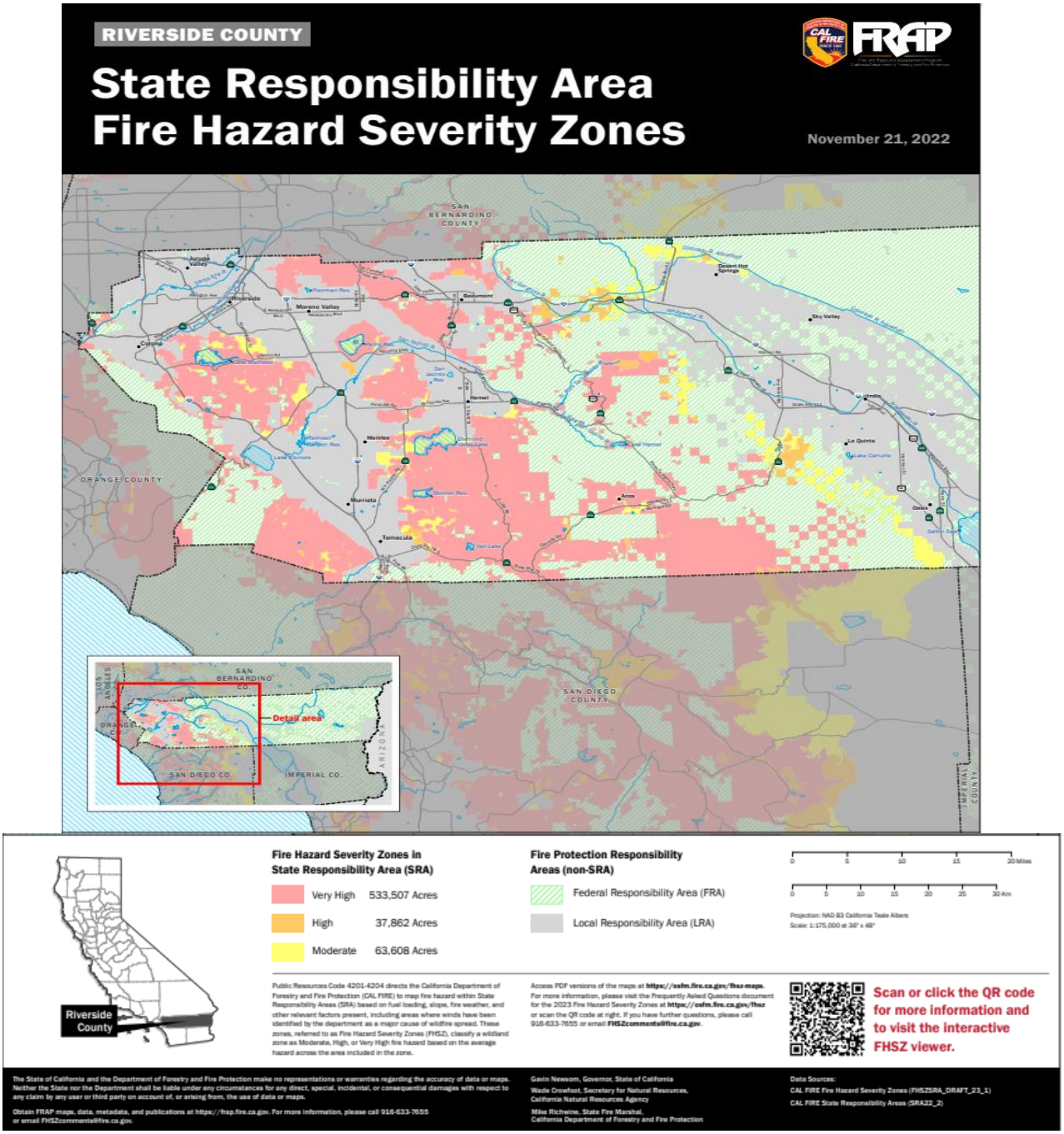
Location: OA Jurisdictions Affected by Wildfire

- All incorporated cities of Riverside County
- Unincorporated areas of Riverside County

Cities in which CAL FIRE has made recommendations on Very High Fire Hazard Severity Zones (VHFHSZ) in Riverside County

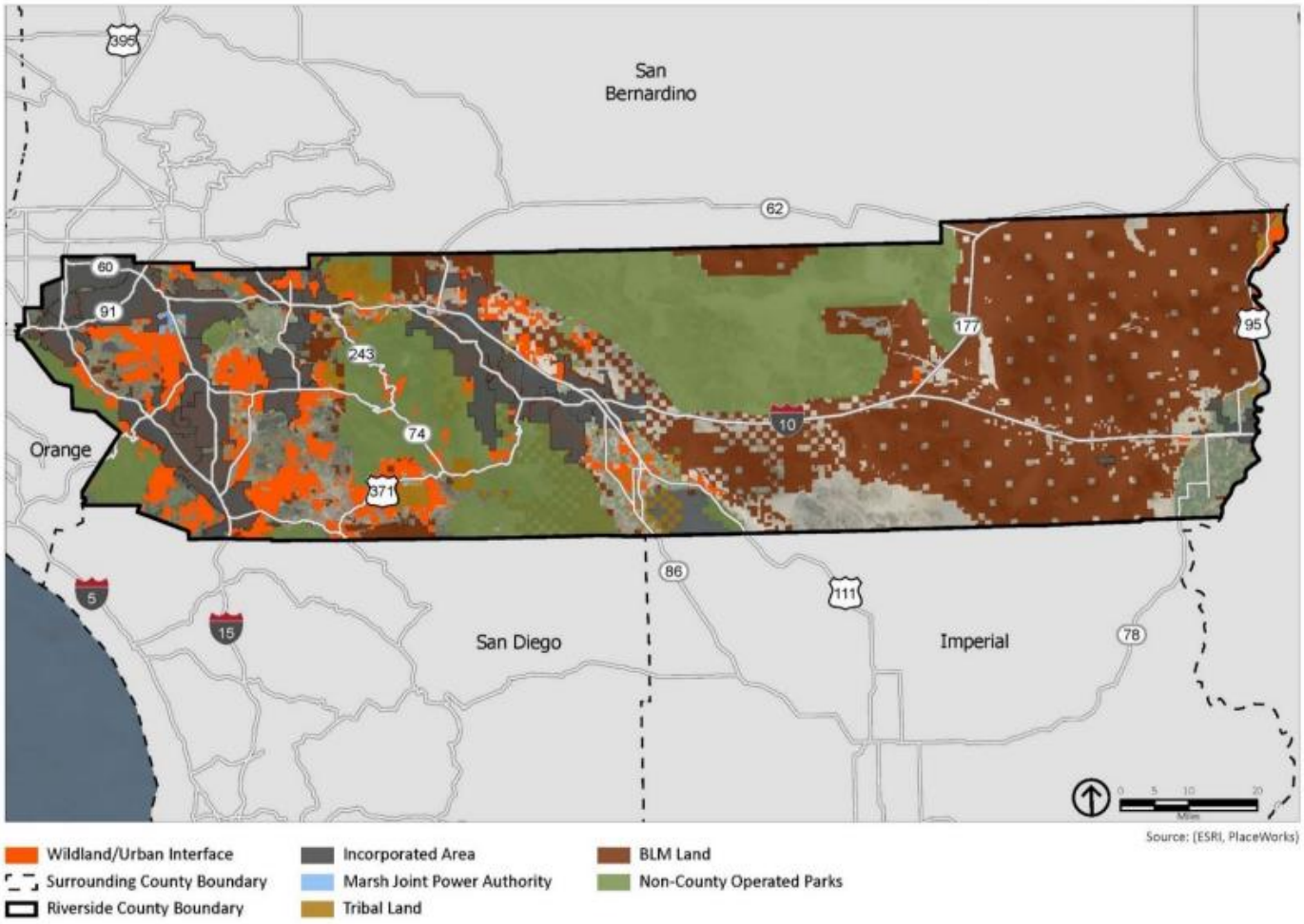
- Banning
- Beaumont
- Calimesa
- Canyon Lake
- Cathedral City
- Corona
- Desert Hot Springs
- Hemet
- Jurupa Valley
- Lake Elsinore
- Menifee
- Moreno Valley
- Murrieta
- Norco
- Palm Desert
- Palm Springs
- Perris
- Rancho Mirage
- Riverside
- San Jacinto
- Temecula
- Wildomar

Map 17: Riverside County Wildland Fire Threat



Source:
https://osfm.fire.ca.gov/media/uk1pvwva/fhsz_county_sra_11x17_2022_riverside_ada.pdf

Map 18: Wildland-Urban Interface



Source:
https://planning.rctlma.org/Portals/14/genplan/2021/elements/Ch06_Safety_092821.pdf

Hazard Definition

An unplanned, unwanted wildland fire including unauthorized human-caused fires, escaped wildland fire use events, escaped prescribed fire projects, and all other wildland fires where the objective is to put the fire out.

Source: https://community.fema.gov/ProtectiveActions/s/article/Wildfire-What

Public Resources Code §4114 and §4130 authorize the State Board of Forestry and Fire Protection (Board) to establish a fire plan which, among other things, establishes the levels of statewide fire protection services for State Responsibility Area (SRA) lands. These levels of service recognize other fire protection resources at the federal and local level that collectively provide a regional and statewide emergency response capability. In addition, California's integrated mutual aid fire protection system provides fire protection services through mutual aid agreements for fire incidents across all ownerships where structures and other human development are more concentrated.

The California Fire Plan is the state's road map for reducing the risk of wildfire. The Fire Plan is a cooperative effort between the State Board of Forestry and Fire Protection and the California Department of Forestry and Fire Protection. By placing the emphasis on what needs to be done long before a fire starts, the Fire Plan looks to reduce firefighting costs and property losses, increase firefighter safety, and to contribute to ecosystem health.

State Responsibility Areas (SRAs)

State Responsibility Areas (SRAs) are those lands within California that meet specific geographic and environmental criteria. These are areas where CAL FIRE has legal and financial responsibility for wildland fire protection and where CAL FIRE administers fire hazard classifications and building standard regulations. SRAs are defined as lands that 1) are county unincorporated areas, 2) are not federally owned, 3) have wildland vegetation cover rather than agricultural or ornamental plants, 4) have watershed and/or range/forage value, and 5) have housing densities not exceeding three units per acre.60 Similar to the Federal Responsibility Areas (FRAs), where SRAs contain built environment or development, the responsibility for fire protection of those improvements (non-wildland) is that of a local government agency.

Local Responsibility Areas (LRAs)

Local Responsibility Areas (LRAs) include land within incorporated cities, cultivated agriculture lands and non-flammable areas in unincorporated areas and those lands that

do not meet the criteria for SRA or FRA. LRA fire protection is typically provided by city fire departments, fire protection districts, and counties, and by CAL FIRE under contract to local governments. LRAs may include flammable vegetation and Wildland-Urban Interface (WUI) areas where the financial and jurisdictional responsibility for improvement and wildland fire protection is that of a local government agency.

Homes in Wildland-Urban Interface (WUI) Areas

Wildfire poses a significant risk to the people of California and their homes, as evidenced by an increasing trend in structural losses from wildland fires. The risk is predominantly associated with wildland-urban interface (WUI) areas. WUI is a general term that applies to development interspersed within or adjacent to landscapes that support wildland fire.

Housing Unit Density Classes:

Class Description:

- Rural/Outlying: From one housing unit per five acres to one housing unit per twenty acres.
- Urban: Dwelling unit density of 2 to 8 units per acre.
- Wildland Urban Interface: The line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels.
- Wildland Intermix Interface is a condition where homes and other structures are scattered throughout a wildland area.

Managing the human/wildfire conflict requires a commitment of resources and a focused mitigation plan over the long term. The approach must be system-wide and include the following:

- An informed, educated public that takes responsibility for its own decisions relating to wildfire protection
- An effective wildfire suppression program
- An aggressive hazardous fuels management program
- Land use policies and standards that protect life, property, and natural resources

- Building and fire codes that reduce structural ignitions from windblown embers and flame contact from WUI fires and impede or halt fire spread within the structure once ignited

- Construction and property standards that provide defensible space

While some wildfires start by natural causes, humans cause four out of every five wildfires. Historically Between 2001-2010, 85 percent of fires in the United States were caused by humans. Wildfires started by humans are usually the result of debris burns, arson, or carelessness. As a natural hazard, a wildfire is often the direct result of a lightning strike that may destroy personal property and public land areas, especially on state and national forest lands. The predominate dangers from wildfires are:

1. Injury or loss of life to people living in the affected area or using the area for recreational facilities.

2. Injury or loss of life to first responders.

3. The destruction of the environment.

Source: https://community.fema.gov/ProtectiveActions/s/article/Wildfire-What

Magnitude factors:

Generally, there are three major factors that sustain wildfires and predict a given area's potential to burn and increate the potential magnitude of an incident. These factors are fuel, topography, and weather.

• Fuel – Fuel is the material that feeds a fire and is a key factor in wildfire behavior. Fuel is generally classified by type and by volume. Fuel sources are diverse and include everything from dead tree leaves, twigs, and branches to dead standing trees, live trees, brush, and cured grasses. Also, to be considered as a fuel source are manmade structures, such as homes and other associated combustibles. The type of prevalent fuel directly influences the behavior of wildfire. Fuel is the only factor that can be modified by humans. The main fuel types in Stanislaus County are crops and grasses, while there are also brush and pine fuels present in some areas in the western portion of the County.

• Topography – An area's terrain and slopes affect its susceptibility to wildfire spread. Both fire intensity and rate of spread increase as slope increases due to the tendency of

heat from a fire to rise via convection. The arrangement and types of vegetation throughout a hillside can also contribute to increased fire activity on slopes.

• Weather – Weather components such as temperature, relative humidity, wind, and lightning affect the potential for wildfire. High temperatures and low relative humidity dry out fuels that feed wildfires, creating a situation where fuel will more readily ignite and burn more intensely. Thus, during periods of drought, the threat of wildfire increases. Wind is the most influential weather factor of the three and its influence can increase rates of spread regardless of temperature and relative humidity.

History of Previous Occurrences

History

There is a long history of wildfires in Riverside County. The next table represents Wildland Fires of 500 acres or greater from 2008 to 2019.

Table 30: Riverside County Large Fires 500 Acres and Greater (2008-2019)

Large Fires (500 Acres and Greater)							
Fire Name	Date		Acres Burned	Vegetation Type	Cause	Structures	
	Start	End				Destroyed	Damaged
LINCOLN FIRE	03/15/19	03/20/19	560	Grass	Arson	0	0
JERRY FIRE	06/21/19	06/21/19	500	Grass	Vehicle	0	0
TENAJA FIRE	09/04/19	09/14/19	1,926	Grass/Brush	Under Investigation	0	3
HORSESHOE FIRE	09/14/19	09/17/19	503	Grass/Brush	Undetermined	0	0
HILL FIRE	10/10/19	11/03/19	628	Grass/Brush	Under Investigation	0	0
SANDALWOOD FIRE	10/10/19	10/15/19	1,011	Grass/Timber	Undetermined	73	16
CRANSTON FIRE	07/25/18	08/09/18	13,139	Brush/Grass/Timber	Human	12	5
PATTERSON FIRE	05/17/18	05/18/18	1,261	Grass/Brush	Equipment Use	0	0
OPERA FIRE	04/30/17	05/02/17	1,350	Grass/Brush	Vehicle	0	0
MANZANITA FIRE	06/26/17	06/30/17	6,309	Grass/Brush	Vehicle	0	0
BLAINE FIRE	08/13/17	08/16/17	1,500	Grass/Brush	Undetermined	0	46
MIAS FIRE	08/14/17	08/18/17	600	Grass/Brush	Electrical Power	0	0
PALMER FIRE	09/02/17	09/09/17	3,800	Grass/Brush	Playing with Fire	0	0
WILDOMAR FIRE	10/26/17	11/01/17	866	Grass/Brush	Vehicle	0	0
BOGART FIRE	08/30/16	09/05/16	1,470	Grass/Brush	Undetermined	0	0
HIGHWAY FIRE	04/18/15	04/24/15	1,049	Timber/Grass	Equipment	0	0
ANZA FIRE	08/10/15	08/15/15	500	Brush	Human	0	0
SUMMIT FIRE	5/1/13	5/4/13	2,956	Grass/Brush	Undetermined	2	0
GORGONIO FIRE	5/4/13	5/4/13	650	Grass/Brush	Undetermined	0	0
MOUNTAIN FIRE	7/15/13	7/31/13	27,531	Timber/Brush	Electrical Power	23	1
SILVER FIRE	8/7/13	8/15/13	20,292	Brush	Undetermined	48	8
HATHAWAY FIRE	6/9/13	10/15/13	3,870	Brush	Under Investigation	0	0
FALLS FIRE	8/5/13	8/9/13	1,383	Grass/Brush	Under Investigation	0	0
HIGHLAND FIRE	6/16/12	6/18/12	2,171	Grass/Brush	Under Investigation	0	0
RUSHMORE FIRE	8/4/12	8/4/12	1,000	Grass	Undetermined	0	0
BUCK FIRE	8/14/12	8/18/12	2,681	Grass/Brush	Lightning	4	0
VISTA FIRE	8/20/12	8/21/12	500	Grass	Equipment	0	0
GILMAN FIRE	8/06/11	8/07/11	945	Grass	Undetermined	0	0
WINDY POINT FIRE	9/25/11	10/3/11	541	Grass	Miscellaneous	0	0
PEDLEY FIRE	5/12/10	5/13/10	850	Grass	Equipment	0	0
MCKINLEY FIRE	5/20/10	5/22/10	1,000	Grass	Equipment	0	0
SKINNER FIRE	7/15/10	7/18/10	503	Grass	Lightning	0	0
CACTUS FIRE	7/15/10	7/18/10	720	Grass	Lightning	0	0
OLIVER FIRE	05/27/09	05/27/09	500	Grass	Other	0	0
COTTONWOOD FIRE	08/27/09	08/31/09	2,409	Grass/Brush	Miscellaneous	0	0
FREEWAY COMPLEX FIRE	11/15/08	11/22/08	30,305	Grass	Structure	0	245
APACHE FIRE	4/29/08	5/4/08	769	Timber/Grass/Brush	Smoking	0	0

Source: Cal Fire Historical Wildfire Activity Statistics 2008 - 2019

Source:
https://planning.rctlma.org/Portals/14/genplan/2021/elements/Ch06_Safety_092821.pdf

Additional Incidents have occurred since 2019 that are not listed on the table above. Available information on those incidents is listed below for fire incidents greater than 500 acres:

Table 31: Large Wildland Incidents within Riverside to include Local and State Incidents

YEAR	NUMBER OF LARGE FIRES	Fire Name(s)	Acres Burned
2023	0 (as of January 2023)	-	N/A
2022	2	Fairview Lost Lake	28,307 5,856
2021	1	Chaparral	1,427
2020	4	Airport Apple Sanderson Snow	1,087 33,424 1,954 6,254

Source: https://www.fire.ca.gov/incidents/

Probability of future events:

As noted, as the beginning of this hazard profile, Wildfires probability was ranked as a 4 meaning it is a frequent rating of occurrence. Looking at the history of large wildfire incidents, Riverside County has had at least one large wildfire incident nearly every year since 2008. This ongoing historical trend is likely to continue to occur annually.

The preceding Riverside County Wildland Fire Threat maps points out the distinct bi-lateral character of Riverside County. The western end of the County is more urban, densely populated, and covered with vegetation that is susceptible to wildfires. The eastern end of the County is primarily desert, with far less population and far less vegetation than the western end of the County. We anticipate that future events will occur

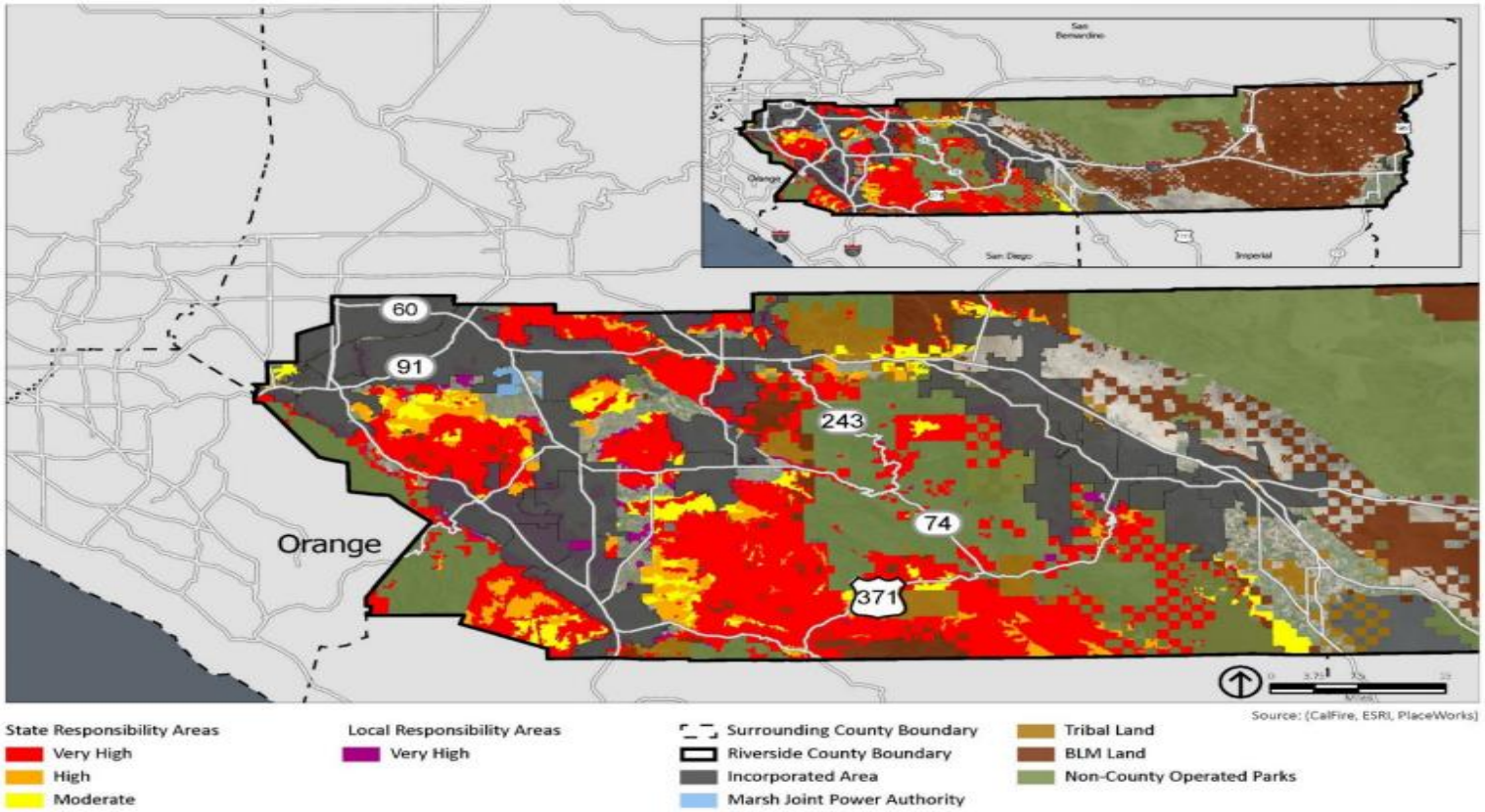
more frequently on the western end of the county, and this assessment reflects the amount of high severity zones seen on the western end of the County as seen on the following Hazard Severity Maps.

The categories of fire severity maps are:

- Little or No Threat
- Moderate
- High
- Very High
- Extreme

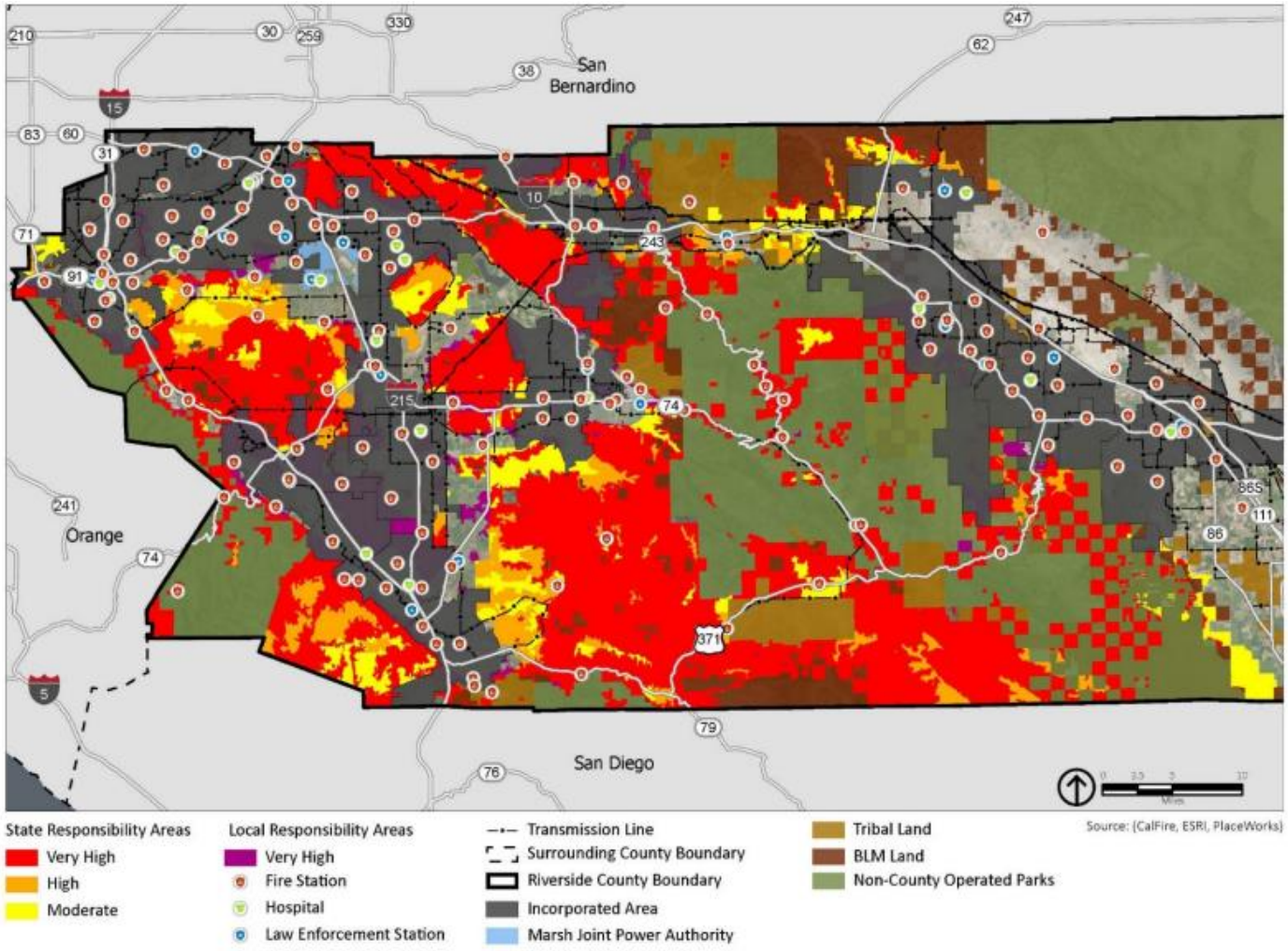
The following two maps are maps of Fire Hazard Severity Zones. They show the wildfire susceptibility Risks and the local responsibility area, and the state or federal responsibility areas.

Map 19: Riverside County Wildfire Susceptibility Risks Map



Source: https://planning.rctlma.org/Portals/14/genplan/2021/elements/Ch06_Safety_092821.pdf

Map 20: Fire Hazard Severity Zones (West County) and Emergency Service Facilities



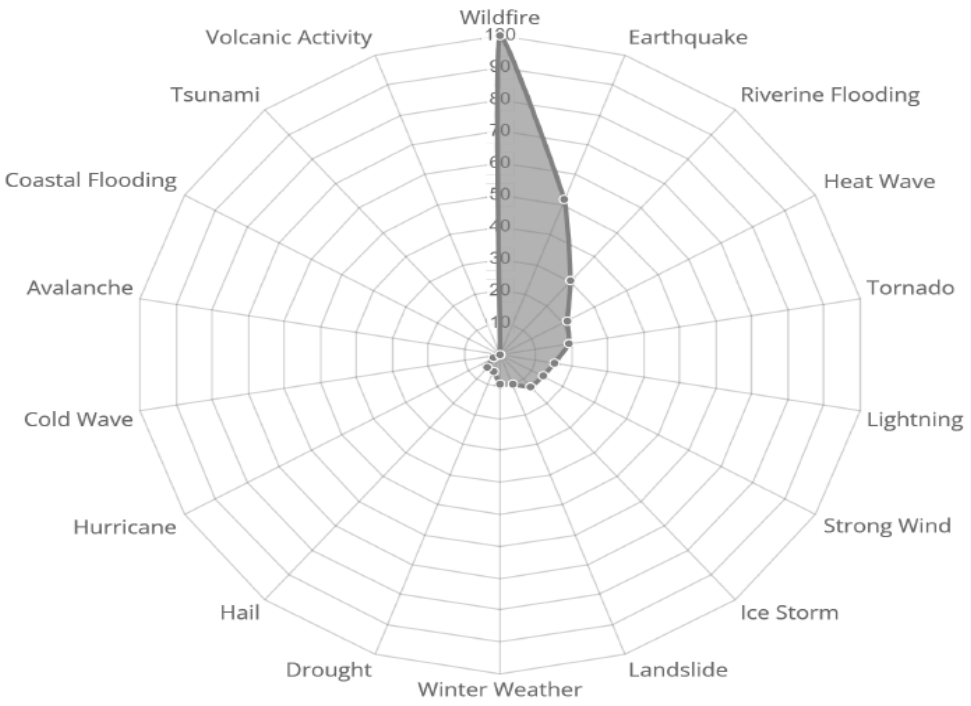
Source: https://planning.rctlma.org/Portals/14/genplan/2021/elements/Ch06_Safety_092821.pdf

Map 21: Eastern Riverside County Wildfire Susceptibility Risks Map

Risk Assessment

Fire is a continuous threat in Southern California, particularly in Riverside County. According to the National Risk Index as of January 2023, Riverside County has a very high-Risk Index Score of 100.00 out of 100.00. A chart that demonstrates the distribution of hazard type Risk Score is available below to convey the severity of this potential hazard. Major areas of concern lie within the wildland and urban interfaces. Hundreds of homes now border major forests and brush areas. With thousands of people living near and visiting wildland areas, the probability of human-caused fires is growing. Although occurring with less frequency, the threat of fire from lightning strikes also exists. The Idyllwild area, San Jacinto Mountains is heavily forested and high hazard area.

Figure 22: National Risk Index Score distribution



The chart above demonstrates the relative distribution of hazard type Risk Index scores for **Riverside County, CA**. Risk Index scores are plotted for each hazard type included in the National Risk Index. Higher relative risk corresponds to larger colored areas inside a given hazard type chart slice.

Source: https://hazards.fema.gov/nri/map

Generally, the dry seasons are a major time for an increase in the number of forest fires and structure fires. The standard "shake roof" is a particular hazard, as is the poor control of flammable growth around structures. During times of the strong "Santa Ana" winds, fire danger is particularly high.

The increase of industrial complexes, transportation networks, and utility networks pose a threat that is not seasonal, but rather year-round. Associated with industry and transportation networks is the ever-present problem of hazardous materials. Although not necessarily a wildland threat, a fire occurring in an urban area involving hazardous materials could have serious consequences.

Due to the undeveloped and rugged terrain in parts of Riverside County, highly flammable brush- covered land, and long, dry summers, many portions of the County have experienced numerous wildland fires in the recent past.

- **Effects on people and structures.** The effects on people and housing can be significant. Many fires shown in the table above resulted in the evacuation of homes. Wildfires have the potential to destroy residential and commercial buildings, as well as critical infrastructure. To convey the potential financial annual impact on the OA, the National Risk Index provides an estimated Annual Loss Value for Riverside County. Estimated damage value in total could be as high as $135,750,440 with a population equivalence of $162,227.

  $$\text{Expected Annual Loss} = \text{Exposure} \times \text{Annualized Frequency} \times \text{Historic Loss Ratio}$$

  Source: https://hazards.fema.gov/nri/map

  Depending on the severity of the incident the public's confidence in the OA's ability to govern could be impacted.

- **Effects on infrastructure.** Due to destroyed powerlines, wildfires often result in power outages. These outages can be extensive in geographic area and numbers of persons affected.

- **Effects on Critical Facilities.** There are approximately 15 fire stations that are in potential direct risk from wildland fires. There are additional critical locations within

the Idyllwild area that are at a high danger risk from wildland fires. In many cases (i.e., fire stations and schools) these facilities cannot be relocated into a safer area.

- **Effects on agriculture.** Effects on agriculture can be devastating. In addition to the obvious impacts on animals and crops, wildfire can have disastrous effects on soil and water that will affect agriculture for an extended period of time. The economic impacts of wildfire include loss of property, direct agricultural sector job loss, secondary economic losses to businesses in or near wildland resources like parks and national forests, and loss of public access to recreational resources. Fire suppression may also require increased cost to local and state government for water acquisition and delivery, especially during periods of drought when water resources are scarce. Effects on agriculture can be significant.

- **Effects on the environment.** It should be noted that large scale wildfires can have devastating effects on the environment that can take months to years to grown back and return to similar states prior to the incident.

Relationship to Other Hazards – Cascading Effects

Major wildfires can completely destroy ground cover causing flooding and erosion. If heavy rains follow a major fire, flash floods, heavy erosion, landslides and mudflows can occur. These cascading effects can have impacts on people, structures, infrastructure, agriculture, and the environment.

Risk Assessment Conclusion.

The western end of Riverside County is more susceptible to wildfire than the eastern end of the County. The effects can be far-reaching in terms of the number of acres involved, the toll on human life, and the economic consequences. Wildfire will continue to be a high-risk hazard for Riverside County and is a mitigation priority for the OA.

5.3.4 Electrical Failure – Power Outage

Severity: 4

Probability: 4

OA Jurisdictions Affected by Power Outage Incidents

- All incorporated cities of Riverside County
- Unincorporated areas of Riverside County

Hazard Definition

Identifying Energy Shortage Hazards

California continues to experience both population growth and weather cycles that contribute to a heavy demand for power. Climate change may also increase California's vulnerability to energy shortage hazards, as frequency and severity of natural hazards such as Extreme Weather in the form of Extreme Heat become more frequent, this could challenge the National Grids ability to provide power through extended heatwaves when demands for climate-controlled environments are needed by the public. Predicted increases in heat waves, as well as increasingly severe winter storms, will put ever greater strain on California's electricity system. The frequency and intensity of heat waves are expected to increase globally, threatening human and animal health, especially among the elderly, poor, chronically ill, homeless populations, individuals with access and functional needs (AFN), and other vulnerable populations as noted by the Cal-OES Extreme Temperature Response Plan.

Source: https://www.caloes.ca.gov/wp-content/uploads/Preparedness/Documents/Extreme-Temperature-Response-Plan-2022-v3.pdf

Hydro-generation provides approximately 20 percent of California's electric power, with the balance coming from fossil fuels, nuclear, and renewable sources. Rotating outages and/or blackouts such as those experienced in August of 2020 can occur due to losses in transmission or generation and/or extremely severe temperatures that lead to heavy electric power consumption.

The electric power industry does not have a universal agreement for classifying disruptions.

Nevertheless, it is important to recognize that different types of outages are possible so that plans may be made to handle them effectively. Electric power disruptions can be generally grouped into two categories: intentional and unintentional.

There are four types of intentional disruptions:

1. Planned [Maintenance/ Public Safety Power Shutoffs (PSPS)]: Some disruptions are intentional and can be scheduled. For example, a disruption may be necessary when components of the power system are taken out of service for maintenance or upgrading. Scheduled intentional disruptions can last from several minutes to several hours, and customers are usually notified in advance. In recent years, power utility companies such as SoCal Edison have begun initiating Public Safety Power Shutoffs for grid areas that show high risk of fire ignition from downed and damaged powerlines.

   Source: https://www.sce.com/outage-center/outage-information/psps

2. Unscheduled (Repair): Some intentional disruptions must be done "on the spot." As a result, advance notice cannot be provided. For example, a fire department or a police department may request a disruption in service during a fire or an accident.

3. Demand-Side Management: Some customers (i.e., on the demand side) have entered into an agreement with their utility provider to curtail their demand for electricity during periods of peak system loads. In return for agreeing to these disruptions, these customers receive a lower electric rate and/or a rebate.

4. Load Shedding (Rotating): When the power system is under extreme stress due to heavy demand and/or failure of critical components, it is sometimes necessary to intentionally interrupt the service to selected customers to prevent the entire system from collapsing. In such cases, customer service (or load) is cut, sometimes with little or no warning. One form of load shedding called a "rotating blackout" involves cutting service to selected customers for a predetermined period (usually not more than two hours). As power is restored to one block of customers, the power to another block of customers is interrupted to reduce the overall load on the system.

Unintentional or unplanned disruptions are outages that come with essentially no advance notice. This type of disruption is the most problematic. The following are categories of unplanned disruptions:

- Accident by the utility, utility contractor, or others.

- Malfunction or equipment failure due, for example, to age, improper operation, excessive operation, or manufacturing defect; special subcategories cover broken fuse links and underground cable, joint, or termination failures.
- Equipment overload (utility company or customer).
- Reduced capability (equipment that cannot operate within its design criteria).
- Tree contact other than from storms.
- Vandalism or intentional damage.
- Weather, including ice/snow, lightning, wind, earthquake, flood, and broken tree limbs taking down power lines.
- A wildfire that damages transmission lines.

Table 32: Riverside County Power Outages (1993-2021)

Location	Date	Incident Description
Riverside County	10/28/1993	Variety of fires. 129 structures destroyed. Power outages. 6 injuries.
Greater Jurupa Area	1/6/1996	Property damage, power disruption, road damage.
Beaumont	2/17/1999	60mph winds damaged roofs, downed trees and power lines, and created a dense dust storm. A plume of dust penetrated homes and covered all surfaces and filled closets and cupboards. Yards had 3" to 6" of silt. 1128 homes damaged. 27 vehicles.
Hector Mine Earthquake	10/16/1999	Minor damage to buildings, power interruption, communication interruption, gas line break causing a leak.
Blythe	8/23/2000	Power outage from storms. Provided shelter for 24 people.
Desert Cities	8/27/2000	Thunderstorm and wildfires caused power interruption. 2,800 customers without power.
Eastern Coachella Valley	7/3/2001	Power failure. Several thousand people affected.
Riverside County	2/9/2002	High wind. Damage throughout the County. Roof damage, structure fires, wildfires started but were contained before 15-acre point. Power outages from the wind.
Moreno Valley	7/22/2002	51 home blackout. Transformer fire. Illegal dumping of used motor oil into the transformer vault.
Mira Loma, Jurupa, Rubidoux, Pedley, Sky Country	1/6/2003	High wind caused road closures, downed trees and power lines. Semi-truck overturns. Power outages affecting 10,000. Fire.
Riverside County	1/14/2003	Power lines down with 936,569 people affected, trees felled, homes damaged, fire triggered from downed lines,
Elsinore, Hemet, Moreno Valley, Perris, San Jacinto and Temecula in the southeastern area of Riverside County	4/23/2009	Substation load interruption led to loss of power to 280.000 residents.

Riverside County, Orange County, parts of Arizona and Mexico	9/8/2011	Cascading outages led to approximately 2.7 million customers without power due to an 11-minute system disturbance. Power loss lasted as long as 12 hours for some affected. Riverside County's Imperial Irrigation District was directly affected.
Thousand Palms, Indio and Desert Hot Springs	4/30/2014	A cut fiber ring led to communication failure for 261 residents. Power outages for 10,500 residents due to windy conditions.
Riverside	3/11/2016	Micro-burst caused down powerlines and power outages, 3,000 people affected.
Riverside	4/29/2016	Power outage led to 20,020 SoCal Edison customers affected.
Moreno Valley	2/10/2017	8,137 residents lost power due to substation malfunction
Riverside University Health System	5/11/2017	Scheduled maintenance required the hospital to switch to partial generator power for 16 hours.
Desert Reginal Hospital	5/17/2017	Experience power outage and ran off generators,
Riverside	10/26/2017	Load shedding caused loss of power to 104,000 residents
Jurupa Valley	10/27/2020	Scheduled maintenance for 8 hours. 926 residents were affected.
San Jacinto, Hemet, and South of Juniper Flats	12/2/2020	Public Safety Power Shutoffs due to Santa Ana winds affected 1762 customers for over 24 hours.
Beaumont, Cherry Valley, Riverside County	1/19/2021	Power outage caused 100 percent of customers (1411) to lose power for 13 hours.
Banning, Idyllwild, Palm Springs, Cabazon, Eastvale, Jurupa Valley, Riverside County	11/25/2021	Public Safety Power Shutoffs due to Santa Ana winds caused power outage for over 24 hours.

Note: Table is not inclusive of all power shutoffs that occur throughout the county.

Risk Assessment

Catastrophic damage to property or loss of life due directly to power failure is possible members of the public who meet the criterial of Critical Care Patients such as those require the use of electrically powered medical devices are particularly vulnerable to this hazard. If services are interrupted for those individuals and they do not plan accordingly could require the assistance of first responders or public services such as Cooling and/or Warming Centers to weather the impacts until they subside. An individual could lose their life if they come into contact with a downed power line. Although the risk of a power outage is high, the direct damage potential is low.

Source: https://www.sce.com/outage-center/customer-resources-and-support/critical-care-backup-battery-program

Power outages or interrupted service often occur during electrical storms and high winds. Wildfires also cause power outages in Riverside County. There is a very real possibility of a widespread blackout due to the earthquake.

- **Effects on people and housing**. Impacts due directly to power failure are slight. Those who require electric powered medical equipment will be at greater risk. In areas of the county that are impacted by high temperatures, or very cold temperatures, a power outage can have an impact on the heating or cooling abilities. The potential impact on the public's confidence in the OA's ability to govern will be minimal.
- **Effects on commercial and industrial structures**. Impacts due directly to power failure are slight. If an outage lasts many days, the impact would be of greater severity.
- **Effects on infrastructure.** Impacts to the ability of infrastructure in the area of failure to support emergency response may be significant, although not permanent.
- **Effect on Critical Facilities.** Most critical facilities are required to have a back- up generator. Depending on the facility, the power outage can have strong effects on parts of the population that need medical devices, also for cooling and heating purposes. Extended periods of power outage can strain back-up generator equipment and the service providers for fuel to run those generators if they are to exceed 72 hours of interruption.
- **Effects on agriculture & the environment.** Impacts due directly to power failure are slight.

Relationship to Other Hazards – Cascading Effects

As noted, other hazards such as an earthquake, wildfire, electrical storms, and high winds may be causes of blackouts.

Risk Assessment Conclusion

The County needs to be prepared to coordinate with utility companies on prioritized power restoration should there be a failure due to downed lines caused by another hazardous condition or intentional disruptions made in the form of a PSPS.

5.3.5 Emerging Re-Emerging Infectious Diseases

Severity: 4

Probability: 4

OA Jurisdictions Affected by Emerging / Re-emerging Infectious Diseases

- All incorporated cities of Riverside County
- Unincorporated areas of Riverside County

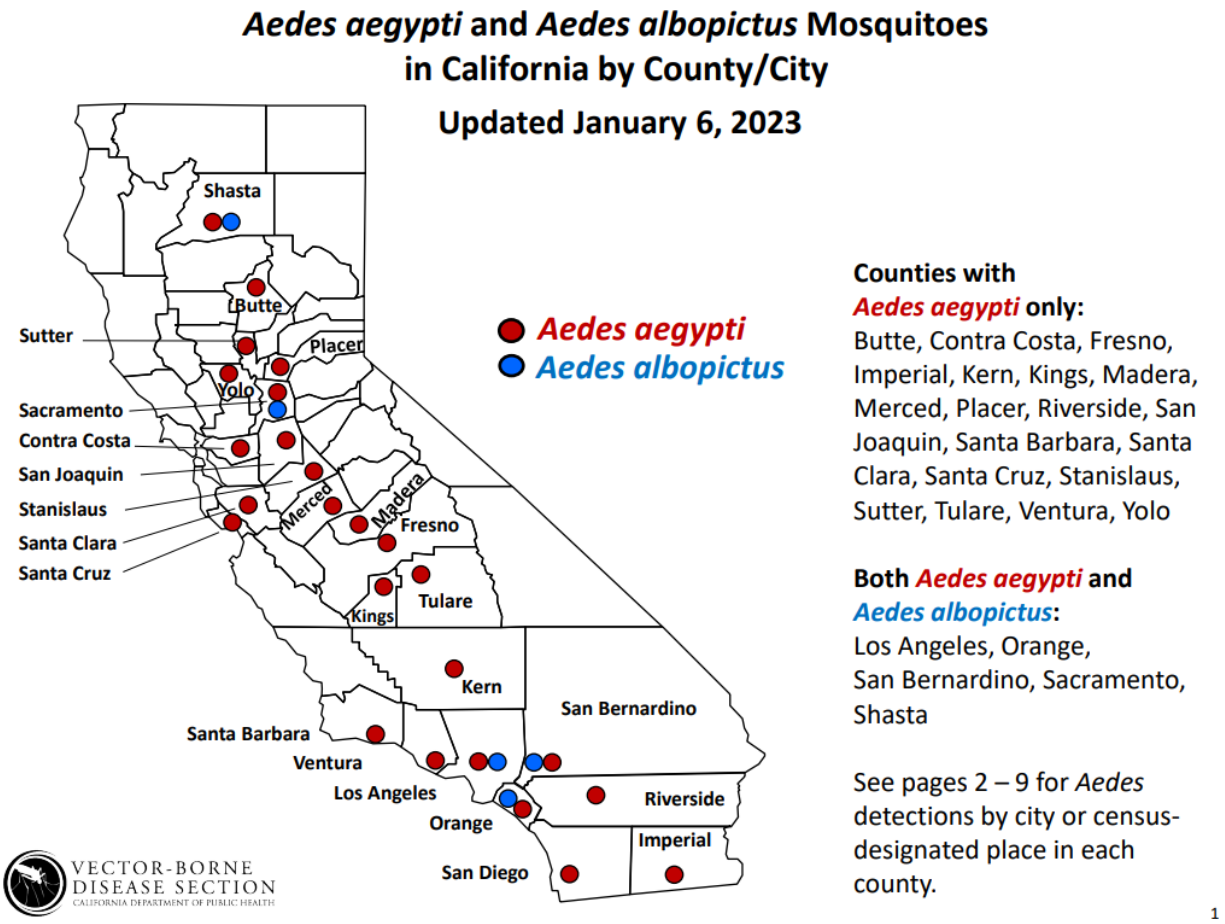
Hazard Definition

According to the Center for Disease Control, the term "emerging infectious diseases" refers to diseases of infectious origin whose incidence in humans has either increased within the past two decades or threatens to increase in the near future. Emerging and re-emerging infectious diseases are new, new to the area, reappearing in the area after being fairly dormant, or a strain has become resistant to antibiotics. These illnesses are caused by bacteria, viruses or fungi that have entered into the body and began to multiply. Infectious diseases can be spread throughout the County population in a number of different ways:
• Vector (Bug bites)
• Person to person
• Contaminated food water or soil

Zika

Zika is a virus that is predominantly transmitted through the vector. Female Aedes ageypti are more dangerous than males. This is due to the fact that females have blood meals and males do not. They also spread the infection through laying eggs in standing water. Riverside County has detected Aedes ageypti, however, the ones that have been tested do not carry the virus. The reported cases in Riverside County have all been travel related illnesses. The threat of transmission is still present due to the potential sexual transmission of the virus.

Map 22: Aedes Distribution Map by County



Source:
https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/AedesDistributionMap.pdf

Ebola

Ebola is dominant in African countries, though with the ease of travel it has the potential to make its way to California. It is transmitted through blood, bodily fluids, direct contact with broken skin, contaminated needles, and infected primates. When infected it can be fatal. Ebola can spread rapidly within Health Care Facilities when staff are not properly trained of not wearing adequate personal protective gear.

Dengue

Dengue viruses are spread to people through the bite of an infected *Aedes* species (*Ae. aegypti* or *Ae. albopictus*) mosquito. Dengue is caused by one of any of four related viruses: Dengue virus 1, 2, 3, and 4. For this reason, a person can be infected with a dengue virus as many as four times in his or her lifetime. The same mosquitos that can spread Zika can spread Dengue. Almost half of the world's population, about 4 billion people, live in areas with a risk of dengue. Prevent dengue by avoiding mosquito bites.

Source: https://www.cdc.gov/dengue/areaswithrisk/index.html

Avian Influenza

Avian influenza or bird flu refers to the disease caused by infection with avian (bird) influenza (flu) Type A viruses. These viruses naturally spread among wild aquatic birds worldwide and can infect domestic poultry and other bird and animal species. Bird flu viruses do not normally infect humans. However, sporadic human infections with bird flu viruses have occurred. Infected birds can shed avian influenza A viruses in their saliva, nasal secretions, and feces. Susceptible birds become infected when they have contact with the virus as it is shed by infected birds. They also can become infected through contact with surfaces that are contaminated with virus from infected birds. Avian influenza A viruses are classified into the following two categories: low pathogenicity avian influenza (LPAI) A viruses, and highly pathogenic avian influenza (HPAI) A viruses. Both HPAI and LPAI viruses can spread rapidly through poultry flocks. HPAI and LPAI designations do not refer to or correlate with the severity of illness in cases of human infection with these viruses; both LPAI and HPAI A viruses have caused mild to severe illness in infected humans.

Respiratory Illnesses (RSV, COVID-19)

Respiratory syncytial (sin-SISH-uhl) virus, or RSV, is a common respiratory virus that usually causes mild, cold-like symptoms. Most people recover in a week or two, but RSV can be serious, especially for infants and older adults. RSV is the most common cause of bronchiolitis (inflammation of the small airways in the lung) and pneumonia (infection of the lungs) in children younger than 1 year of age in the United States.

COVID-19 is caused by a virus called SARS-CoV-2. It is part of the coronavirus family, which include common viruses that cause a variety of diseases from head or chest colds to more severe (but rarer) diseases like severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS). COVID-19 may cause mild symptoms in people, but others may have severe disease or require hospitalization. Older people and those with moderate to severe immunocompromise may suffer more with COVID-19 infection. Long COVID, or post COVID conditions, may cause lingering morbidity or complication, even with minor COVID-19 infection.

Respiratory illnesses can spread when an infected person coughs or sneezes; you get virus droplets from a cough or sneeze in your eyes, nose, or mouth; you have direct contact with the virus, like kissing the face of a child with RSV; you touch a surface that has the virus on it, like a doorknob, and then touch your face before washing your hands.

Risk Assessment

- **Effects on people and housing.** The risk to people can be severe, leading to hospitalization and possibly loss of life. Damages to housing as a result of an emerging / re-emerging infectious disease is not likely. The impact on the public's confidence in the OA's ability to govern is very low.

- **Effects on commercial and industrial structures.** The risks are minimal to structures.

- **Effects on infrastructure.** The risks are minimal, but if there is an emerging or re-emerging infectious disease outbreak the risk to people will lessen the numbers of workers that can go to their regular employment, which can strain the maintaining the infrastructure. Continuity of Business and of Government may become an issue. Outbreaks also but a strain on schools, hospitals, doctor offices and businesses.

- **Effects on agriculture & environment:** Agriculture can be devastatingly affected by emerging / re-emerging infectious diseases. There are a number of vector borne illnesses that can affect livestock such as Lyme disease, Salmonella and rabies. Plant pests or viruses can cause huge losses in crops that can threaten food safety and farmer livelihood stability. This can also impact local fauna can also be impacted depending on the ability of each disease to transmit to animals and plants.

History of Events

2015/17 – Zika was confirmed in Riverside County in 2015 with 14 infections. In 2017, there were 2 confirmed cases. All cases were travel related. Report accuracy reflects confirmed cases. Due to the symptoms mirroring a cold, the number could be higher but the mortality rate for this disease is very low. Its greatest impact is on a pregnant woman. 153 cases were reported within the state of California as of August 2016. Sexual transmission is a possibility with this virus. Transmitting mosquitos, Aedes ageypti, are present within the County.

2014/16 – Riverside County was alerted of the 2014 West Africa Ebola Outbreak in West African countries. Worldwide, a total of 1,975 cases were confirmed and 1,069 deaths were reported in August 2014. In 2016 the numbers had grown to 15,261 confirmed cases and 11,325 fatalities; it was the largest outbreak in history. Infection Control Measures were released from the Riverside Department of Public Health to first responders and EMS professionals. Though Riverside did not experience an outbreak or confirm a case, they were on high alert of the potential spread of the disease.

2015 – West Nile was contracted by 737 people within the county and there were 45 reported deaths.

2013 – Large scale Tuberculosis testing. 2 cases were confirmed and 72 were treated for latent TB infections.

2004 – Botulism Type A was detected in four inmates within Riverside County.

2003 – West Nile Virus was detected in birds in the City of Riverside and the Coachella Valley. There was one reported human case within the County. Imperial and Los Angeles Counties also reported human cases.

Relationship to Other Hazards – Cascading Effects

This hazard has the potential to impact EMS first responders and Health Care Facilities. In the event that the timing of an outbreak coincided with another hazard, the healthcare impact could be extensive.

Risk Assessment Conclusion

Public Health Departments for the County, State, nation and the world constantly monitor all emerging / re-emerging infectious diseases. This gives medical personnel the necessary time to prepare or mitigate possible effects of emerging / re-emerging infectious diseases.

As a result of the Ebola and Zika outbreaks, Riverside County EMS Agency released Policy 2102, Emerging Infectious Diseases Screening. Its purpose is to specify procedures to be followed when highly pathogenic emerging viruses are suspected during emergency call taking and response or confirmed prior to interfaculty transport.

5.3.6 Cyber Attack

Severity: 4

Probability: 1

OA Jurisdictions Affected by Cyber Attack

- Riverside County Jurisdiction
- All incorporated cities of Riverside County

Hazard Definition

Cyber-terrorism is the use of computer network tools to shut down critical government infrastructures such as energy, transportation, and government operations, or to coerce or intimidate a government or civilian population. The premise of cyber terrorism is that as nations and critical infrastructure became more dependent on computer networks for their operation, new vulnerabilities are created. A hostile nation or group could exploit these vulnerabilities to penetrate a poorly secured computer network and disrupt or even shut down critical public or business operations.

The goal of cyber terrorism is believed to be aimed at hurting the economy of a region or country, and to amplify the effects of a traditional physical terrorist attack by causing additional confusion and panic.

Cyber-terrorism. Recent incidents illustrate the County's vulnerability to cyber- terrorism.

- **Effects on people and housing**. If a Cyber-attack were to happen at a Healthcare Facility the effects could be detrimental to patients and their care. Sensitive Security Information could be obtained, and the hackers could release patient files, payment information and other personal data that could harm individuals and employees. Impacts on a Computer Aided Dispatch System (CAD) from cyber terrorism could also cause impacts on the residents of the community as interruption of this service could delay 9-1-1 response times. This hazard could negatively impact the public's confidence in the OA's ability to govern if the incident is severe enough to impact the publics life, safety, or personally identifiable information (PII).
- **Effects on commercial and industrial structures**. Depending on levels of contamination and exposure, effects could range from minimal to devastating.

- **Effects on infrastructure**. Cyber-terrorism can have profound effects on infrastructure. If an attack were to happen in a critical facility it could potentially make it inoperable. As critical infrastructure continues to leverage supervisory control and data acquisition (SCADA) applications, unpatched software and/or unprotected ports connected to the internet could allow threat actors to compromise critical infrastructure operations leading to potential impacts on the general public's essential services such as delivery of water, power and/or other resources.

- **Effects on agriculture & the environment.** Depending on levels of contamination and exposure, effects could range from minimal to devastating. The impacts to the environment would be minimal.

History of Events

In 2016 the County of Riverside Emergency Management Department was targeted for a ransomware attack that resulted in a disruption of work. It also affected the Department Operations Center (DOC) shared drive, which could have hindered response to a disaster.

We have not identified any events that would be identified as cyber-terrorism since 2016. However, it should be noted that all jurisdictions in the OA face cyber threats every day that do coming in the form of: Ransomware, Business Email Compromise, Insider Threat, Phishing, Denial-of-Service Attacks, and Cross site Scripting.

Relationship to Other Hazards – Cascading Effects

Cyber-attacks have the ability to shut down entire facilities. If an attack were to happen during a disaster it could greatly affect the response of first responders and EOC personnel. If Personally Identifiable Information (PII) or data categorized protected under the Health Insurance Portability and Accountability Act (HIPAA) is compromised, the county could be impacted by reputational damage and significant financial penalties.

Risk Assessment Conclusion

Cyber-attacks happen within the County on a daily basis. The Riverside County Information Technology Department (RCIT) has multiple prevention systems in place that protect County servers and network systems. RCIT monitors County systems 24 hours a day and has the Albert Sensor that will report to the Center for Internet Security (CIS), Multi-State Information Sharing and Analysis Center (MS-ISAC) all Domain Name System

(DNS) and NetFlow traffic for correlation with the Department of Homeland Security's threat intelligence database for alerting of malicious network connections to blacklisted IP address and Domains on the Internet. Another implemented system is the Enterprise Breach Detection System that inspects all internal/lateral county network traffic for indicators of compromise (IOCs) enabling the Information Security Office to rapidly detect, respond to, contain, and prevent cyber-attacks, malware outbreaks, network reconnaissance, data exfiltration, and C2 (command & control) and botnet activities.

Recent investments to protect the county against Cyber-terrorism and Cyber-attacks include:

- 2018 - The creation of a dedicated Security Operations Center.
- 2018 – The County purchased a Security Orchestration Automation and Response (SOAR) platform to automate and standardize the response to cyber security incidents.
- 2019 – The county invested in KnowBe4 to perform phishing simulation/awareness
- 2021 – The County changed its policy to require every employee to take cyber security awareness training annually.
- 2022 – The County is currently in the process of purchasing a Breach Attack and Simulation Platform that will allow the County to test the configuration of security tools. This will allow us test against the specific Tactics, Techniques, and Procedures (TTPs) used specific Advanced Persistent Threat (APT) actors.

RCIT is also in the process of implementing more programs for the safety of the County's networks. Due to the level of security, the threat of a Cyber-attack is fairly low, but the potential dangers could be very damaging.

5.3.7 Terrorist Event

Severity: 3

Probability: 1

OA Jurisdictions Affected by Terrorism

- All incorporated cities of Riverside County
- Unincorporated areas of Riverside County

Hazard Definition

The unlawful use or threatened use of violence committed against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political or social objectives.

Terrorism can be defined and segmented into two categories.
International terrorism: Violent, criminal acts committed by individuals and/or groups who are inspired by, or associated with, designated foreign terrorist organizations or nations (state-sponsored).

Domestic terrorism: Violent, criminal acts committed by individuals and/or groups to further ideological goals stemming from domestic influences, such as those of a political, religious, social, racial, or environmental nature.

Source: https://www.fbi.gov/investigate/terrorism

History

Riverside County has experienced some incidents throughout the years. However, threats and incidents have been on the rise.

Riverside County has experienced a few incidents of terrorism throughout county history since terrorism is politically based. The risk of terrorism fluctuates with uncertainty.

Risk Assessment

The following risks and tactics associated with terrorism are defined broadly below to add context:

Chemical. A terrorist would not have to build a complicated chemical release device. During favorable weather conditions, an already existing chemical plant could be sabotaged or bombed releasing a toxic cloud to drift into a populated area. The result could be just as dangerous as having placed a smaller chemical device in a more confined space. This type of incident would cause the maximum amount of fear, trepidation, and potential panic among the civilian population, and thus achieve a major terrorist objective.

Biological. The agents are cheap, easy to make, and simple to conceal. Even small amounts, if effectively deployed, could cause massive injuries, and overwhelm emergency rooms. The production of biological weapons can be carried out virtually anywhere — in simple laboratories, on a farm, or even in a home.

However, experts say it remains very difficult to transform a deadly virus or bacterium into a weapon that can be effectively dispersed. A bomb carrying a biological agent would likely destroy the germ as it explodes. Dispersing the agents with aerosols is challenging because biomaterials are often wet and can clog sprayers. Most agree that, while a biological attack could be devastating in theory, in reality, the logistical challenges of developing effective agents and then dispersing them makes it less likely a terrorist could carry out a successful widespread assault.

Radiological/Nuclear. Under extreme circumstances an accident or intentional explosion involving radiological materials can cause very serious problems. Consequences may include death, severe health risks to the public, damage to the environment, and an extraordinary loss of, or damage to, property.

Explosive. While generally more limited in the extent of the damage inflicted, explosive terrorist attacks may have consequences including death and damage to property. Targets would include county fairs, music festivals, critical facilities, and sporting events.

Active shooters: The increase of violent crimes throughout the nation has increased awareness within Riverside County. The possibility of an attack has increased. Though the threat to infrastructure is fairly limited this hazard could result in loss of life, injury, and economic disruption. Targets could include public events, government facilities, schools, and shopping centers.

Vehicle Ramming: This terrorist tactic has been increasing over the last five years. Riverside County has a very low history of this event but moderate probabilities of it happening again. This tactic is very hard to detect, and mitigation is extremely difficult to carry out. Riverside County Sheriff's Department has increased their awareness of this terrorist style in an attempt to foil any attempted ramming incident.

Extremists, especially in European countries have moved towards filling the vehicles with explosives to increase the number of fatalities in an attack. Though this approach has not yet made it to Riverside County, the potential threat has increased.

Relationship to Other Hazards – Cascading Effects

Terrorism may lead to a fire, destruction of property, disruption of power, injury to persons, and even loss of life. The potential to affect public safety response to other public safety calls.

Risk Assessment Conclusion

Riverside County has a large population within proximity of critical infrastructure. The effects can be far-reaching in terms of the number of buildings involved, the toll on human life, and the economic consequences.

5.3.8 Communications Failure

Severity: 3

Probability: 2

OA Jurisdictions Affected by Network Communications Failure

- All incorporated cities of Riverside County
- Unincorporated areas of Riverside County

Hazard Definition

CoRNet

The County of Riverside Network (CoRNet) provides Voice and Data communication for most County departments and facilities. CoRNet is a distributed design consisting of Regional Hub locations to which sites in each region have their point-to-point circuits connected. Each of these Hub locations is then connected to its adjacent Hub locations via high bandwidth circuits.

Voice Services are built to be fully redundant, residing within 3 geographically diverse data centers: RC3, Regency Tower, and RUHS Main Campus.

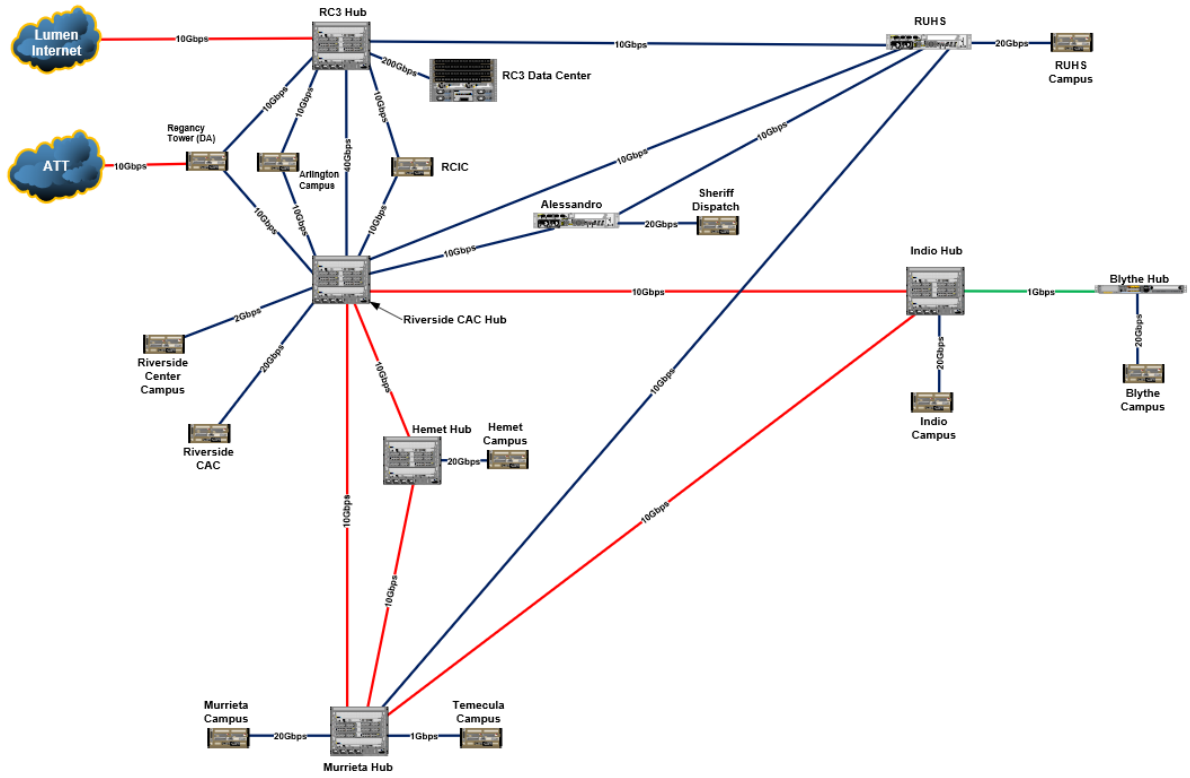
CoRNet has been providing transport for Voice, Video, and Data systems within the same network infrastructure since its redesign was completed in 2016. The global pandemic in 2019/2020 brought the need for business continuity via a remote workforce. The County architecture was scaled up significantly to support this need through Virtual Private Network (VPN) and Mobile Remote Access (MRA) solutions.

The County has adopted a partially remote workforce in this post-pandemic era.

A loss of Network connectivity would impact both Voice and Data. In the event of a communications failure and its location, the impact could range from a single department to geographical areas or possibly the entire County.

Multiple hazards could result in a “Network” failure such as earthquakes, power outages, and other natural disasters.

Figure 23: Lumen Internet, ATT Hub Image



<u>Indio Hub Failure</u>

- Sites impacted
  - All CoRNet directly connected Desert locations
- Services impacted
  - All Voice, Data, and Wi-Fi services for this region.

<u>Murrieta (SWJC) Hub Failure</u>

- Sites impacted
  - All CoRNet directly connected South County locations
- Services impacted
  - All Voice, Data, and Wi-Fi services for this region.

Hemet Hub Failure

- Sites impacted
  - All CoRNet directly connected Hemet area County locations
- Services impacted
  - All Voice, Data, and Wi-Fi services for this region.

Riverside Hub Failure

- Sites impacted
  - All Central Riverside locations (Voice, Data, and Wi-Fi)
- Services impacted
  - All Voice, Data, and Wi-Fi services directly connected to the Riverside hub

PSEC

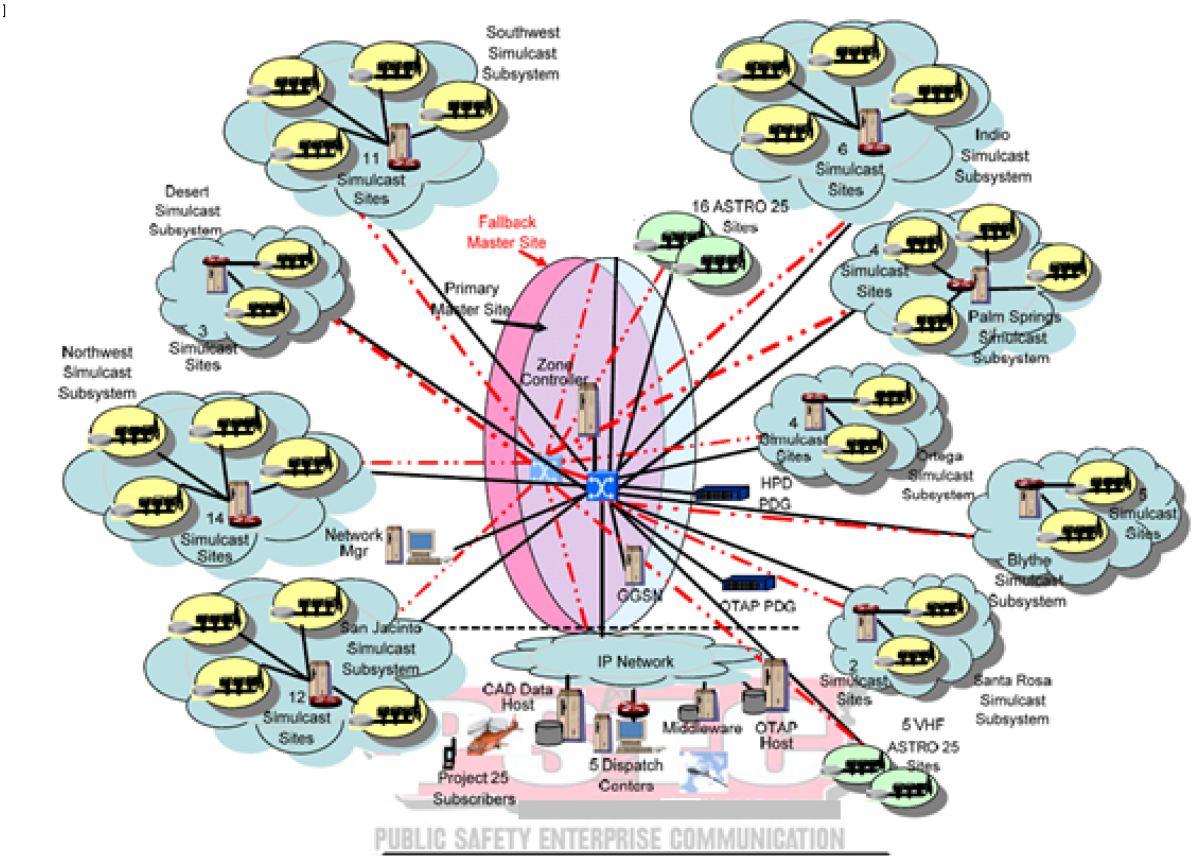
The Riverside County Sheriff's Department/Public Safety Enterprise Communications (RSO/PSEC) Division provides public safety communications for all participating City and County law enforcement, fire service, public works, and allied agencies in Riverside County. In January of 2014, PSEC replaced an aging countywide Enhanced Digital Access Communications System (EDACS) system with a Motorola 7.x APCO P25 Phase 2 high availability and Dynamic System Resilience voice radio system. PSEC provides and manages all aspects of Public Safety Radio Services for participating agencies which include almost all County agencies and the city police departments of Banning, Murrieta, Menifee, Riverside, and Corona. Beaumont, Blythe, Indio, Cathedral City, Indio, and Palm Springs are estimated to be on PSEC by end of 2023.

Thirty plus full-time staff provide 24/7/365 Public Safety Communications for over 6,800 voice and data mobile users who operate over a 7,303 square mile area. The PSEC radio system provides all levels of government communications for the 2,189,641* residents of Riverside County including first responder dispatch for Law Enforcement 9-1-1 Dispatch Centers. The staff maintains:

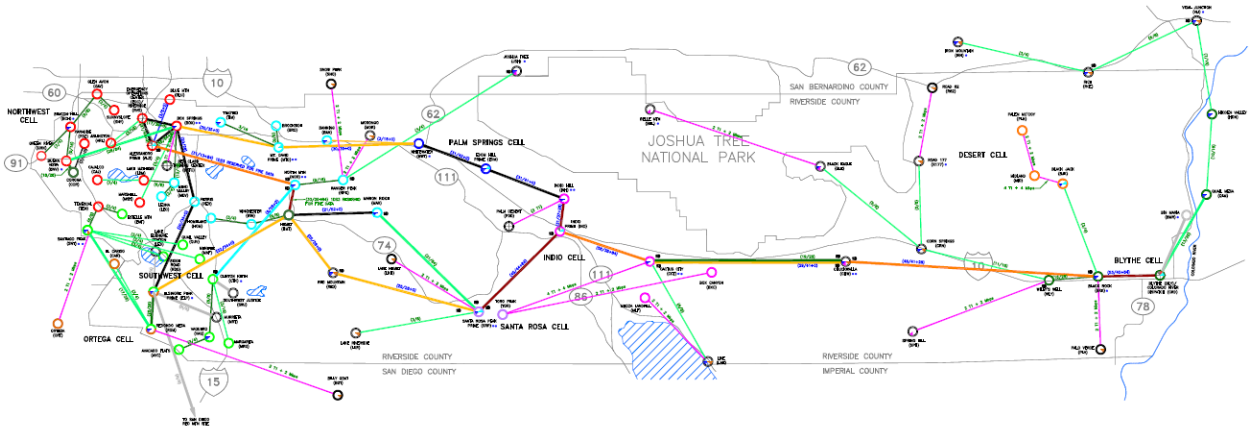
- 78 radio and microwave remote sites
- 77 PSEC radio Voice and Data transmitter Sites
- 1 – Primary Motorola (M)- Core Site
- 1 Motorola (M) Core Dynamic System Resilience (DSR) Site
- 88 licensed Microwave Hops
- Approximately 8500 Voice Users
- 16 Dispatch Centers

The PSEC Division of RCIT processed 30,045,205 Public Safety Transmissions for FY21/22

Figure 24: PSEC System Architecture



Map 3: PSEC Sites and Microwave Interconnectivity across 7200 Square miles of Riverside County, CA



System Redundancy

A significant and material attribute of the System is how it performs during various failure conditions. The PSEC ASTRO 25 Radio System is designed with multiple levels of redundancy and the ability to provide continued communications should failures occur. Because the System can be a lifeline to County users and citizens, there is no tolerance for System failure. The System can withstand multiple failures and still provide full-featured trunked communications.

At each remote site, dispatch location and Master site, components that have the potential to interrupt communications have been backed up with redundant components. The system is designed such that multiple component failures must occur before users will notice a degradation in performance (other than a brief period during the switch over to a redundant component).

Master Sites

There are two Master sites, one in Riverside on Alessandro Street and one in Blythe. In the event of a catastrophic failure of the Alessandro Master site, the Blythe Master site will take over operation of the entire system. In the event of a loss of microwave communications links between the east side and the west side of the county, the Blythe Master site can take over system operations in the east county, while Alessandro will continue to control the west county. In this scenario, dispatchers at Alessandro or Palm

Desert would not be able to reach units operating on the east side of the county, nor would Blythe dispatchers be able to reach units operating in the west.

History of Events

CoRNet

Riverside County has not experienced a large-scale Communication Failure with CoRNet.

PSEC

In early 2017 the PSEC radio system had a technical issue that led to the temporary disruption of 911 services in the Indio/Palm Springs area.

Risk Assessment Conclusion

CoRNet

As RCIT continues working toward redundancy in many areas (Data Center, MPLS, Redundant Internet Connections etc.), it is important to understand the scope of an outage depending on where it occurs on CoRNet under the current design. A single Hub failure would only impact the locations serviced through that Hub. Other hub locations would not be affected.

PSEC

The RSO/PSEC Division has developed hardened sites to maintain Public Safety two-way communications to support first responders during natural disasters and civil disturbance. All of the microwave and core sites are hardened with towers that are rated to either 85 or 120 mph wind, Seismic Zone 4, and are maintained by professionals dedicated to Public Safety Communications.

The PSEC system is highly redundant with several layers of fault tolerance. There are multiple routing paths for routers, switches, trunked repeaters, overlapping coverage and core roaming services. Although individual sites may be affected by a major earthquake or another disaster, the PSEC system has been designed to offer a high level of operability overall.

Restoration of downed infrastructure could take hours to a month(s) depending on the severity of the damage with the worst case being a loss of physical infrastructure.

The PSEC system has already performed well in minor earthquakes and major fires. The system has also been highly available on a day-to-day basis. The probability of the system working to support first responders is high if the PSEC Division properly maintains the system and is funded to do so.

The Core and Radio Network Interface (RNI) has intrusion detection and is isolated from the outside with multiple layers of firewalls to protected from Cyber Attacks. A comprehensive assessment by RCIT ISO and the manufacturer Motorola was performed when the PSEC radio system was deployed. RCIT ISO can be contacted to provide more details on how the RCIT network is protected.

Relationship to Other Hazards – Cascading Effects

Any loss of the RSO/PSEC Public Safety Voice system would affect first responder performance during emergencies of all types in Riverside County for Law, Fire, EMS and local government entities like Public Works.

5.3.9 Flood

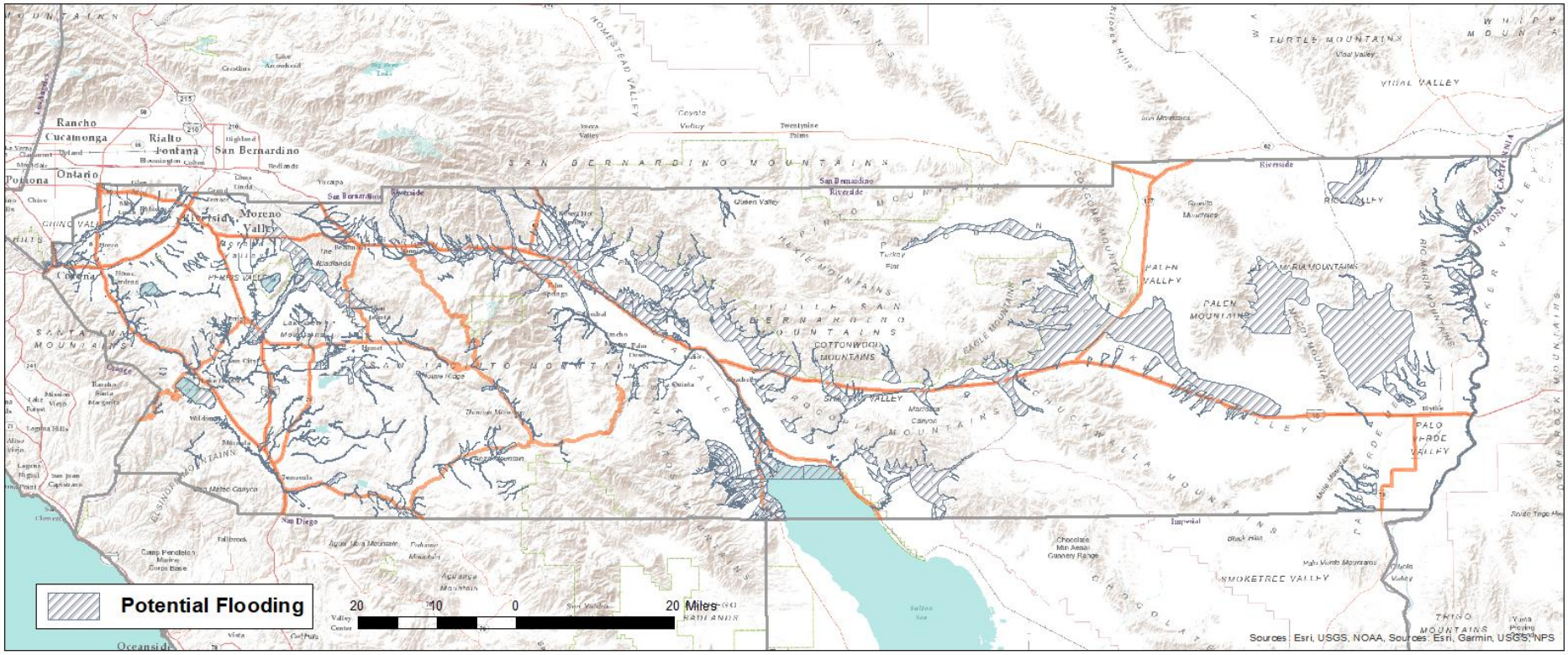
Severity: 3

Probability: 3

Location: OA Jurisdictions Affected by Flooding

- All incorporated cities of Riverside County
- Unincorporated areas of Riverside County

Map 24: Riverside County 100 Year Flood Plain Risks



100-Year Flood Plain Risk Zones - Riverside County

Hazard Definition

A flood is defined as an overflowing of water onto an area of land that is normally dry. Floods generally occur from natural causes, usually weather-related, often in conjunction with a prolonged period of seasonal precipitation or with sudden and very heavy rain falls. Floods can, however, result from human causes as a dam impoundment bursting. Dam break floods are usually associated with intense rainfall or prolonged flood conditions. In the Riverside County area, a major earthquake could cause a dam failure. In a dam failure scenario, the greatest threat to life and property typically occurs in those areas located immediately below the dam since flood depths and discharges generally decrease as the flood wave moves downstream.

Floods are generally classed as either slow-rise or flash floods. Slow-rise floods may be preceded by a warning time lasting from hours to days, or possibly weeks. Evacuation and sandbagging for a slow rise flood may lessen the flood-related damage. Conversely, flash floods are characterized by extremely short warning times.

Hydrologic Regions

Although Riverside County occasionally experiences periods of significant drought, the County can also experience periods of substantial rainfall. When Riverside County does experience heavy rain, or rain over a period of days or weeks, many areas of the County are subject to flooding. Runoff from rain drains either naturally into rivers, washes, and creeks or into flood control facilities. Flash flooding is also a common problem, especially in the Coachella Valley and the easterly portions of the county. Flash flooding is typically associated with short duration, high-intensity precipitation events often associated with summer thunderstorms. Such events can occur even during a drought.

The topography of the County varies from mountainous areas several thousand feet above sea level to low desert areas that are below sea level. Riverside County falls within two distinct Natural Hydrologic Regions as described in the State of California Multi-Hazard Mitigation Plan (SHMP):

South Coast Region

The South Coast hydrologic region extends north from the U.S. - Mexico border to the Tehachapi, San Bernardino, San Gabriel, and San Jacinto mountains. Nearly one-third of the area is coastal plain. This region contains major urban centers, including the counties of Los Angeles, Orange, and San Diego. Much of the flooding is sudden and severe, resulting in massive slides, debris flows, and mudflows. The western portion of Riverside County falls within the South Coast Region and contains portions of the Santa Ana River, San Jacinto River, and Santa Margarita River watersheds.

Colorado River – Desert Region

The dominant hydrologic features of this region are the Colorado River, which forms its eastern boundary, and the Salton Sea, which lies just shy of its western boundary. The region is marked by the San Bernardino and San Jacinto mountains. The region is also bounded by the U.S.- Mexico border to the south and the South Lahontan region to the north. This is generally a sparsely populated agricultural region that experiences sporadic flooding; however, the upper Coachella Valley has a much higher population density. Both common winter storm events and summertime monsoonal flows from Mexico's Pacific Coast can spawn massive rainstorms, general flooding and flash floods. The Eastern portion of Riverside County falls within the Desert Region and contains portions of the Whitewater River and Colorado River watersheds.

Characteristic Weather Patterns

In Riverside County, various weather patterns are associated with flood events such as El Niño conditions, La Niña conditions, Summer Monsoons, and "Pineapple Express".

Floods that affect Riverside County can be attributed to three different types of storm events:

1. A general winter storm that combines high-intensity rainfall and a rapid melting of the mountain snowpack.
2. A tropical storm out of the southern Pacific Ocean.
3. A summer thunderstorm, particularly in the desert areas.

There are three principal types of flood hazards:

1. Stream flooding (including bridge scour and stream erosion)
2. Flash flooding (including debris and mud flows)
3. Sheet flow flooding (including alluvial fan flooding)

The major rivers in the South Coast hydrologic region of Riverside County are dry most of the year and pose flood threats to developments within the floodplain during general storms of long duration. When a major storm moves into the area, the excess precipitation becomes surface runoff. Resultant flood flows have predominantly short durations and sharp peaks. Increased urbanization increases flood potential by increasing the percentage of impervious surfaces.

In the Desert hydrologic region, high-intensity rainfall from the period of July to August can produce severe flash flooding. Winter rains are generally more widespread in the desert

and flash flood potential is less due to the lower intensity of rainfall. Winter rains are nonetheless capable of producing flooding but are somewhat more predictable. There is a severe danger to motorists who may attempt to drive through flooded washes which are typically dry.

Storms with high volumes of precipitation in a short period of time have occurred in the County causing flash floods, contaminated drinking water, disrupted electrical service, and damaged homes and contents. In addition, land that has been denuded of foliage and trees due to fire or human activity has experienced serious erosion from the rainfall.

Excessive precipitation can inundate soil in slopes causing mudslides and landslides. These events can destroy homes, block highways, and destroy power lines. The County is vulnerable to this type of flood damage. Heavy storms also can strand individuals playing near or crossing streams, rivers, flood control channels and intersections.

Riverside County has several major river systems, f, and reservoirs. Excessive rainfall can stress these systems causing serious damage to property and potential loss of life. Rivers can overflow their banks, destroying bridges and washing out roads and highways during major flood events. Dam failure is discussed in a separate section of this LHMP on that specific hazard.

History of previous occurrences:

Table 33: Riverside County Flood History

Location	Date of Incident	Reported Damage	Number Injured	Incident Description
Riverside County	1/17/1993	$12,629,191	0	Flooding
Idyllwild	3/5/1995	$1,000,000	Not Avail.	Flooding caused by rains. 3,000 acres of farmland flooded. Portions of Highway 74 washed away
Mecca	3/6/1995	$1,000,000	2	Flooding caused by rains.
Riverside County	2/6/1998	12,629,191	0	El Nino storms flooding, debris, road damage water damage to homes
Cherry Valley, Calimesa, Yucaipa-Oak Glen Conservation Camp, Banning	7/11-12/1999	$750,000	3	Flash flood. Camp and property damaged.
Desert Hot Springs	3/5/2000	$300,000	1	Flooding caused by rain and snow
Moreno Valley	3/7/2000	$1,500,000	Not Avail.	Flooding caused by rain. Mudslides. Homes and property destroyed.
Eastern Riverside County	8/29/2000	Not Avail.	0	Flash flood due to severe thunderstorm, hail, heavy rain.
Eastern Riverside County	7/6/2001	$3,383,000	0	Flash flood. Road damage, farmland damage, crop damage.
County Areas & Riverside City	11/24/2001	Not Avail.	Not Avail.	Flood channel blocked. Homes flooded.
Moreno Valley, Cathedral City	8/18/2003	$500,000	Not Avail.	Flash flood Government buildings flooded
Anza, Banning	9/4/2003	$150,000	Not Avail.	Flash flood.
Corona, Palm Springs	11/12/2003	$10,000	0	Flash flood.
Mira Loma, Moreno Valley	2/2/2004	$10,000	Not Avail.	Flash flood.
Temecula, Riverside, Mira Loma	2/18/2004	$55,000	Not Avail.	Flash flood.
Mira Loma, Moreno Valley, Perris, Sun City, Lake Elsinore	10/20/2004	$500,000	0	Flash flood.

Riverside County FEMA DR -1577	12/27/2004	Not Avail	Not Avail	Severe Storms, Flooding, Debris Flows and mud slides
Riverside County FEMA DR -1585	2/16/2005	Not Avail	Not Avail	Severe Storms, Flooding, Debris Flows and mud slides
Riverside County FEMA DR -1884	3/8/2010	Not Avail	Not Avail	Severe Storms, Flooding, Debris Flows and mud slides
Riverside County FEMA DR -1952	12/17/2010	Not Avail	Not Avail	Severe Storms, Flooding, Debris Flows and mud slides
Hemet, Coachella Valley and Thousand Palms	9/7-8/2014	Not Avail	Not Avail	Flash flooding in Coachella Valley. Mud and water closed roads and stranded vehicles in La Quinta, Palm Desert, and Thousand Palms. Homes in La Quinta were surrounded by water. Moving water was 3 feet deep on roads and 4 to 5 feet of standing water submerged vehicles.
Throughout County	12/3-4/2014	Not Avail	1	Flooding resulted, with mud, debris and water closing several roadways and stranding vehicles. Mud with debris 10 feet high piled up on Soboba Rd. north of San Jacinto. A swift water rescue was needed.
Throughout County	7/19/2015	Not Avail	1	Flooding in the county lead to the need for a swift water rescue, the washout of Interstate-10 near Desert Center, and neighborhood in and near Moreno Valley flooded causing damage to resident's homes and property.
Menifee	9/8/2015	Not Avail	Not Avail	Flooding
Temecula	1/5-7/2016	Not Avail	Not Avail	Flooding
Throughout County	2/27/2017	Not Avail	1	Flooding resulted from the storm. A swift water rescue was needed in Temecula. Heavy road damage disrupted traffic.
Throughout County	2/14/2019	$8,353,800	1	Flooding resulted from storm event. 30 water rescues in western Riverside County and Coachella Valley. Significant road damage and public infrastructure damage.

Source: https://www.weather.gov/media/sgx/documents/weatherhistory.pdf
http://www.cnrfc.noaa.gov/storm_summaries/dec2010storms.php
http://ks.water.usgs.gov/pubs/reports/wsp.2499.sumca0193.html
http://www.floodcontrol.co.riverside.ca.us/Downloads/AnnualReports/DistrictAnnualReport15-16.pdf

Flood Hazard Mapping

For floodplain management purposes, the following discussion describes the Federal Emergency Management Agency (FEMA) definition of “100-year flood.” The term "100-year flood" is misleading. It is not a flood that will occur once every 100 years. Rather, the flood elevation has a one percent chance of being equaled or exceeded each year. Thus, a 100-year flood could occur more than once in a relatively short period of time. The one percent chance flood is used by the National Flood Insurance Program (NFIP) as the minimum standard for floodplain management regulation and, in most cases, triggers the need for mandatory flood insurance coverage. A structure located within a FEMA Special Flood Hazard Area has a 26 percent chance of suffering flood damage during the term of a 30-year mortgage.

Riverside County utilizes several sources to determine local flood hazards: FEMA Flood Insurance Rate Maps, DWR Awareness Maps, and local flood zone delineation maps as identified in Riverside County Ordinance 458 (last updated January 25, 2022). For floodplain management purposes, the County regulates unincorporated development within each of the above-mentioned maps. Each of the incorporated Cities administers its own floodplain management program and may or may not utilize floodplain information beyond that provided by FEMA's Flood Insurance Rate Maps.

Riverside County residents who live in FEMA mapped floodplains that have a federally backed mortgage loan are required to pay flood insurance. The Riverside County Flood Control District has been working towards getting a premium rate discount for these residents by participating in the Community Rating System (CRS). Currently, unincorporated Riverside County residents receive a 20 percent discount on their flood insurance premiums.

Participating in the CRS Program has multiple secondary benefits, such as enhanced public safety, a reduction in damage to property and public infrastructure, avoidance of economic disruption and losses, reduction of human suffering, and protection of the environment. Through the CRS, a community can evaluate the effectiveness of its flood program against a nationally recognized benchmark. Implementing CRS activities, such as floodplain management, help a community qualify for federal assistance programs.

Probability of Future Occurrences:

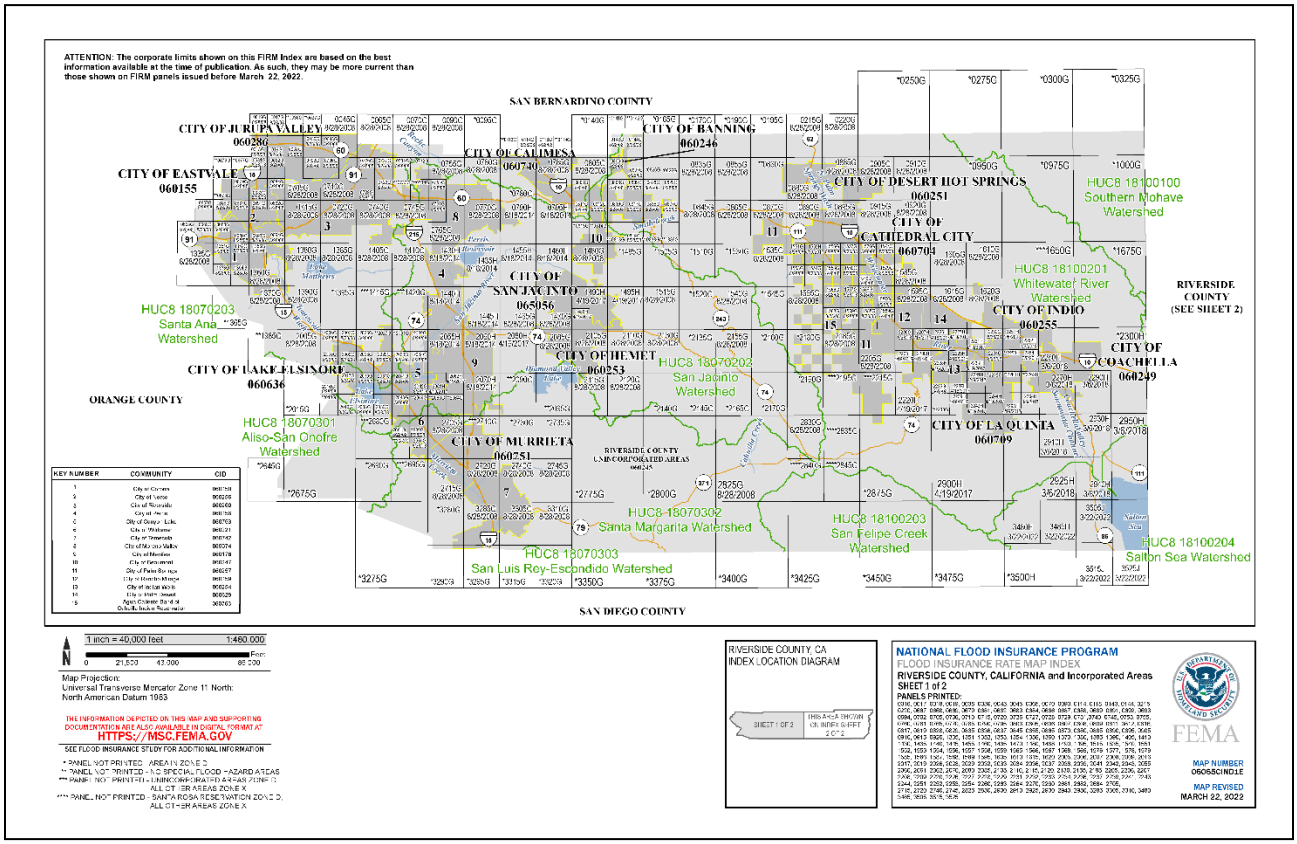
As noted, as the beginning of this hazard profile, Flood probability was ranked as a 3, meaning it is a semi-frequent rating of occurrence. Looking at the history of flooding incidents, Riverside County has had at least one flood incident nearly every three years. This ongoing historical trend is likely to continue to occur.

FEMA Flood Insurance Rate Mapping

FEMA updated the Digital Flood Insurance Rate Maps (DFIRMS) effective range from August 28, 2008, to March 3, 2022, depending on when jurisdictions requested maps to be updated. The DFIRMS are available for public viewing from FEMA's website:

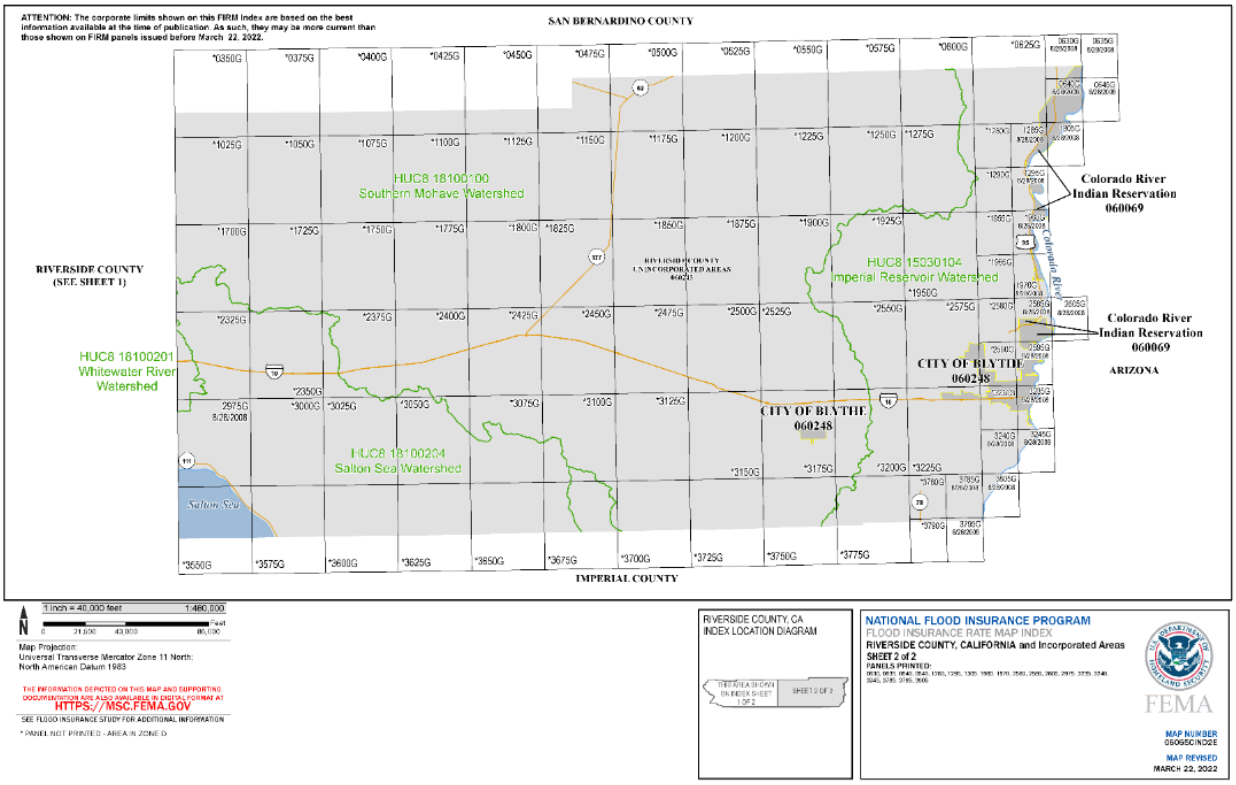
Source: http://msc.fema.gov/portal/advanceSearch#searchresultsanchor

Map 4: FEMA FIRM Map 2022 – West County



Source: http://msc.fema.gov/portal/advanceSearch#searchresultsanchor

Map 26: FEMA FIRM Map 2022 – East County



Source: http://msc.fema.gov/portal/advanceSearch#searchresultsanchor

Table 34: FIRM Flood Zones Table 34: FIRM Flood Zones

Zone	Description
A	Area with a 1 percent annual chance of flooding. No depths or Base Flood Elevations (BFEs) are shown.
AE	Base floodplain where BFEs are provided. AE Zones are now used on digital FIRMs instead of A1 - A30 Zones.
A1 through 30	Known as numbered A Zones, these are the base floodplains in the old FIRM format where a BFE is shown.
AH	Area with a 1 percent annual chance of shallow flooding with an average depth ranging from 1 to 3 feet. BFEs are shown at selected intervals.
AO	River or stream flood hazard area, or area with a 1 percent or greater chance of shallow flooding each year, usually in the form of sheet flow with an average depth ranging from 1 to 3 feet. Average flood depths derived from detailed analyses are shown.
AR	Area with a temporarily increased flood risk due to the building or restoration of a flood control system (such as a levee or a dam).
A99	Area with a 1 percent annual chance of flooding protected by a federal flood control system where construction has reached specified legal requirements. No depths or BFEs are shown.
V	Coastal area with a 1 percent or greater chance of flooding and an additional hazard associated with storm waves. No BFEs are shown within these zones.
VE or V1 through 30	Coastal area with a 1 percent or greater chance of flooding and an additional hazard associated with storm waves. BFEs are shown at selected intervals.
B, C, X	Zones considered having moderate to low risk of flooding, although flood insurance is available to property owners and renters in communities that participate in the NFIP.
D	Area with possible but undetermined flood hazards, where no flood hazard analysis has been conducted.

FEMA also conducted a Flood Insurance Study and determined that the following areas have the potential to flood.

Table 35: Flood Insurance Study Areas

Water Source Studied	Water Source Studied	Water Source Studied
Acacia Creek Drain	Lincoln Avenue Drain	Sheet Flow along Ocotillo Road
Alessandro Wash	Little Morongo Wash	Smith Creek
All American Canal	Long Canyon Wash	Smith Creek West Tributary
Arlington Canal	Macomber Palms Channel	South Norco
Arenas Canyon Creek	Magnesia Falls Road	South Norco Tributary A
Arenas Canyon Creek Tributary	Magnesia Springs Channel	South Norco Tributary B
Arroyo Del Toro	Main Street Drain	Spring Brook
Bear Creek	Mangular Channel	Spring Brook Wash
Beaumont Channel	Marshall Creek	Stetson Ave Channel
Bedford Canyon Wash	McVicker Canyon Wash	Stovepipe Canyon Creek
Big Morongo Wash	Metz Road Basin	Stream A (Vicinity of Desert Hit Springs)
Biskra Palms Channel	Mirage Indian Trail Wash	Sun City Channel A-A
Blind Canyon Channel	Mission Creek	Sun City Channel C-C
Bly Channel	Mockingbird Canyon Wash	Sun City Channel H-H
Box Springs Wash	Montgomery Creek	Sun City Channel X-X
Calimesa Channel	Mountain Avenue Wash	Sun City Southeast Tributary
Carrizo Alluvial Fan	Murrieta Creek	Sunny Slope Channel
Channel B	North Cathedral Channel	Sunnymead Storm Channel
Channel C	North Norco Channel	Tahquitz Creek
Channel H	North Norco Channel Tributary A	Taylor Avenue Drain
Cherry Avenue Channel	North Norco Channel Tributary B	Temecula Creek
Chino Canyon Creek	North Norco Channel Tributary C	Temescal Wash
Coachella Valley Stormwater Channel	North Palm Springs Wash	Tequesquite Arroyo
County Club Creek and North Tributary	North Side Wolf Valley Creek	The Veldt
Day Creek Santa Ana River	Oak Street Channel	Third Street Basin
Dead Indian Alluvial Fan	Ocotillo Drive Wash	Thousand Palms Canyon Wash
Deep Canyon Alluvial Fan	Orange Lateral	Thousand Palms Main Channel
Deep Canyon Storm Water Channel	Ortega Wash	Thousand Palms Tributary A
Desert Hot Springs Channel	Ortega Channel	Thousand Palms Tributary B
Dunes View Road Channel	Palm Canyon Wash	Thousand Palms Tributary C
Dry Morongo Wash	Palm Valley Drain	Thunderbird Wash
East Cathedral Channel	Paloma Valley Channel	Tramview Wash
East Gilman Home Channel	Park Hill Drain	Tramview Wash Tributary
East Rancho Mirage Storm Channel	Pechanga Creek	University Wash
Edgemont A	Perris Valley Storm Drain	Warm Spring Creek
Edgemont B	Pigeon Pass Channel	Wash G
El Cerrito Channel	Prenda Wash	Wash I
Elsinore Spillway Channel	Pushwalla Canyon Wash	Wasson Canyon Creek
Garden Air Gold Course Wash	Pyrite Wash	West Cathedral Channel
Gilman Home Channel	Rache Channel	West Norco Channel
Harrison Wash	Ramsey Street Drain	West Pershing Channel
Hemet Storm Channel	Rice Canyon Wash	Whitewater River
Highland Springs Channel	Salt Creek	Whitewater River (C.V.S.C)
Interstate-10 Wash	Salt Creek Tributary	Whittier Avenue Channel
Kalmia Street Wash	Salt Creek Overflow	Woodcrest Wash
Lake Elsinore	San Gorgonio River	Unnamed Stream A
Lakeland Village Channel	San Jacinto River	Unnamed Stream B
Lakeview Wash	San Jacinto Lateral	Unnamed Street C
Leach Canyon Channel	San Sevaine Channel	1001 Ranch Drain
Lime Street Channel	Santa Ava River	1001 Ranch Drain West Tributary

DWR Awareness Floodplain Mapping

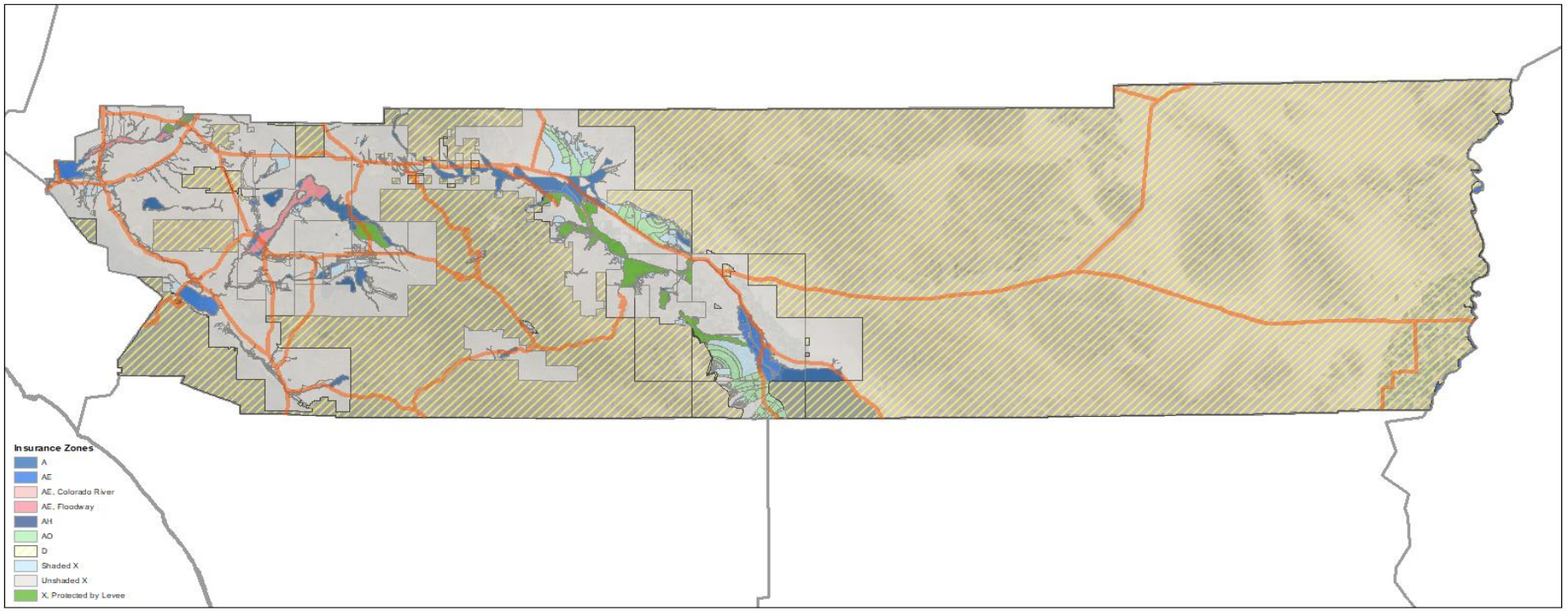
The intent of the California Department of Water Resources (DWR) Awareness Floodplain Mapping project was to identify all pertinent flood hazard areas by 2015 for areas that are not mapped under the FEMA National Flood Insurance Program (NFIP) and to provide the community and residents an additional tool in understanding potential flood hazards currently not mapped as a regulated floodplain. The awareness maps identify the 100-year flood hazard areas using approximate assessment procedures. These floodplains are shown as flood-prone areas without specific depths and other flood hazard data. Awareness Floodplain Maps were incorporated into County Ordinance 458 in 2008.

The maps that were originally adopted are available on the DWR website. DWR will not be modifying these maps since it was a one-time project. As development occurs and the floodplains change due to channelization, the floodplain limits of the Awareness floodplains are being updated by Riverside County Flood Control (RCFC) and will be reflected on the RCFC interactive maps found at:

https://content.rcflood.org/floodplainmap/

California Department of Water Resources Awareness Floodplain Maps can be found at https://gis.bam.water.ca.gov/bam/

Map 5: FEMA Flood Insurance Rate Map

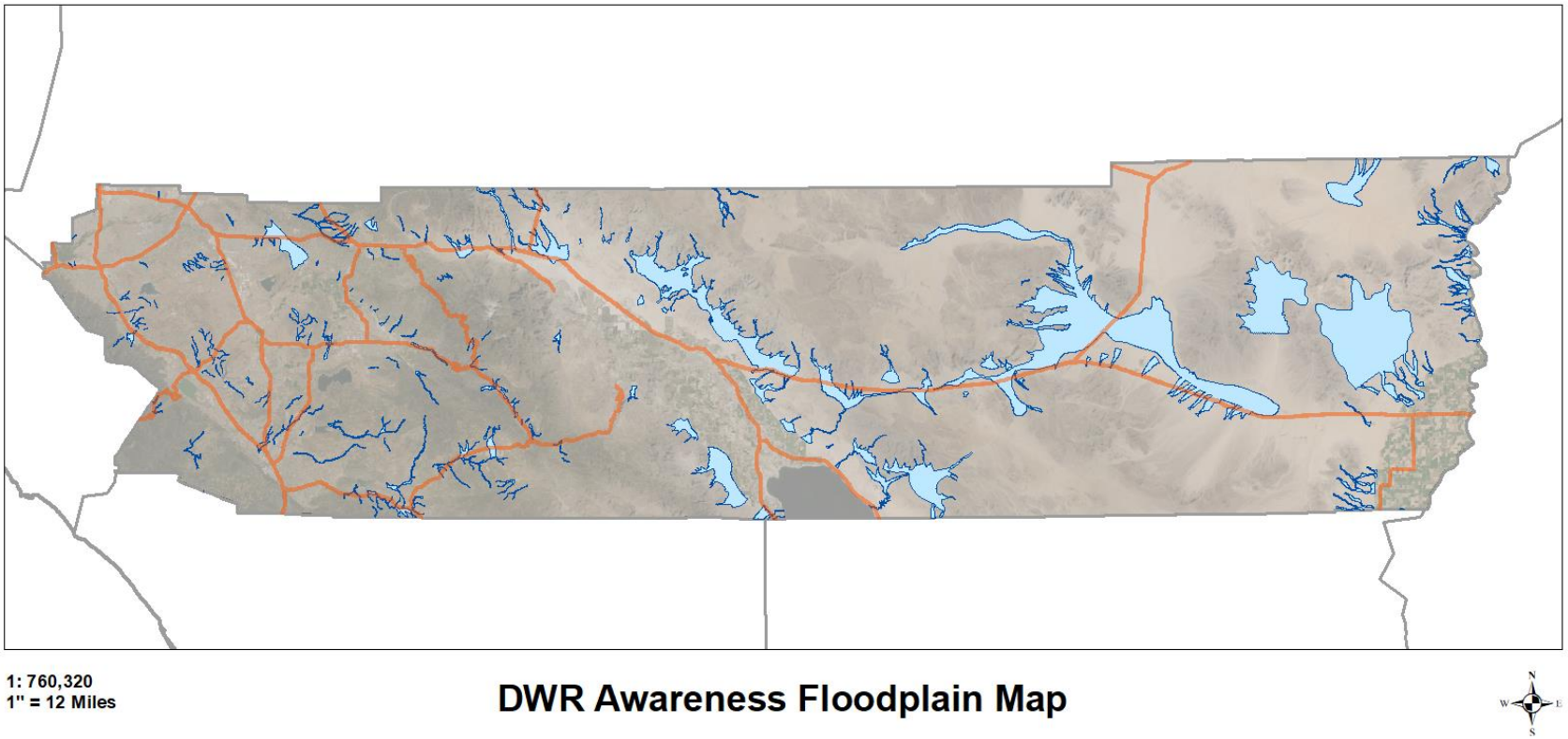


1: 760,320
1" = 12 Miles

Flood Insurance Rate Map

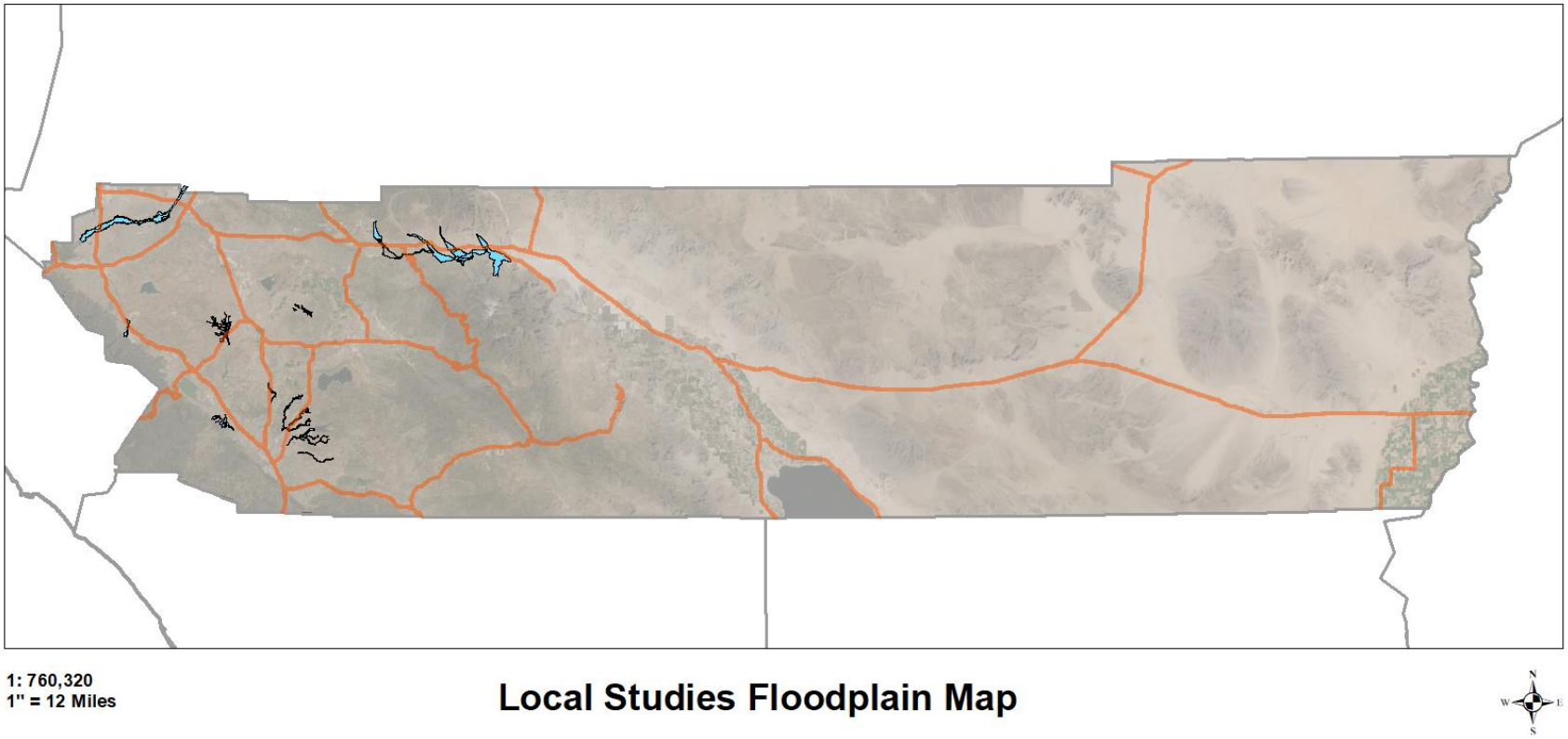
Map Current as of December 2022

Map 28: DWR Awareness Floodplain Map



Map Current as of December 2022

Map 6: Local Studies Floodplain Map



Map Current as of December 2022

Leveraging Technology

As technology progresses, Riverside County Flood Control continues to utilize this growing field to help better assist during large storm events that threaten the community. A few items that we have implemented and continue to implement is the use of gate automation and telemetry for our dams and outlet structures. This data provides real time information about storage and ponding volume behind our dams. We can also manage flow from our outlet structure to prevent inundation to the downstream system. Additionally, the District has installed high resolution cameras that operate with solar power to remotely monitor high debris yielding watersheds. Another area of technology Riverside County Flood Control continues to take advantage of is the use of aerial mapping via drones to quickly produce burn scar topographic mapping within days of a fire containment. This mapping is vital when calculating theoretical debris yields from a burn scar. Additionally, we can use topographic mapping to identify structures that could be susceptible to debris flows.

Risk Assessment

As stated in the State of California Multi-Hazard Mitigation Plan, Riverside County has 34 state-proclaimed flood emergencies and 15 federally declared flood disasters 27 declared flood disasters from the period of 1950 – December 2018. The State's plan also shows Riverside County has a population of 295,081 living within FIRM-Designated Floodplains (based on 2000 Census Data). According to the 2020 Southern California Association of Governments (SCAG) Unincorporated Area of Riverside County Report, the number of residents living in the unincorporated area has increased to 385,386.

Source: https://scag.ca.gov/sites/main/files/file-attachments/unincorporated-riverside-county-he-0421.pdf?1620756635

In 2017 HAZUS was used to generate general building stock and essential facility loss estimates for three different floods in the County – a 1 percent annual chance flood event (100-year flood) with the existing certified levee system in the County intact, a 1 percent annual chance flood event without consideration of these levees, and a 500-year (0.2% chance per year) flood. Flood hazard data from DFIRM maps available at FEMA's Map Service Center were used to develop the flood scenarios.

During the 2023 update, the MJLHMP Planning team did not have the capability to run additional scenarios through HAZUS or leverage the FEMA HAZUS library to further assess alternative scenario impacts. Upon review of the existing scenarios, the team

determined to keep the established scenarios in this plan to understand and re-assess the current impacts flooring may present as it is the most recent and comprehensive scenario available to the planning team. Additionally, alternative resources were utilized to further understand the impacts from major flooding. Resources used included:

- The FEMA National Risk Index website
- The Riverside County General Plan Safety Element
- Inland Southern California Climate Collaborative
- Riverside County Flood Control Department Representatives.

Table 36: Summary of HAZUS – Estimated Impacts on Riverside County for Three Flood Scenarios

Impact Category	100-Year	100-Year w/o Levee	500-Year
Economic Loss due to Building Damage, Total Building-related Direct	$0.81 B $1.7 B	$2.3 B $4.9 B	$3.6 B $7.8 B
# Buildings in Complete Damage State	1,356	3,655	6,262
Debris Generated (Million tons)	0.20	0.50	0.78
Displaced Households, People Needing Short- term Shelter	16,896 41,846	79,078 223,787	125,887 357,092
# Highway Bridges with at least Moderate Damage (potentially closed)	0 (of 4 damaged)	0 (of 4 damaged)	0 (of 4 damaged)

Table 37: Summary of HAZUS – Estimated Impacts for Riverside County Essential Facilities in Three Flood Scenarios

Essential Facility	Category	100-Year		100-Year w/o Levee		500-Year	
		Time to Restore (Days)	Economic Loss ($1,000)	Time to Restore (Days)	Economic Loss ($1,000)	Time to Restore (Days)	Economic Loss ($1,000)
Hospitals*	Medium	0	$0	540	$0	540	$0
	Large	0	$0	540	$0	360-540	$0
Schools	K-12 (default data)	480	$115	480	$865	480	$2,232
	K-12 (providing data)	360-720	$12,482	360-720	$38,838	360-720	$66,911
	CCD (providing data)	0	$0	360-480	$6,285	360-480	$6,285
EOCs		0	$0	480	$560	360-480	$5,113
Police Stations		480	$0	360-480	$0	360-480	$796
Fire Stations		480	$692	360-480	$692	360-630	$1,994
TOTALS		**360-720**	**$13,289**	**360-720**	**$47,240**	**360-720**	**$83,331**

*Note: In Riverside County, there are no hospitals which would be categorized by HAZUS as “Small” (<50 licensed acute care beds)

Vulnerability Assessment:

- **Effects on People and Housing:** Of the approximately 647,000 buildings modeled within the general building stock for Riverside County, about 1 percent (6,262) are expected to suffer “complete” damage in the 0.2 percent annual chance flood event (500-year flood) scenario. These building would be considered “red-tagged” or unsafe for continued occupancy. About 94 percent of the 6,262 buildings are manufactured housing (i.e., mobile homes). Approximately 43,000 buildings (6.6%) are expected to suffer more than 20 percent damage or more while about 18,000 buildings are estimated to suffer flood damage of less than 20 percent. As much as 0.78 million tons of debris may result from these damaged

buildings – 21 percent is expected to be heavy debris (concrete and steel), requiring heavy equipment to break down and remove, while 79 percent is expected to be light debris (wood, brick, drywall and other debris).
Damage to single family and multi-family dwellings is expected to result in the displacement of almost 126,000 households. While many of the displaced may find shelter with friends and family, or in available hotels, as many as 357,000 people are expected to seek short-term public shelter. This large number of people would likely overwhelm the emergency sheltering capacity of the county. The displaced populace should be able to move to safe locations without too much difficulty. While four (4) bridges in the county's transportation system are expected to suffer minor flood damage, the bridges are expected to remain functional. Extended impacts as described in the scenarios presented could negatively impact the public's confidence in the OA's governance during and after a major incident.

- **Essential Facility Impacts:** Table 36 provides an overview of essential facility performance in the 0.2 percent annual chance flood event (500-year flood) with levees scenario. The table lists the number of essential facility sites and buildings (these numbers will differ for multi-building campuses, such as schools and hospitals). The table also provides the total building replacement value, and the number of buildings for which value data was available. As can be seen in the table, replacement cost data for hospitals was generally not available, unlike most other essential facility types. Expected building damage in this flooding event ranges from 0 percent damage for numerous essential facility types with some, but minimal, flooding, to as much as 7.1 percent mean damage for one school district. The total economic loss for essential facilities has been estimated to reach about $83 million, almost 91 percent of which ($75 million) will occur in schools and about 6 percent of which will occur in EOCs ($5.1 million). It should be noted that no hospital losses were estimated since all hospitals impacted by this flooding scenario did not provide replacement value data. (The full economic impact on hospitals can't be estimated at this time because of the lack of comprehensive replacement value data).

Table 38: Riverside County Essential Facilities Loss Estimates – 0.2 Percent Annual Chance Flood Scenario

Essential Facility	Category	No. of Facilities/Sites	No. of Buildings	No. of Beds	Replacement Cost ($1,000)	# Buildings w/ replacement	# Non-Functional Buildings	Time to Restore (Days)	Economic Loss ($1,000)
Hospitals*	Medium	8	28	793	$162,827	21	0	540	$0
	Large	8	49	2,467	$200,792	10	0	360-540	$0
Schools	K-12 (default data)	152	152		$219,600	152	31	480	$2,232
	K-12 (providing data)	689	9,981		$6,049,534	9,213	1,111	360-720	$66,911
	CCD (providing data)	12	258		$356,708	257	92	360-480	$6,285
EOCs		43	43		$310,273	43	4	360-480	$5,113
Police Stations		51	51		$675,299	48	2	360-480	$796
Fire Stations		156	156		$366,493	156	8	360-630	$1,994
TOTALS		**1,119**	**10,718**	**3,260**	**$8,341,525**	**9,900**	**1,248**	**360-720**	**$83,331**

Note: In Riverside County, there are no hospitals which would be categorized by HAZUS as “Small” (<50 licensed acute care beds)

Table 39: Estimated Impacts on Riverside County Fire Stations in a 1 Percent Annual Chance Flood Scenario

Agency	Number of Buildings	Replacement Cost ($1,000)	# Buildings w/ replacement cost data	No. Non-Functional Buildings	Restoration Time (Days)	Mean Building Damage	Economic Loss ($1,000)
Cathedral City FD	3	$10,500	3	0	360-480	0.0%	$0
Corona FD	7	$23,170	7	2	480	7.0%	$385
Hemet FD	5	$15,360	5	1	480-630	6.2%	$604
Murrieta FD	4	$9,530	4	0	0	0.0%	$0
Norco FD	2	$4,750	2	0	480	0.0%	$0
Palm Springs FD	5	$6,115	5	0	360-480	0.0%	$0
Pechanga FD	2	$5,430	2	0	0	0.0%	$0
Riverside County FD	95	$249,411	95	3	360-480	1.0%	$740
Riverside FD	17	$11,875	17	1	480	4.5%	$60
Other Agencies	4	$10,600	4	0	0	0.0%	$0
USFS	12	$19,752	12	1	480	4.4%	$205
TOTALS	**156**	**$366,493**	**156**	**8**	**360-630**	**2.9%**	**$1,994**

Table 40: Estimated Impacts on Riverside County EOCs in a 0.2 Percent Annual Chance Flood (Levees Intact) Scenario

County	No. of Buildings	Replacement Cost ($1,000)	No. Non-Functional Buildings	Restoration Time (Days)	Mean Damage	Economic Loss ($1,000)
Riverside	43	$310,273	4	360-480	1.7%	$5,113

Table 41: Estimated Impacts on Riverside County Police Facilities in a 0.2 Percent Annual Chance Flood (Levees Intact) Scenario

Agency	Number of Buildings	Replacement Cost ($1,000)	# Non-Functional Buildings	Time to Restore (Days)	Mean Damage	Economic Loss ($1,000)
Riverside County Sheriff	30	$491,973	2	360-480	1.2%	$796
Other Agencies	21	$183,326	0	360-480	0.0%	$0
TOTALS	**51**	**$675,299**	**2**	**360-480**	**0.2%**	**$796**

Table 42: Estimated Impacts on Riverside School Districts in a 0.2 Percent Annual Chance Flood Scenario

Category	District Name	Number of Facilities/ Sites*	No. of Buildings	Replacement Cost ($1,000)	# Buildings w/ replacement cost data	# Non-Functional Buildings	Restoration Time (Days)	Mean Damage	Economic Loss ($1,000)
K-12 (default data)		151	**152**	$219,600	152	31	480	5.2%	$2,232
K-12 (providing data)	Alvord USD	26	**525**	$274,026	525	8	360-480	1.4%	$583
	Banning USD	11	186	$92,169	180	30	360-480	2.7%	$892
	Beaumont USD	20	209	$179,231	208	36	360-480	4.7%	$6,424
	Coachella Valley USD	30	707	$271,777	691	128	360-480	2.3%	$4,392
	Corona-Norco USD	49	855	$718,384	855	128	360-480	2.0%	$6,792
	Desert Center USD	2	25	$13,438	25	0	0	0.0%	$0
	Desert Sands USD	33	681	$519,732	655	212	360-480	2.0%	$16,475
	Hemet USD	29	621	$294,809	620	81	360-480	2.0%	$5,681
	Jurupa USD	29	547	$285,015	547	8	360-480	1.3%	$330
	Lake Elsinore USD	29	539	$0	0	116	360-720	7.1%	$0
	Menifee Union SD	13	213	$116,628	211	0	0	0.0%	$0
	Moreno Valley USD	36	639	$361,250	639	31	480	6.0%	$1,451
	Murrieta Valley USD	18	470	$299,250	470	0	0	0.0%	$0
	Nuview Union SD	5	79	$38,186	79	7	360-480	1.2%	$901
	Palm Springs USD	31	493	$414,806	492	150	360-360	3.3%	$7,922
	Palo Verde USD	9	121	$83,907	121	0	0	0.0%	$0
	Perris SD	12	175	$98,885	174	13	360-480	3.1%	$1,315
	Perris Union High SD	13	226	$202,431	221	12	360-480	2.6%	$5,405
	Riverside Co Office of	167	326	$149,923	159	66	360-480	4.4%	$2,013
	Riverside USD	47	1,015	$497,272	1,015	22	360-480	1.8%	$941
	Romoland SD	5	63	$46,793	63	0	0	0.0%	$0
	San Jacinto USD	16	213	$130,375	213	62	360-480	1.6%	$5,380
	San Jacinto Valley	1	13	$1,105	13	1	360-480	0.4%	$14
	Temecula Valley USD	32	643	$548,085	642	0	0	0.0%	$0
	Val Verde USD	25	386	$388,179	384	0	0	0.0%	$0
	Yucaipa-Calimesa	1	11	$23,878	11	0	0	0.0%	$0
CCD (providing data)	Desert CCD	1	75	$84,687	74	62	360-480	4.1%	$4,130
	Mt. San Jacinto CCD	2	73	$96,439	73	30	360-480	4.5%	$2,155
	Palo Verde CCD	5	12	$37,440	12	0	0	0.0%	$0
	Riverside CCD	4	98	$138,142	98	0	0	0.0%	$0
TOTALS		**852**	**10,39**	**$6,625,842**	**9,622**	**1,234**	**360-720**	**3.3%**	**$75,428**

Table 43: Estimated Impacts on Riverside County Hospitals in a 0.2 Percent Annual Chance Flood Scenario

Hospital Size*20*	Supervisorial District	No. of Hospital Sites	Number of Buildings	Number of Licensed Beds	Replacement Cost ($1,000)	No. Buildings w/ replacement cost data	# Non-Functional Buildings	Restoration Time (Days)	Mean Damage	Economic Loss ($1,000)
Medium	1st	1	7	122	$36,575	7	0	0	0.0%	$0
Large		2	5	406	$0	0	0	360-540	0.0%	$0
Medium	2nd	0								
Large		2	8	533	$0	0	0	0	0.0%	$0
Medium	3rd	3	5	297	$98,000	5	0	540	0.0%	$0
Large		1	10	433	$200,792	10	0	0	0.0%	$0
Medium	4th	2	11	196	$7,474	5	0	540	0.0%	$0
Large		2	25	656	$0	0	0	540	0.0%	$0
Medium	5th	2	5	178	$20,778	4	0	0	0.0%	$0
Large		1	1	439	$0	0	0	0	0.0%	$0
TOTALS		**16**	**77**	**3,260**	**$363,619**	**31**	**0**	**360-540**	**0.0%**	**$0**

Note: In Riverside County, there are no hospitals which would be categorized by HAZUS as “Small” (<50 Licensed acute care beds)

- **Effects on Infrastructure:** A slow-rising flood situation will progress through a series of stages, beginning with minor rainfall and evolving to a major event such as substantial flooding. Once flooding begins, personnel will be needed to assist in rescuing persons trapped by floodwaters, securing utilities, cordoning off flood areas, and controlling traffic. These actions may overtax local agencies, and additional personnel and resources may be required. It is anticipated that existing mutual aid resources would be used as necessary to augment local resources.

  Many essential public and quasi-public facilities and hazardous materials sites are located within the 100- or 500-year flood zones of Riverside County. As of the writing of the Safety Element of the County's General Plan, these included 14 of the County's 39 airports; 4 of 18 hospitals; 47 of 109 police stations, fire stations, and emergency operation centers; 92 of 380 schools; 446 of 1,306 highway bridges; and 695 of 1,978 hazardous materials sites.

- **Effects on Agriculture & the Environment:** As the historical events in Riverside County show, effects on agriculture can be devastating. Flooding can damage crops, livestock, and dairy stock. In addition to the obvious impacts on animals and crops, flooding can have deleterious effects on soil and the ability to reinvigorate the agricultural activities affected once the flood waters recede. The environment and its fauna could be washed away if residing within the listed scenarios. The return of the ecosystems that inhabit those areas would take months to years to return to pre-disaster levels.

- **Climate Change and Flooding:** Floods are among the most damaging natural hazards in unincorporated Riverside County, and climate change is expected to make flood events worse. Although climate change may not change average precipitation levels significantly, scientists expect that it will cause more years with extreme precipitation events. This means that more years are likely to see particularly intense storm systems that drop enough precipitation over a short enough period to cause flooding. Climate change is expected to increase the frequency and severity of droughts that cause soil to dry out and become hard. When precipitation does return, more water runs off the surface rather than being absorbed into the ground, which can lead to floods. Some recent studies indicate that atmospheric rivers may strengthen as a result of climate change. This is expected to lead to an increase in the number of storms caused by atmospheric rivers (Dettinger 2018; Gershunov et al. 2013). Additionally, there is some indication that the most powerful

atmospheric river storms will increase in intensity (Dettinger, Das, and Cayan, n.d.).

- Source: https://planning.rctlma.org/Portals/14/genplan/2021/elements/Ch06_Safety_092821.pdf
- Source 2: https://wrcog.us/DocumentCenter/View/7478/Western-Riverside-Adaptation-and-Resiliency-Strategy_Vulnerability-Assessment

Risk Assessment Conclusion

Flooding due to heavy precipitation or dam failure is a potential hazard in Riverside County, with the resultant possibilities for damage to property and loss of life. Severe flooding can be particularly costly. In a relative sense, flooding due to precipitation does not present the degree of danger posed by other hazards such as major earthquakes. If there is flooding due to dam failure, the danger could be cataclysmic.

Relationship to Other Hazards – Cascading Effects

Fire can breakout because of dysfunctional electrical goods. Hazardous materials can also get into floodways, causing health concerns and polluted water supplies.

5.3.10 Civil Disorder

Severity: 3

Probability: 2

OA Jurisdictions Affected by Civil Disorder

- All incorporated cities of Riverside County

Hazard Definition

Civil disorder or unrest is usually triggered by dramatic political or social events. Every major metropolitan area in California has experienced and is at risk for, civil disorder. The most significant civil unrest incident in the State was the 1992 Los Angeles Civil Disturbance that resulted in 53 deaths, over 2,300 injuries and over $800 million in damages. This event also precipitated simultaneous, but smaller, incidents throughout California and the country.

Civil disorder is an incident intended to disrupt community affairs and threaten the public safety. Civil disorder includes riots, mob violence, and any unlawful demonstration resulting in police intervention and arrests. Civil Unrest is generally associated with controversial political, judicial, and/or economic issues and events.

History

Riverside County is not a place where there has been a lot of historic civil disturbance events of noticeable magnitude. There are locations within Riverside County where large public gatherings take place. These locations have the potential for unstable conditions, possibly affecting the ability of a jurisdiction in the County to provide sufficient law enforcement and fire protective services.

History of Significant Events:

June 1-20, 2020 – George Floyd Protest-protest against police brutality

July 2020 – Roe v Wade protest

2017- Protest President Trump and rally for Woman's Rights

2016- Protest Donald Trump at UC Riverside and rallies supporting Donald Trump in Temecula

2012 – Rallies against violent crimes at the Riverside Public Library and Union Strikes at Riverside County.

2011 – Protests

2004 - A demonstration at county administrative buildings that were part of a nationwide protest sponsored by the American Family Rights Association.

Risk Assessment

During a Civil Unrest incident that affects Riverside County, there are certain critical facilities within the County that may be more at risk than others. These critical facilities include venues for musical concerts and sporting events, facilities where legal and illegal demonstrations are held, and any other facilities with events that attract large numbers of people. All of these situations create significant traffic congestion and the potential for disruptive behavior.

- **Effects on people and housing.** The effects of a Civil Unrest are varied and usually based on the type, severity, scope, and duration of the disturbance. Effects may include illegal assemblies, injuries, and even loss of life.

- **Effects on commercial and industrial structures**. Effects may include traffic congestion or gridlock, illegal assemblies, disruption of utility service, and property damage.

- **Effects on infrastructure.** Effects may include traffic congestion or gridlock, disruption of utility service, and property damage.

- **Effects on agriculture.** Effects may include traffic congestion or gridlock, disruption of goods transportation services, and property damage.

Risk Assessment Conclusion

The overall risk of civil unrest in Riverside County is low, however, this is based on the political community environment which can change drastically due to significant social or political events occurring worldwide.

Relationship to Other Hazards – Cascading Effects

Civil Unrest may lead to a fire, destruction of property, disruption of power, injury to persons, and even loss of life. The potential to affect public safety response to other public safety calls.

5.3.11 Drought

Severity: 3

Probability: 3

OA Jurisdictions Affected by Drought

- All incorporated cities of Riverside County
- Unincorporated areas of Riverside County

Hazard Definition

A drought is a long period of extremely dry weather when there is not enough rain for the successful growing of crops or the replenishment of water supplies.

Drought is a gradual phenomenon. Normally, one dry year does not constitute a drought in California but rather serves as a reminder of the need to plan for droughts. California's extensive system of water supply infrastructure (reservoirs, groundwater basins, and interregional conveyance facilities) generally mitigates the effects of short-term dry periods for most water users.

Drought can have secondary impacts. For example, drought is a major determinant of wildfire hazard, in that it creates greater propensity for fire starts and larger, more prolonged conflagrations fueled by excessively dry vegetation, along with reduced water supply for firefighting purposes. Drought is also an economic hazard. Significant economic impacts on California's agriculture industry can occur as a result of short- and long-term drought conditions; these include hardships to farmers, farm workers, packers, and shippers of agricultural products. In some cases, droughts can also cause significant increases in food prices to the consumer due to shortages.

Past experience with California droughts tells us that drought impacts are felt first by those most dependent on or affected by annual rainfall – agencies fighting forest fires, ranchers engaged in dryland grazing, rural residents relying on wells in low yield rock formations, or small water systems lacking a reliable water source.

The driest single year in California's measured hydrologic history is 1977.

1977 was characterized as a "year with no water," but 2020-2021 was a "hotter year with no water," because of the combination of low precipitation with extremely high temperatures.

California Water Resources noted that the dry year is part of a larger California drought trend that has spanned the past three years. In May 2021, Governor Gavin Newsom expanded the state's drought emergency to cover 30 percent of the population, citing extreme "water shortages." Climate scientists studying California weather patterns find that drought conditions are likely to become more frequent and persistent over the 21st century due to climate change. The experiences of California during recent years underscore the need to examine more closely the state's water storage, distribution, management, conservation, and use policies.

California Water Conservation Efforts as of 2022:

In April 2021, Governor Newsom signed an emergency proclamation directing state agencies to take immediate action to bolster drought resilience across the state and declaring a State of Emergency in several counties due to severe drought conditions. In October 2021, following the second driest year on record and with near record low storage in California's largest reservoirs, Governor Gavin Newsom issued a proclamation extending the drought emergency statewide and further urging Californians to step up their water conservation efforts as the western U.S. faces a potential third dry year. The proclamation requires local water suppliers to implement water shortage contingency plans that are responsive to local conditions and prepare for the possibility of a third dry year.

An executive order was signed in March 2022, the Governor ordered the State Water Resources Control Board (SWRCB) to evaluate the adoption of regulations banning irrigation of "non-functional" turf (or grass), such as decorative grass adjacent to large industrial and commercial buildings. The ban would not include residential lawns or grass used for recreation, such as school fields, sports fields, and parks. The Department of Water Resources estimates this ban alone will result in potential water savings of several hundred thousand acre-feet. An acre-foot of water serves the needs of approximately three households for a year. To further conserve water and strengthen drought resiliency, Governor Newsom is encouraging suppliers, where appropriate, to consider going above and beyond the Level 2 of their water shortage contingency plans, activating more ambitious measures. The Governor has also ordered state agencies to submit funding proposals to support the state's short- and long-term drought response, including emergency assistance to communities and households facing drought-related water shortages, facilitating groundwater recharge and wastewater recycling, improvements in water use efficiency, protecting fish and wildlife, and minimizing drought-related economic disruption. Five levels of drought response are identified. These range from Level 1, representing an: Abnormally Dry period (calling for raising awareness), to Level 3, a Severe Drought (requiring mandatory conservation in some communities and emergency

actions), to Level 5, an Exceptional Drought (water supplies may be cut off and maximum response). A Governor's emergency drought proclamation may be initiated at Level 3.

Drought can be defined according to meteorological, hydrological, or agricultural criteria.

Meteorological drought is usually based on long-term precipitation departures from normal, but there is no consensus regarding the threshold of the deficit or the minimum duration of the lack of precipitation that makes a dry spell an official drought.

Hydrological drought refers to deficiencies in surface and subsurface water supplies. It is measured as stream flow, as well as lake, reservoir, and ground water levels.

Agricultural drought occurs when there is insufficient soil moisture to meet the needs of a particular crop at a particular time. A deficit of rainfall over cropped areas during critical periods of the growth cycle can result in destroyed or underdeveloped crops with greatly depleted yields. Agricultural drought is typically evident after meteorological drought but before a hydrological drought.

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. This may also be called a water management drought.

History

Riverside County chronically experiences drought cycles. Drought causes stress on the County's ability to provide water to the community. In addition, drought conditions can cause extensive weakening of trees in forested areas causing them to become highly vulnerable to disease and insect infestation. Many trees have weakened and died, creating a severe fire hazard. Furthermore, wildland brush areas were dry, presenting wildfire risk.

Figure 25: California's drought level the month of November 2017-2020

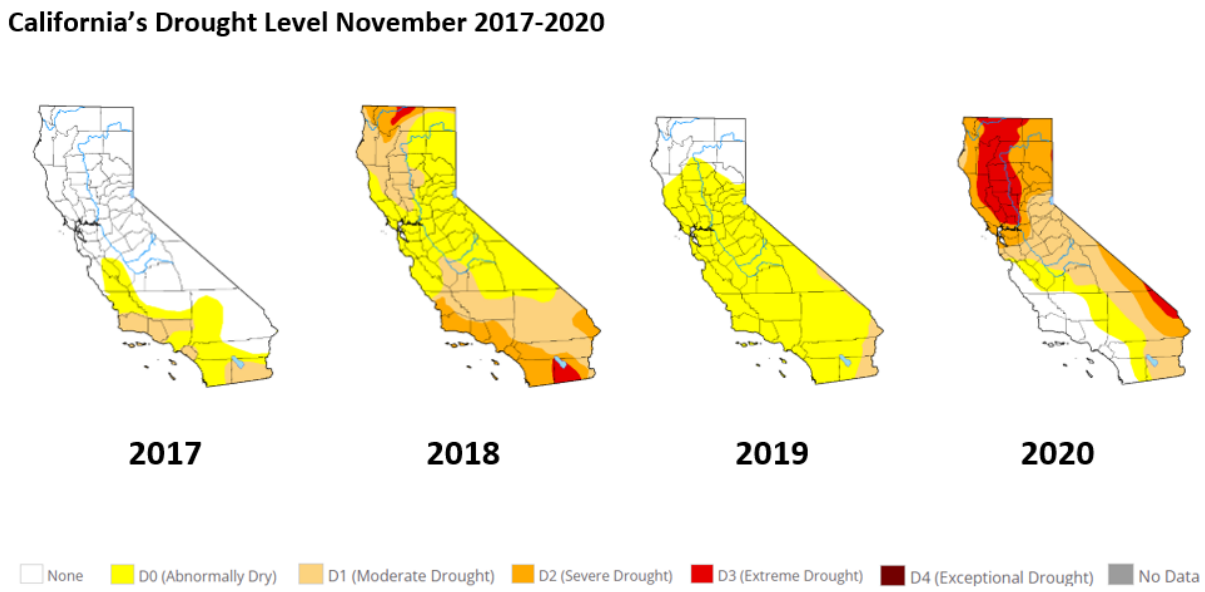
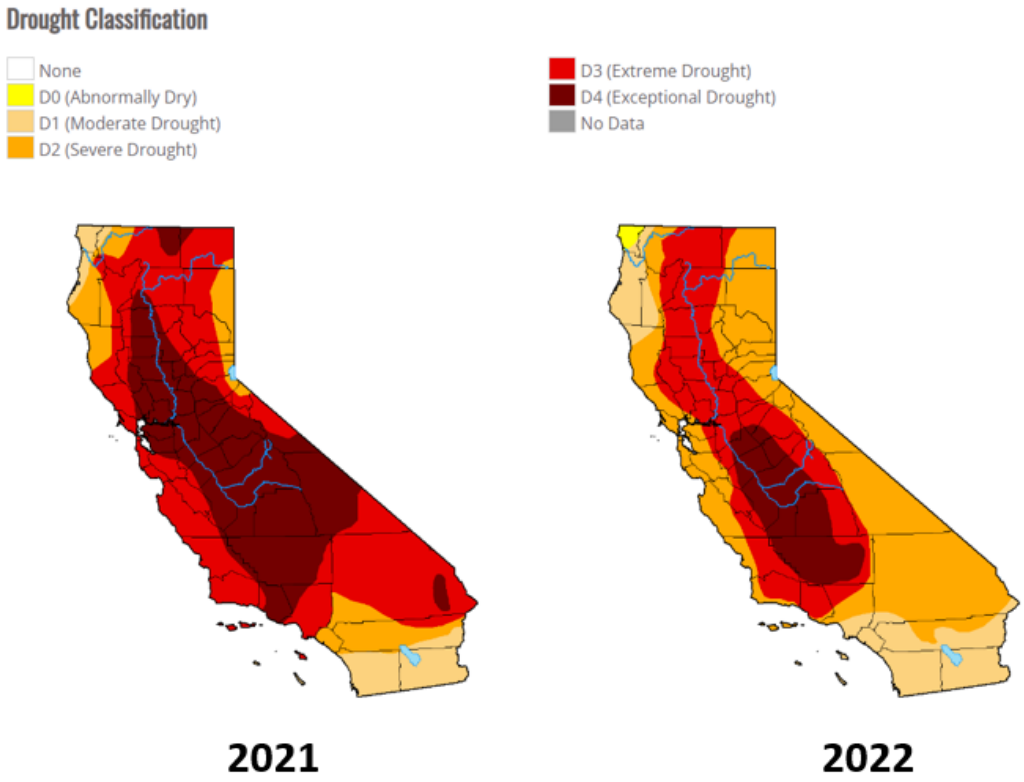


Figure 26: California's drought level November 2021-2022



Drought Risk Assessment

The Department of Water Resources produces a California Water Plan every five years that not only includes a statewide water budget but also regional watershed water budgets. These water budgets are based on California Department of Finance population projections and indicate clearly that demand for water will exceed supply in 2020 whether or not a drought condition exists at that time. The largest average-year shortages are forecasted for the South Coast Region, which heavily relies on imported water. Future average-year shortages in the South Coast Region reflect forecasted population growth plus lower Colorado River supplies as California reduces its use of Colorado River water to the State's basic apportionment.

Although a drought in and of itself is not a direct threat to property and life, the impact on the County's agricultural industry and home development can be monumental. The costs to the County for the current drought in terms of fire damage and forest management have been in the millions. This is a chronic problem for Riverside County and accounts for significant indirect costs, loss of property and threat to human life.

Drought Hazards and the relationship to climate change:

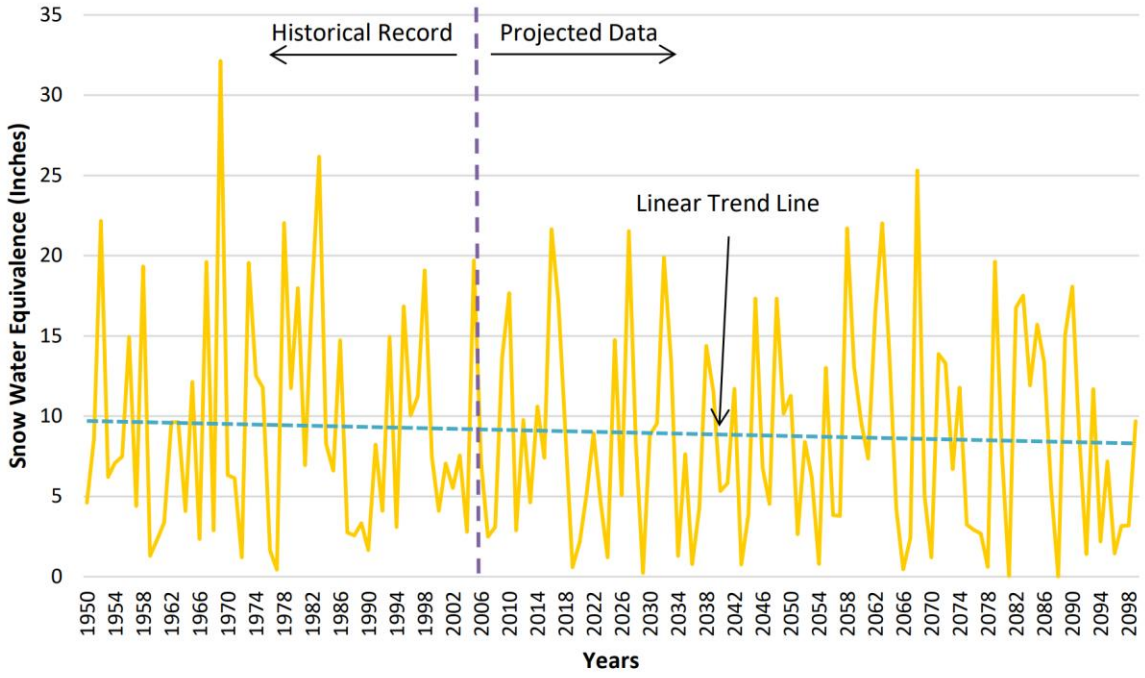
The OA contains numerous water agencies and municipal departments that supply water to customers from local and imported sources. From a local government standpoint, the mix of water agencies presents a challenge to implementing jurisdictional water conservation strategies, as some jurisdictions have multiple providers within their boundaries, and some water suppliers function as sub-agencies to others. Eastern Municipal Water District (EMWD) and Western Municipal Water District (WMWD), which account for the majority of residential and commercial water accounts in the subregion, import roughly 75 percent of their water from the Sacramento-San Joaquin Bay Delta via the State Water Project and from the Colorado River (EMWD 2011; WMWD 2011). The imported sources rely on winter snowpack to deliver supplies year-round. Other parts of the subregion depend on groundwater resources. Aquifer recharge occurs when local rainwater percolates through the ground.

Most of the imported water used in the WRCOG subregion comes from the Sierra Nevada range. Reduced winter precipitation levels and warmer temperatures have greatly decreased the size of the Sierra Nevada snowpack (the volume of accumulated snow), which in turn makes less fresh water available for communities throughout California. An example of this change can be seen in the figure below, which shows historic and projected April snow water equivalence from 1950 to 2099.

Source: https://wrcog.us/DocumentCenter/View/7478/Western-Riverside-Adaptation-and-Resiliency-Strategy_Vulnerability-Assessment

As seen in Figure 38, Climate Change can greatly impact the polarization of extreme wet and dry intermittent periods. When comparing November 2022 data with January 2023 data, clear distinctive extreme periods of drought or extreme weather in the form of storms can be seen and potentially can occur more frequently.

Figure 27: April Snow Water Equivalence in the Southern Sierra 1950-2099



Source: CEC 2019

Source: https://wrcog.us/DocumentCenter/View/7478/Western-Riverside-Adaptation-and-Resiliency-Strategy_Vulnerability-Assessment

- **Effects on people and housing.** The effects of a Drought are varied and usually based on the duration of the disturbance. Effects may impact the general public in the form of water conservation measures mandated by jurisdictions with constrained water availability. The general public's confidence in jurisdictional governance during a drought emergency would be minimal. Drought can also cause long-term public health problems, including shortages of drinking water and poor-quality drinking water.

  Source: https://www.cdc.gov/nceh/drought/implications.htm#:~:text=Drought%20can%20also%20cause%20long,mosquitoes%20breeding%20in%20stagnant%20water

- **Effects on commercial and industrial structures**. Effects may include limitation and increase regulation of water use. The impact to structures is minimal.

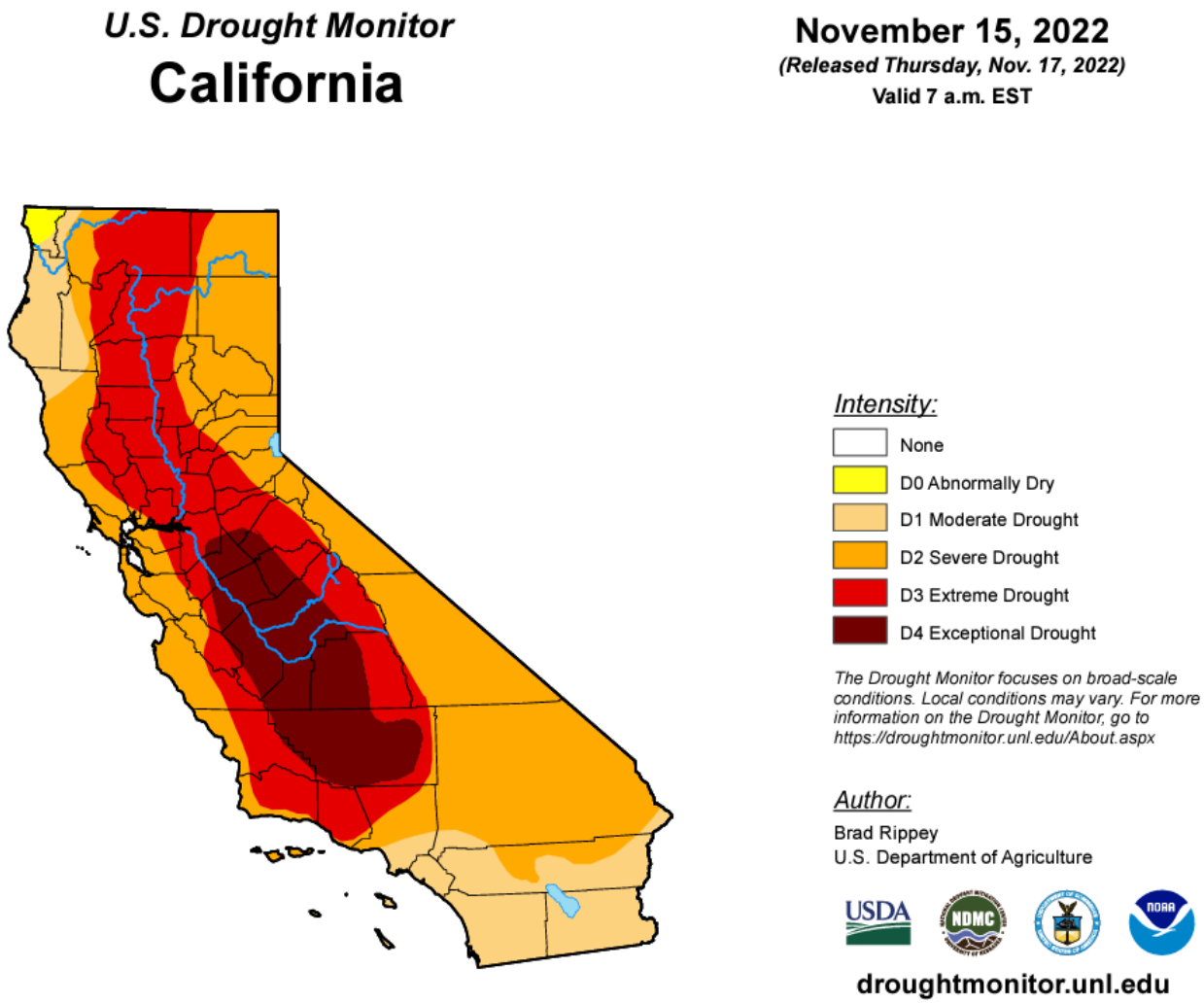
- **Effects on infrastructure.** Effects may include demand on interagency cooperation between water providers.

- **Effects on agriculture & the environment.** Effects may include limitation of water available for farming purposes which could impact the general tax revenue being received by jurisdictions. The environment could also have large scale impacts from extended drought periods leading to potential death of flora and fauna not acclimated to extreme drought conditions.

Relationship to Other Hazards – Cascading Effects

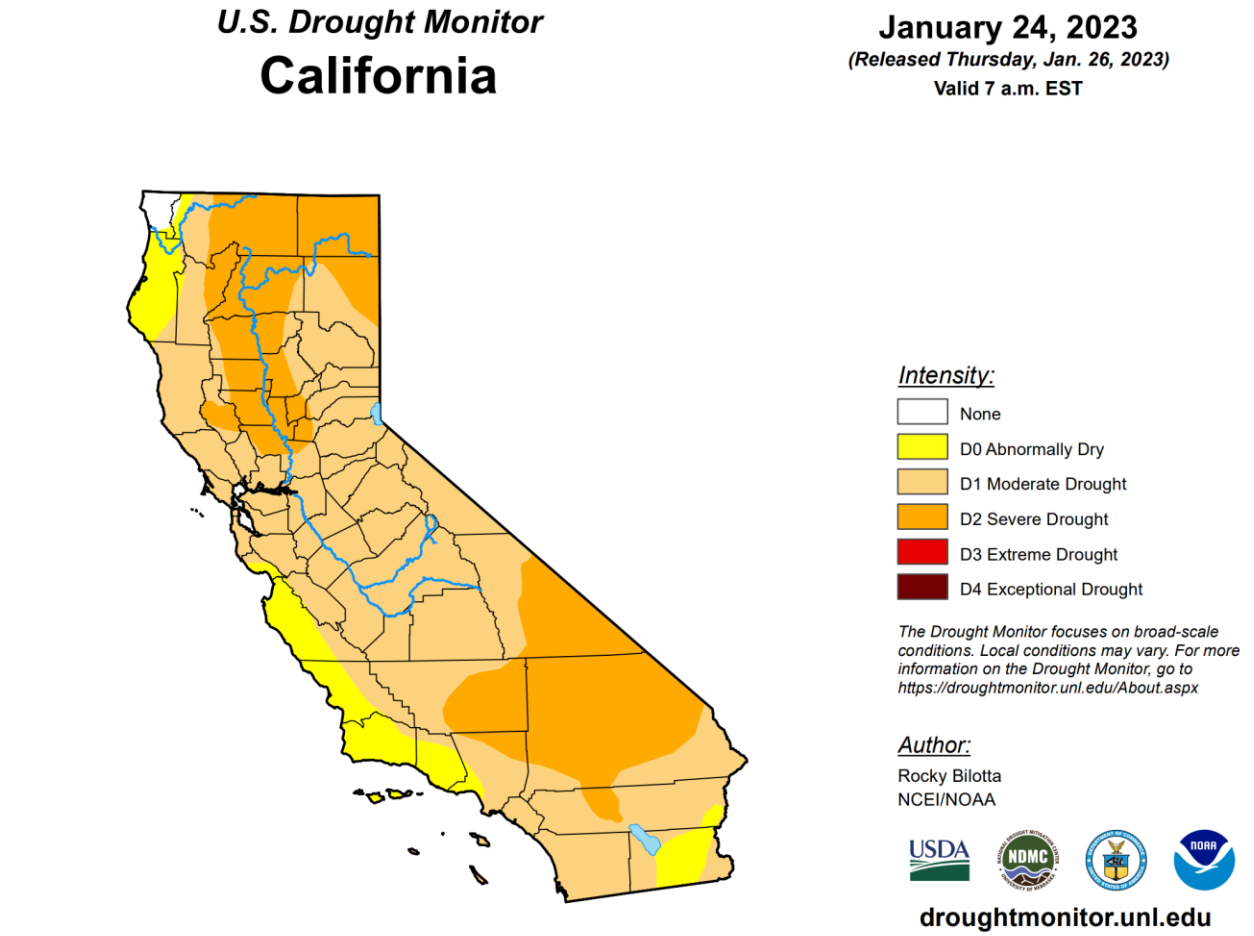
Drought can increase the severity of other hazards. For example, drought can lead to an increase in dead vegetation when can increase fire hazards. It can also lead to increased insect infestations.

Figure 28: U.S Drought Monitor – California Compared - November 2022 and January 2023



Week	Date	None	D0-D4	D1-D4	D2-D4	D3-D4	D4	DSCI
Current	2022-11-15	0.00	100.00	99.48	84.97	40.92	12.73	338
Last Week	2022-11-08	0.00	100.00	99.51	88.09	41.39	16.57	346
3 Months Ago	2022-08-16	0.00	100.00	99.76	97.53	43.16	16.57	357
Start of Calendar Year	2021-12-28	0.00	100.00	100.00	86.28	32.93	0.84	320
Start of Water Year	2022-09-27	0.00	100.00	99.76	94.01	40.91	16.57	351
One Year Ago	2021-11-16	0.00	100.00	100.00	92.43	80.28	37.62	410

Figure 28 *continued*



Week	Date	None	D0-D4	D1-D4	D2-D4	D3-D4	D4	DSCI
Current	2023-01-24	0.64	99.36	89.56	32.57	0.00	0.00	221
Last Week	2023-01-17	0.64	99.36	92.12	42.84	0.00	0.00	234
3 Months Ago	2022-10-25	0.00	100.00	99.77	91.83	43.06	16.57	351
Start of Calendar Year	2022-12-27	0.00	100.00	97.94	80.56	35.50	7.16	321
Start of Water Year	2022-09-27	0.00	100.00	99.76	94.01	40.91	16.57	351
One Year Ago	2022-01-25	0.00	100.00	99.25	66.39	1.39	0.00	267

Source: https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?CA

5.3.12 Nuclear/Radiological Incident

Severity: 5

Probability: 3

OA Jurisdictions Affected by Nuclear Incidents

- All incorporated cities of Riverside County
- Unincorporated areas of Riverside County

Hazard Definition

Radiological Accidents

Radioactive materials are routinely transported in California. These materials include the medical and industrial sources described below, as well as wastes that have radioactive components. Many of the radioactive waste shipments come from research and cleanup efforts at national laboratories.

Radiological accidents that result in the release of radioactive materials may result in long-term health risks and contamination of the state resources, including air, water supply, groundwater, and agricultural lands.

Profiling Radiological Accident Hazards

Due to strict regulation of nuclear power plants in the United States, significant nuclear power incidents that can cause harm to the public have a low probability of occurrence, and none have occurred in California. Even though the probability of a catastrophic event involving a nuclear power plant is extremely low and these plants are extremely well protected, the consequences of a severe accident or a successful terrorist attack on a nuclear power plant that results in a release of radioactive materials could be very significant.

State and local governments having jurisdiction within ten miles of an operating nuclear power plant must plan, train, and conduct emergency exercises annually in accordance with federal regulations. Detailed emergency plans are maintained by each affected agency. Four Emergency Classification Levels (ECLs) have been established in federal regulations to characterize the severity of the emergency and the response actions required. The ECLs must be used as the foundation for emergency response planning, training and exercises.

Planning Zones

A series of zones have been established around each nuclear power plant to clearly identify the required activities in the event of an accident. Although three specific zones are identified, efforts to protect public health and safety and the environment are made without regard to whether these areas are inside or outside of these zones:

2 The Emergency Planning Zone is an approximate 10-mile radius around the plants. Plans for this zone are in place to protect people, property, and the environment from the effects of exposure to a radioactively contaminated plume.

3 The Ingestion Pathway Zone covers an approximate 50-mile radius around the plant. In this zone, plans are in place to mitigate the effects of radioactive contamination to agriculture, and food processing and distribution.

Two general situations that could affect Riverside County are:

- A situation involving nuclear weapons, which is discussed in the Terrorism section of this MJLHMP (Section 5.3.7)

- A situation involving the transportation of nuclear materials

As will be discussed in the Terrorism section of this LHMP, the possibility exists that a terrorist organization might acquire the capability of creating a small nuclear detonation. A single nuclear detonation in the United States would likely produce fallout affecting an area many times greater than that of the blast itself. There is also the possibility that a terrorist will construct a “dirty bomb”, a bomb that is used to distribute nuclear-contaminated materials. It would have less of an effect than a “traditional” nuclear bomb, but the terror effect on the population would be great.

A nuclear incident could be initiated by a transportation emergency, either accidental or intentional. See the Transportation Emergencies section of this LHMP (Section 5.3.14).

SONGS is located on the Pacific Coast in northwestern San Diego County, approximately 4 miles southeast of the City of San Clemente. Surrounding San Onofre is a Basic Emergency Planning Zone, approximately 10 miles in radius within which certain precautionary actions must be taken and specific precautionary plans must be prepared. This zone does not include any portion of Riverside County. Beyond this zone is an area that could be affected by radioactive fallout being deposited in such a manner as to detrimentally affect the human food chain, which includes all of Riverside County. This area is identified as the Ingestion Pathway Zone. Specifically, the primary threat is that of

radioactive iodine 131 being deposited upon fodder consumed by dairy cows and subsequently appearing in milk in the public marketplace.

History of Events

Riverside County has not experienced a nuclear accident.

Risk Assessment

Transportation of nuclear and/or irradiated materials is of growing concern. A severe transportation incident could require the evacuation of a large number of people, major rerouting of traffic systems, and an expensive decontamination process for the area involved. Ancillary problems associated with such an incident are discussed in the sections of this LHMP dealing with Hazardous Materials and with Transportation Incidents.

Radiological Waste Transportation

Since 1989, the staff of the Energy Commission has represented California on two western state groups: the Western Governors' Association WIPP Transportation Advisory Group and the Western Interstate Energy Board's High-Level Radioactive Waste Committee. Both groups work with the U.S. Department of Energy and other state regional groups to develop accident prevention and emergency response plans for major federal non-classified shipments of radioactive waste. Staff also coordinates the California Nuclear Transport Working Group that develops and updates accident prevention and emergency response plans for federal shipments of transuranic waste to the Waste Isolation Pilot Plant (WIPP) in New Mexico.

To mitigate disaster, federal regulations require that:

- radiological materials transported by train use special packaging based on the hazard of the shipment
- there are extensive worker training and documentation
- vehicle and packages of radioactive materials are inspected
- The waste travels via specific, controlled routes.

More information about radiological waste transportation can be found on Cal OES's radiological *transportation website.*

A detailed discussion of radiation hazards and their effects on humans along with a description of the operation of a nuclear power generating facility and the hazards posed thereby are contained in the State of California Nuclear Power Plant Emergency Response Plan and in other documents.

The State Nuclear Power Plant Emergency Response Plan assigns to the County of Riverside responsibility for certain actions to protect the public and the environment within Riverside County from the effects of an accident. The plan also lists the support and assistance available from various State and Federal organizations.

- **Effects on people and housing.** Depending on levels of radiation exposure, the effects could range from minimal to devastating. An impact of an incident of this magnitude could greatly impact the public's confidence in jurisdictional governance during an incident.

- **Effects on commercial and industrial structures.** Depending on levels of radiation exposure, the effects could range from minimal to devastating.

- **Effects on infrastructure.** Depending on levels of radiation exposure, the effects could range from minimal to devastating.

- **Effects on agriculture & environment.** Depending on levels of radiation exposure, the effects could range from minimal to devastating.

Risk Assessment Conclusion

The nearest plant to Riverside County is San Onofre, which is a three-tower facility in San Diego County. In 1992 the site retired Tower 1. Towers 2 and 3 remained operational until 2012. In March of 2015 SoCal Edison was granted permission to decommission towers 2 and 3 and permanently close the site. The estimated date for full closure of the power plan is December 31, 2031.

The County is far enough away from nuclear power plants that cataclysmic exposure is not likely. There is the possibility of Riverside County being used as a major evacuation route from a nuclear plant accident. This would tax the County's response resources. The radiation from an accident would, of course, negatively affect the area.

Relationship to Other Hazards – Cascading Effects

Cascading effects of a nuclear incident could include contaminated water, air, and soil. It could also impact first responders and the 911 system.

5.3.13 Extreme Weather

Severity: 3

Probability: 3

OA Jurisdictions Affected by Extreme Weather

- All incorporated cities of Riverside County
- Unincorporated areas of Riverside County

Hazard Definition

Extreme weather hazards in Riverside County include:

- Extreme Heat
- Severe Cold
- Wind Event
- Fog Event
- Agricultural Event

Climate Change can impact weather patterns within the County. Climate changes can increase or change effects of weather. Some changes may include reduced water supply, increased temperatures, decreased precipitation and increased wildfire risks.

The National Climate Data Center (NCDC) receives Storm Data from the National Weather Service. The National Weather service receives their information from a variety of sources, which include but are not limited to county, state and federal emergency management officials, local law enforcement officials, SKYWARN spotters, NWS damage surveys, newspaper clipping services, the insurance industry and the general public.

Storm Data Disclaimer:

Storm Data is an official publication of the National Oceanic and Atmospheric Administration (NOAA) which documents the occurrence of storms and other significant weather phenomena having sufficient intensity to cause loss of life, injuries, significant property damage, and/or disruption to commerce. In addition, it is a partial record of other significant meteorological events, such as record maximum or minimum temperatures or precipitation that occurs in connection with another event. Some information appearing in Storm Data may be provided by or gathered from sources outside the National Weather Service (NWS), such as the media, law enforcement and/or other government agencies,

private companies, individuals, etc. An effort is made to use the best available information but due to time/resource constraints, information from these sources may be unverified by the NWS. Therefore, when using information from Storm Data, customers should be cautious as the NWS does not guarantee the accuracy or validity of the information.

Table 44: Storm Data (4/30/1950 to 8/31/2022)

Type	# of Events	Property Loss	Crop Loss	Deaths	Injuries
Drought	26	N/A	N/A	N/A	N/A
Dust Storm	41	645 K	100 K	0	77
Flood	355	195.463 M	5.217 M	8	31
Fog	27	25K	0	0	21
Funnel Cloud	26	0	0	0	0
Hail	30	131.5 K	10 K	0	2
High Winds	410	66.186 M	36.716 M	8	71
Lightning	37	279.5 K	17.1K	1	6
Precipitation	25	40.400 M	0	0	26
Snow and Ice	67	1.426 M	0	4	102
Strong Winds	53	3.115 M	47 K	1	2
Temp Extremes	25	1.330 M	1.175 M	31	39
Thunderstorm Winds	154	13.480 M	16 K	0	0
Tornado	26	21.537 M	0	0	4
Wild and Forest Fire	201	209.322 M	1.247 M	1	131
Totals	**1,329**	**2.229 B**	**174.429 M**	**53**	**507**

Note: Figures in the chart above were gathered from NOAA's Storm Event Database and may not be a complete listing of previous hazard occurrences.

Riverside County's weather has a history of extremes. There are essentially three weather regions in the County, each with its own type of weather and each with a different impact on the County. In some cases, the high temperatures in the desert are harmful to the public, but beneficial to agriculture. In other cases, a steady rainfall that raises the water table can be good for the County, yet too much rain will cause flooding and a disruption in the production of agricultural goods.

Average Climates across the County

The Weather Tables display the average climate for several areas across the County of Riverside. The cities included are Riverside, Idyllwild and Blythe. These cover the Desert, Mountain, and Valley Regions, and are clear examples of the weather extremes within the county.

Table 45: Riverside Climate

Climate Riverside - California °C | °F

	Jan	Feb	Mar	Apr	May	Jun
Average high in °F:	68	68	71	76	80	87
Average low in °F:	43	44	46	49	54	57
Av. precipitation in inch:	2.32	2.4	1.69	0.67	0.2	0.08
Days with precipitation:	-	-	-	-	-	-
Hours of sunshine:	-	-	-	-	-	-

	Jul	Aug	Sep	Oct	Nov	Dec
Average high in °F:	94	95	91	83	74	67
Average low in °F:	62	62	59	53	46	42
Av. precipitation in inch:	0.04	0.08	0.16	0.47	0.83	1.38
Days with precipitation:	-	-	-	-	-	-
Hours of sunshine:	-	-	-	-	-	-

Source: http://www.usclimatedata.com/climate/riverside/california/united-states/usca1695

Table 46: Idyllwild Climate

Climate Idyllwild - California °C | °F

	Jan	Feb	Mar	Apr	May	Jun
Average high in °F:	56	56	59	64	72	80
Average low in °F:	30	30	31	35	41	47
Av. precipitation in inch:	4.88	5.35	3.78	1.81	0.43	0.16
Days with precipitation:	-	-	-	-	-	-
Hours of sunshine:	-	-	-	-	-	-
Average snowfall in inch:	8	8	6	3	1	0

	Jul	Aug	Sep	Oct	Nov	Dec
Average high in °F:	86	86	81	71	62	55
Average low in °F:	54	54	49	41	34	29
Av. precipitation in inch:	0.67	0.79	0.83	1.22	2.52	3.7
Days with precipitation:	-	-	-	-	-	-
Hours of sunshine:	-	-	-	-	-	-
Average snowfall in inch:	0	0	0	0	2	4

Source: http://www.usclimatedata.com/climate/idyllwild/california/united-states/usca0506

Table 47: Blythe Climate

Climate Blythe - California °C | °F

	Jan	Feb	Mar	Apr	May	Jun
Average high in °F:	68	73	80	88	97	105
Average low in °F:	40	44	49	55	63	69
Av. precipitation in inch:	0.55	0.59	0.39	0.08	0.04	0.04
Days with precipitation:	-	-	-	-	-	-
Hours of sunshine:	-	-	-	-	-	-

	Jul	Aug	Sep	Oct	Nov	Dec
Average high in °F:	109	108	102	90	76	66
Average low in °F:	78	77	69	57	46	39
Av. precipitation in inch:	0.24	0.43	0.43	0.2	0.24	0.59
Days with precipitation:	-	-	-	-	-	-
Hours of sunshine:	-	-	-	-	-	-

Source: http://www.usclimatedata.com/climate/blythe/california/united-states/usca0506

5.3.13.1 Extreme Heat

Overview

Extreme heat can be described as overly hot temperatures that are sustained to the extent that human and animal overexposure can cause heat illness and death. Heat illness is a major cause of preventable morbidity in regions characterized by high ambient temperatures.

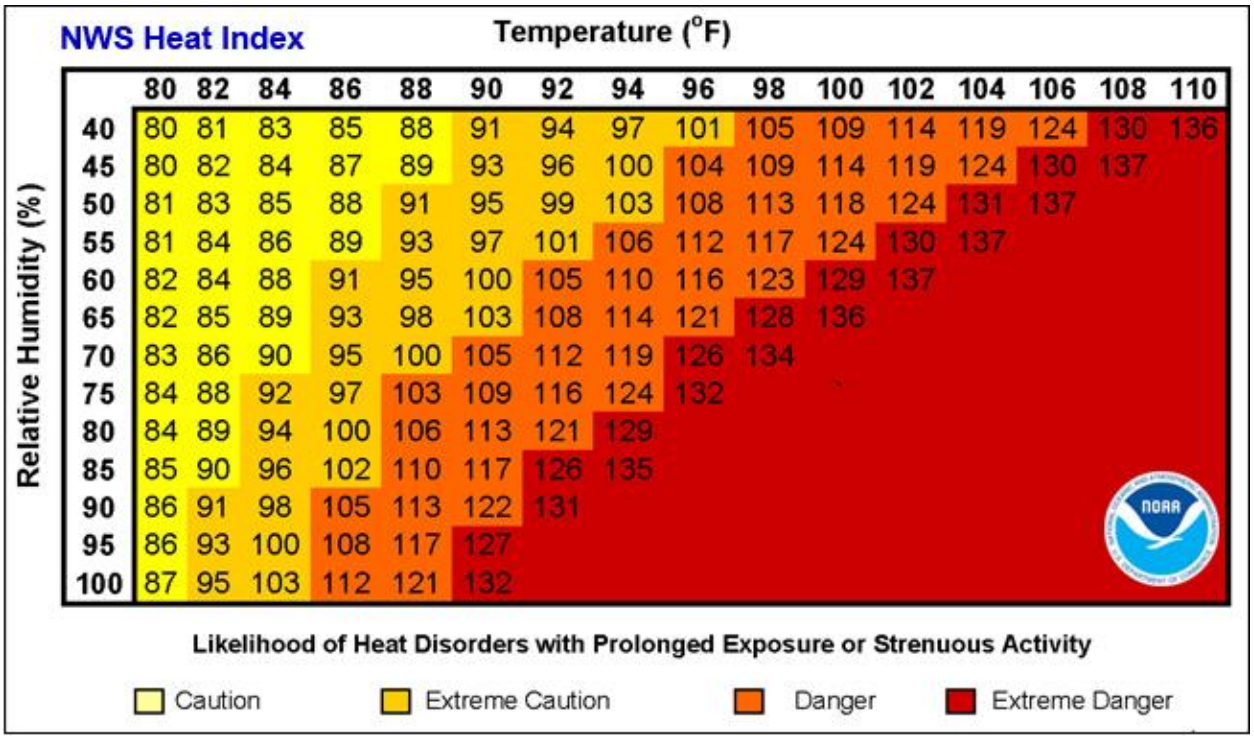
Riverside County has a wide range of temperatures, from freezing in some areas during the winter months to extremely hot temperatures for long periods of time during the summer in the deserts and other areas. Impacts happen almost annually. In September 2022, Riverside County and several other counties were threatened by rolling power outages during a period of high temperatures. The State Hazard Mitigation Plan addresses the issue of Extreme Heat Hazards, and this information has been included in this LHMP.

The figure on the next page illustrates the Heat Index (HI) as a function of heat and relative humidity. The Heat Index describes how hot the heat-humidity combination makes the air feel. As relative humidity increases, the air seems warmer than it is because the body is less able to cool itself via evaporation of perspiration. As the Heat Index rises, so do health risks.

Specifically:

- When the Heat Index is 90°F, heat exhaustion is possible with prolonged exposure and/or physical activity.
- When it is 90° to 105°F, heat exhaustion is probable with the possibility of sunstroke or heat cramps with prolonged exposure and/or physical activity.
- When it is 105° to 129°F, sunstroke, heat cramps or heat exhaustion is likely, and heatstroke is possible with prolonged exposure and/or physical activity.
- When it is 130°F and higher, heatstroke and sunstroke are extremely likely with continued exposure. Physical activity and prolonged exposure to the heat increase the risks.

Table 48: The National Weather Service (NWS) Heat Index



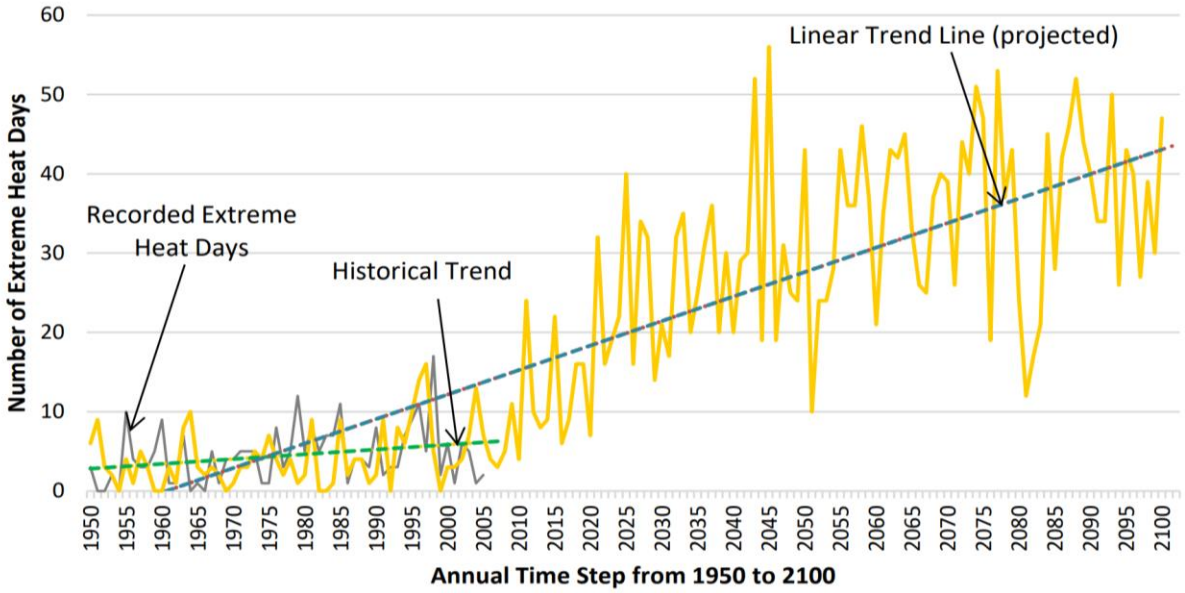
Source: http://www.nws.noaa.gov/os/heat/heat_index.shtml

The National Weather Service (NWS) will initiate its Heat Index Program Alert procedures when the high temperature is expected to exceed 105° to 110° (depending on local climate) for at least two consecutive days.

Extreme Heat and Climate Change

Climate change is expected to increase overall global temperatures (IPCC 2013). The subregion will experience this increase in average annual heat in a variety of ways, including an increased number of extreme heat days and heat waves, warmer summer evenings, and warmer average annual temperatures (CEC 2013). In addition to the direct physical threat posed by extreme heat, elevated temperatures impose air quality hazards and can increase the rate of ground-level ozone (smog) formation (EPA 2013). The number of extreme heat days is projected to rise through 2050, where the average year could include 15 extreme heat dates, and 30 extreme heat days per year by 2099 (CEC 2019).

Figure 29: Historic and Projected Extreme Heat Days, 1950 to 2099

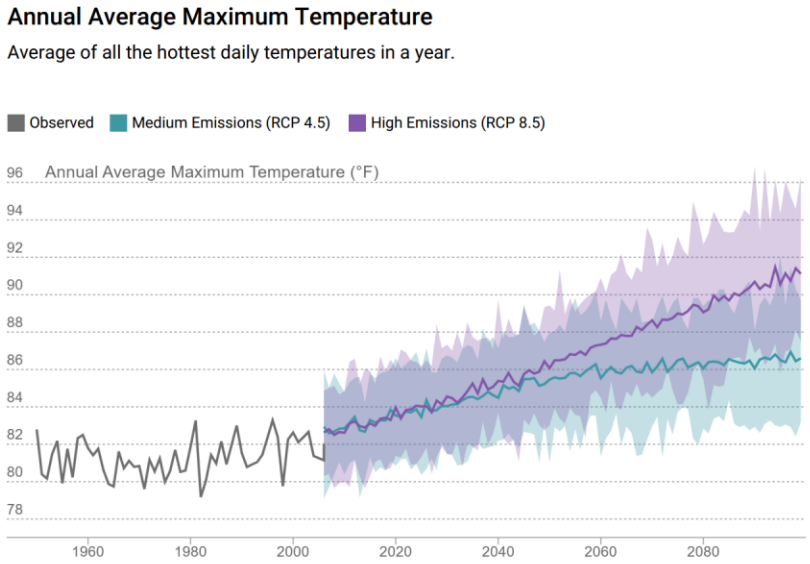


Source: CEC 2019

Additional data from the Cal-Adapt database also helps to further this profile of potential increasing number of heat days by showing the annual maximum temperatures for riverside will continue to increase. See figure below for a trend of increase.

Source: https://wrcog.us/DocumentCenter/View/7478/Western-Riverside-Adaptation-and-Resiliency-Strategy_Vulnerability-Assessment

Figure 30: Average Annual Maximum Temperatures in Riverside County



Observed (1961-1990) 30yr Average: 81.0 °F

	Change from baseline	30yr Average	30yr Range
Baseline (1961-1990)			
MODELED HISTORICAL	-	81.1 °F	80.9 - 81.4 °F
Mid-Century (2035-2064)			
MEDIUM EMISSIONS (RCP 4.5)	+4.3 °F	85.4 °F	83.3 - 87.4 °F
HIGH EMISSIONS (RCP 8.5)	+5.2 °F	86.3 °F	84.0 - 88.3 °F
End-Century (2070-2099)			
MEDIUM EMISSIONS (RCP 4.5)	+5.3 °F	86.4 °F	84.2 - 88.9 °F
HIGH EMISSIONS (RCP 8.5)	+8.7 °F	89.8 °F	86.9 - 93.3 °F

Source: https://cal-adapt.org/tools/local-climate-change-snapshot/

Profiling Extreme Heat Hazards (from the 2018 SHMP)

Heat waves do not cause damage or elicit the immediate response that floods, fires, earthquakes, and other disasters do. For example, the 1989 Loma Prieta Earthquake resulted in 63 deaths while the 1992 Northridge Earthquake was responsible for the loss of 55 lives. The catastrophic 2003 Southern California Firestorms resulted in 24 deaths. Heat waves, however, can be detrimental and have claimed many lives in comparison to other disasters. According to the 2018 SHMP, the worst single heat wave event in California occurred in Southern California in 1955, when an eight-day heat wave is said to have resulted in 946 deaths. The 2018 SHMP also states that the July 2006 heat wave in California caused the deaths of at least 650 people over a 13-

day period. Accordingly, to recent data, from 2000 to 2019 there have been 1,241 fatalities related to extreme heat events within California.

Source: https://www.trackingcalifornia.org/heat-related-illness/heat-related-deaths-summary-tables

Source: https://www.caloes.ca.gov/wp-content/uploads/002-2018-SHMP_FINAL_ENTIRE-PLAN.pdf

Additional sources such as the National Risk Index (NRI), provide additional profile details such as a hazard risk index for Heat Waves. Riverside County has a risk index of relatively high, measuring 21.47 out of 100.00 and is profiled as the fourth highest hazard within the available NRI hazard list. It also provides some additional potential expectations for annual loss within the OA. The estimation shows a total annual value of $815,258 with a majority being tied to agricultural values and an annual frequency value of 8.6 events per year.

The California Climate Adaptation Strategy (CAS), citing a California Energy Commission study, states that “over the past 15 years, heat waves have claimed more lives in California than all other declared disaster events combined.” Despite this history, however, not a single heat emergency was formally proclaimed at the state level or declared as a federal disaster between 1960 and 2008. California is on the frontlines of the climate crisis. To combat this all levels of government are taking steps to address climate changed. In 2021, CAS updated a statewide strategy to adapt to the impacts of climate change. The updates include:

- Organization of the state’s climate adaptation efforts around six outcome-based resilience priorities and increases our ability to measure progress. These priorities reflect and reinforce regional climate resilience priorities; were developed through robust public engagement and in consultation with California Native American tribes; and specify timeframes and metrics to drive progress and enable accountability.
- Breaking down silos and unifies collective climate adaptation efforts across all sectors and regions. An outcome-based approach sets strategic direction, supports coordinated, integrated efforts, recognizes how climate adaptation is implemented on the ground, and reflects our commitment to integrating climate resilience into the work of all state agencies.
- Make it easier for Californians to understand and contribute to California’s climate resilience agenda. Presented as an interactive website, the Strategy provides a central hub for information on the state’s climate resilience actions. The website

will stay updated to track progress and adjustments and integrate emerging best available science.

Treating Heat as a "Legitimate Disaster" (from the 2018 SHMP)

Historic losses due to extreme heat events raise several issues. First, since the primary goal of the SHMP is to significantly reduce the loss of life and injuries in California, heat is considered a legitimate disaster type. The number of people killed by extreme heat underscores the importance of mitigating its impacts. Second, heat events highlight the importance of thoughtful social vulnerability analyses. While changes to the built environment can greatly alter vulnerability to different hazards, social vulnerability and resiliency are especially important during heat events. For example, socially isolated elderly persons are especially vulnerable. Any mitigation efforts aimed at reducing heat losses will focus on ways to reduce social isolation, as well as changes to the built environment. Third, heat events illustrate how seemingly unrelated phenomena combine to create disaster. For example, the increased use of air conditioners during heat waves can lead to power outages, which makes extreme heat events even more deadly. Upgrading water and power infrastructure, then, is a form of extreme heat disaster mitigation. Situational and physical characteristics help to identify vulnerable populations that may not comfortably or safely gain access to and use disaster resources. Specifically, when discussing heat-related emergency preparedness, the following groups could be considered vulnerable or at greater risk in a heat emergency:

- People with a developmental/intellectual disability, i.e., a severe and chronic disability that is attributable to amental or physical impairment that begins before an individual reaches adulthood. These disabilities include cerebral palsy, epilepsy, and autism.
- People who are blind or have low vision.
- People who are deaf or hard of hearing.
- People with limited mobility.
- People with injuries from auto accidents, falls, sports, and/or war. These injuries can cause damage to the brain, spinal cord, hearing, and sight, and limit mobility.
- People with chronic conditions such as diabetes, arthritis, dialysis, asthma, and epilepsy.
- Older adults who have age-related limitations (e.g., slow movement, sight, and hearing limitations, etc.).
- Children who may be dependent on others, not only for care, but for decision-making. Because children process information and trauma differently than

adults, they may be unable to articulate their needs and, may decompensate faster than adults. They are also generally more susceptible to thirst, hunger, and temperature than adults.

Animals, including domestic pets, livestock, and poultry, are also susceptible to extreme heat. For example, dogs and cats are in danger of heat stroke in temperatures of 110°F. The heat wave of 2006 resulted in 15 reported pet deaths and more than 25,000 cattle and 700,000 fowl heat-related deaths. Heat wave impacts on livestock can lead to financial losses in California's agricultural economy.

Source: https://www.caloes.ca.gov/wp-content/uploads/002-2018-SHMP_FINAL_ENTIRE-PLAN.pdf

Table 49: 1991 - 2020 Heat Deaths in California

	< 1	1-4	5-9	10-14	15-19	20-24	25-44	45-64	65-84	85+	Total
1991	0	0	0	0	0	1	6	5	5	0	**17**
1992	0	0	0	1	2	0	8	3	2	1	**17**
1993	0	1	0	0	0	1	1	3	6	0	**12**
1994	0	0	0	0	0	0	7	7	9	0	**23**
1995	0	0	0	0	0	1	6	5	3	2	**17**
1996	0	1	0	0	0	0	5	8	7	0	**21**
1997	0	0	0	0	0	0	3	0	3	1	**7**
1998	0	0	0	0	0	2	3	2	2	0	**9**
1999	0	2	0	0	0	0	5	3	8	1	**19**
2000	2	0	1	0	0	2	10	9	8	3	**35**
2001	0	3	0	0	0	0	3	8	4	1	**19**
2002	2	1	0	0	0	1	12	4	3	1	**24**
2003	1	0	0	0	1	3	12	6	6	0	**29**
2004	1	2	0	0	0	1	9	8	6	1	**28**
2005	0	1	1	2	0	2	13	7	5	5	**36**
2006	1	0	0	0	0	3	22	48	38	10	**122**
2007	2	1	0	0	2	2	14	13	4	4	**42**
2008	0	0	0	0	1	1	5	15	3	4	**29**
2009	1	0	0	0	1	2	8	15	7	5	**39**
2010	1	0	0	0	1	1	5	9	4	1	**22**
2011	0	0	0	0	0	1	3	8	4	1	**17**
2012	0	0	0	0	1	2	17	13	7	4	**44**
2013	1	0	0	1	2	2	10	14	11	2	**43**
2014	2	2	1	0	4	1	3	11	6	4	**34**
2015	2	2	0	0	1	4	5	16	7	2	**39**
2016	1	0	0	0	1	1	10	14	16	2	**45**
2017	0	1	0	0	0	1	9	21	22	8	**62**
2018	1	1	0	0	0	3	6	26	13	3	**53**
2019	0	1	0	0	0	2	9	6	10	1	**29**
2020	0	2	0	1	4	4	24	22	17	4	**78**
Total	18	21	3	5	21	44	253	329	246	71	**1,011**

*Current as of November 2022
Source: CDPH Vital Statistics Death Statistical Master Files
Prepared by: California Department of Public Health, Injury and Violence Prevention Branch
Report generated from http://epicenter.cdph.ca.gov on: November 07, 2022

5.3.13.2 Severe Cold

Overview

Riverside County generally experiences a Mediterranean or Desert climate. When temperatures suddenly drop, it can potentially lead to loss of life in humans and livestock, as well as severely damage crops. The NRI classifies Winter Weather for Riverside County as a relatively low risk hazard scoring 9.26 out of 100.00 on the risk index with an annualized frequency value of 1 event occurring per year.

When temperatures drop below freezing that is the most dangerous time for crops. When water freezes it expands, this effect causes damage to a plants structure and may cause it to die.

Identifying Freeze Hazards (2018 SHMP)

Sustained temperatures below freezing in California's generally mild weather regions can cause life loss and health risks to vulnerable populations. Although infrequent, freezes can severely affect California agriculture. Freezing temperatures occurring during winter and spring growing seasons can cause extensive crop damage.

Secondary impacts of freeze disasters can include major economic impacts on farmers, farm workers, packers, and shippers of agricultural products. Freezes can also cause significant increases in food prices to the consumer due to shortages.

Freezing spells are likely to become less frequent in California as climate temperatures increase. If emissions follow higher pathways, freezing events could occur only once per decade in a sizable portion of the state by the second half of the 21st century. While fewer freezing spells would decrease cold-related health effects, too few freezes could lead to increased incidence of disease as vectors and pathogens do not die off (CNRA 2009).

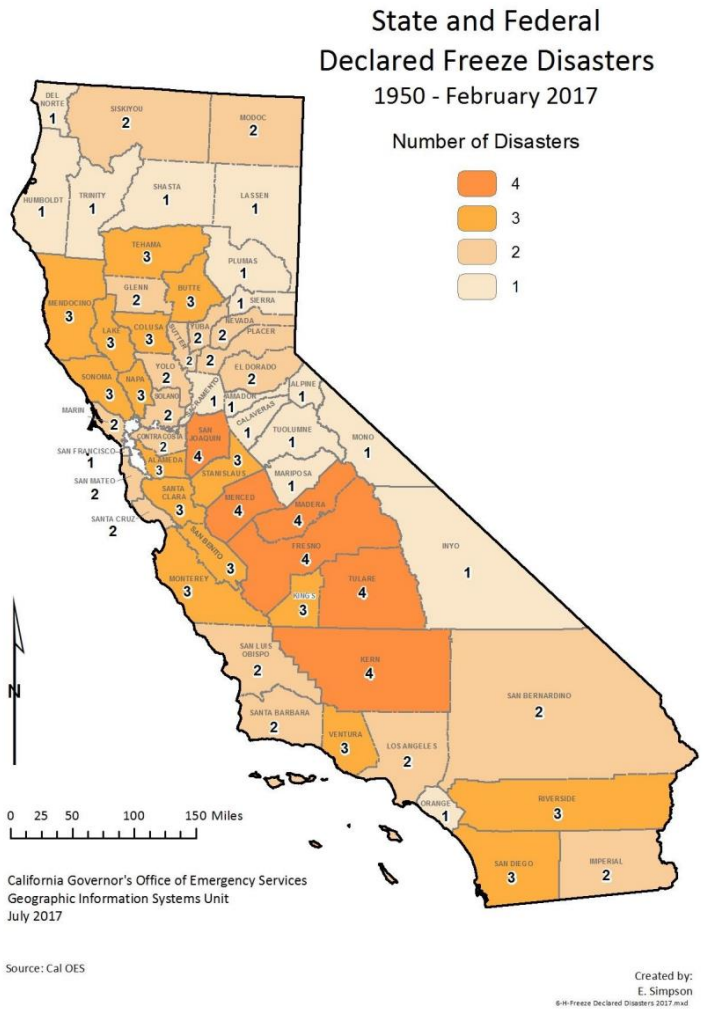
Climate Change and Severe Cold

Similar to other severe weather profiles when discussing climate change impacts, we can see an increase in events of extreme cold periods below freezing and variance of events. While the global average temperature is rising, the increase in variance means that extreme events at the lower end of the historic temperature range remain a possibility. Freezing temperatures can disrupt agricultural productivity, as some products are sensitive to freezing temperatures.

History of Events:

Riverside County has experienced Declared Freeze Disasters such as the1993 Winter Storms, the 1995 Winter Storms and the 1998 El Nino Winter Storms. They are also referenced in the 2018 SHMP table identified below.

Map 30: State and Federal Declared Freeze Disasters, 1950- February 2017



5.3.13.3 Wind Event

Overview

Windstorms are a hazard for many of the participating jurisdictions.

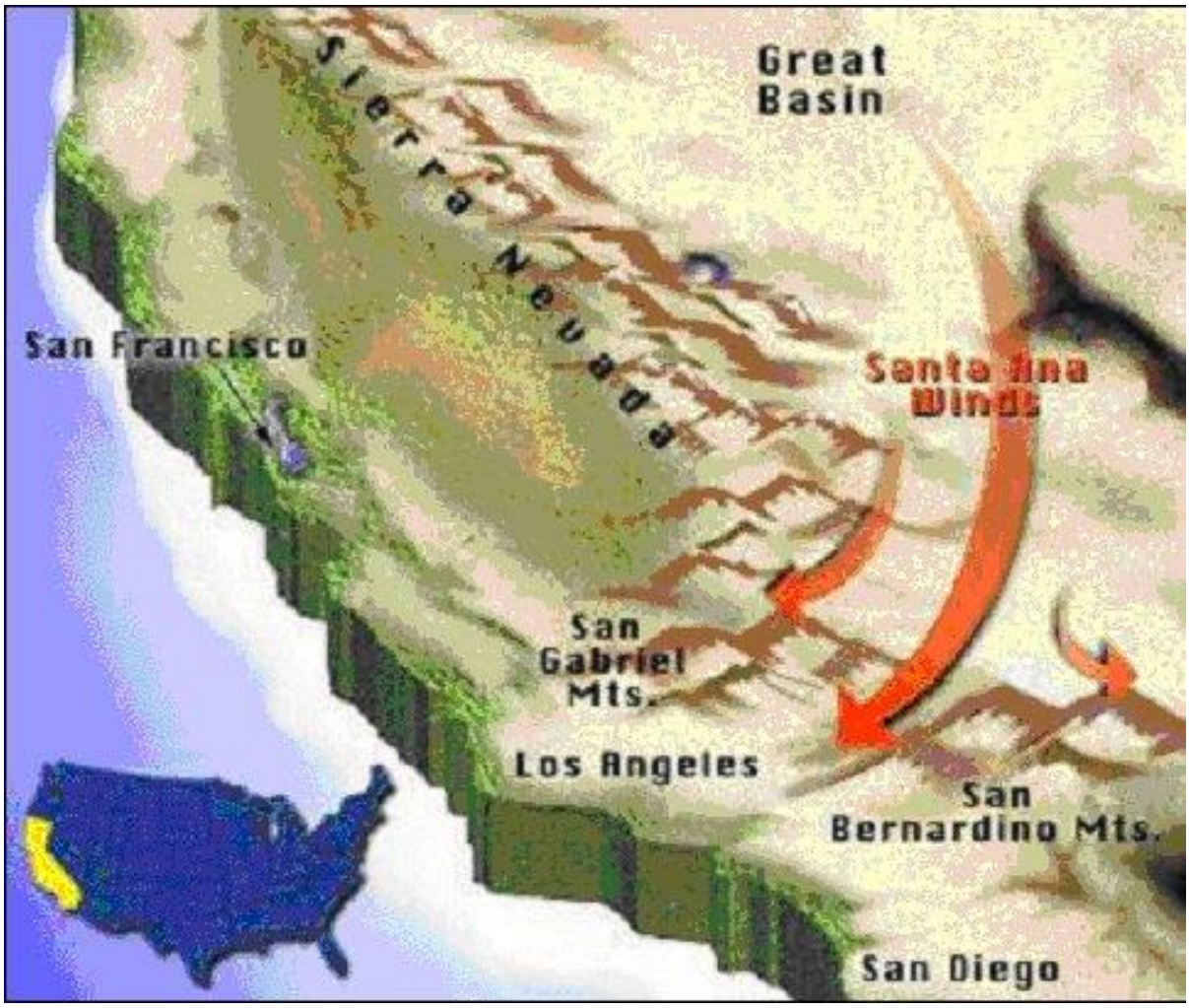
Santa Ana Winds have caused large amounts of damage and increased the fire damage level dramatically. Santa Ana Winds are generally defined as warm, dry winds that blow from the east or northeast (offshore). These winds occur below the passes and canyons of the coastal ranges of Southern California and in the Los Angeles basin. Santa Ana winds often blow with exceptional speed in the Santa Ana Canyon (the canyon from which it derives its name). Forecasters at the NWS in Oxnard and San Diego usually place speed minimums on these winds and reserve the use of "Santa Ana" for winds greater than 25 knots.

The complex topography of Southern California combined with various atmospheric conditions creates numerous scenarios that may cause widespread or isolated Santa Ana events. Commonly, Santa Ana winds develop when a region of high pressure builds over the Great Basin (the high plateau east of the Sierra Mountains and west of the Rocky Mountains including most of Nevada and Utah). The clockwise circulation around the center of this high-pressure area forces air downslope from the high plateau. The air warms as it descends toward the California coast at the rate of 5 degrees F per 1000 feet due to compressional heating. Thus, compressional heating provides the primary source of warming. The air is dry since it originated in the desert, and it dries out even more as it is heated.

Santa Ana winds commonly occur between October and February with December having the highest frequency of events. Summer events are rare. Wind speeds are typically north to east at 35 knots through and below passes and canyons with gusts to 50 knots. Stronger Santa Ana winds can have gusts greater than 60 knots over widespread areas and gusts greater than 100 knots in favored areas. Frequently, the strongest winds in the basin occur during the night and morning hours due to the absence of a sea breeze. The sea breeze which typically blows onshore daily can moderate the Santa Ana winds during the late morning and afternoon hours.

The following maps and photos show the direction of the Santa Ana winds as they travel from the stable, high-pressure weather system called the Great Basin High through the canyons and towards the low-pressure system off the Pacific. Riverside County is in the direct path of the ocean-bound Santa Ana winds.

Map 31: Direction of Santa Ana Wind Patterns



Source: http://www.theweatherprediction.com/weatherpapers/049/

Risk Assessment

The Santa Ana Winds pose several different types of threats.

1. By themselves, the winds pose a threat to the health of the people and to structures in the County.
   a. Health risks relate primarily to breathing problems caused by the blowing dust and plant pollen.

   b. Structural issues relating to the winds range from roofs being blown off to trees falling onto buildings.

2. The winds increase the threat and/or severity of fires in the urban areas

a. Wind-blown flames will spread more rapidly when pushed by high Santa Ana Winds.

3. Santa Ana Winds dry out brush and forest areas and increase the speed of a fire.

4. Santa Ana Winds cause power lines to arc, resulting in fires

5. Santa Ana Winds can either cause trees to fall on power lines or power lines to break, causing power outages.

6. Santa Ana Winds can also cause Public Safety Power Shutoffs initialized by utility providers to mitigate the potential of wildfires caused by utility company infrastructure.

Wind Erosion

Soil erosion is also a natural on-going process that transports, erodes and displaces soil particles through a transport mechanism, such as flowing water or the wind. Loose texture and steep slopes primarily result in high wind erosion potential in soils. Wind erosion is most severe in arid regions, where sandy or loamy sediments are un-vegetated and exposed to severe wind conditions.

In addition to the problems caused by the Santa Ana Winds, wind erosion is a serious environmental problem attracting global attention. Soil movement is initiated as a result of wind forces exerted against the surface of the ground. Dust particles in the air create major health problems. Atmospheric dust causes respiratory discomfort, may carry pathogens that cause eye infections and skin disorders and reduces highway and air traffic visibility. Dust storms can cause additional problems. Buildings, fences, roads, crops, trees, and shrubs can all be damaged by abrasive blowing soil.

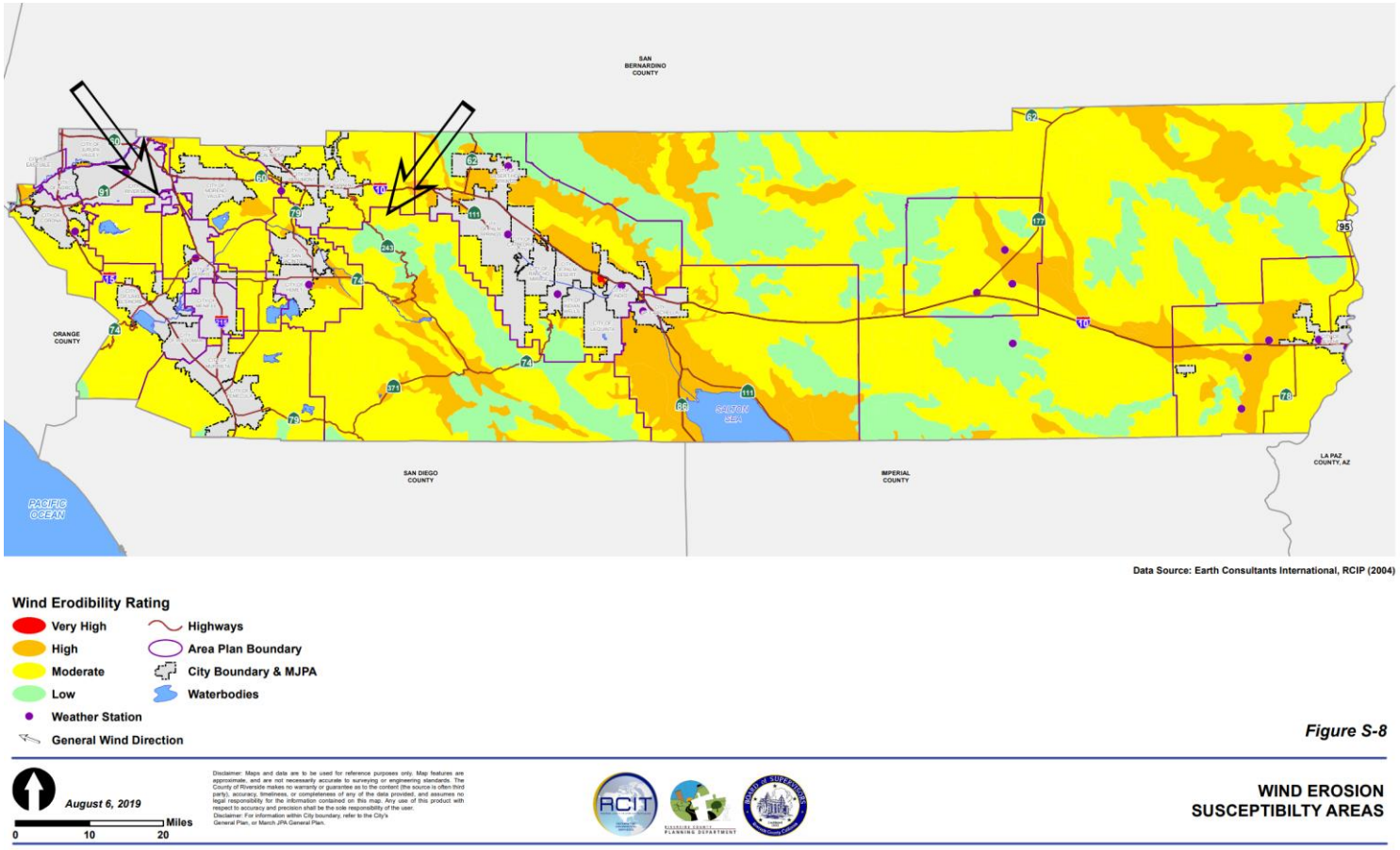
The wind and wind-blown sand are an environmentally limiting factor throughout much of Riverside County. Approximately 20 percent of the land area of Riverside County is vulnerable to "high" and "very high" wind erosion susceptibility. The Coachella Valley, the Santa Ana River Channel in northwestern Riverside County, and areas in and around the Cities of Hemet and San Jacinto are zones of high wind erosion susceptibility. Human intervention can accelerate the natural erosion process. For instance, typical consequences of development increase erosion potential from the removal of vegetative cover and reduction of overall permeable area. These activities can lead to increased water runoff rates and concentrated flows that have greater potential to erode exposed soils. The effects of excessive erosion range from nuisance

problems that require additional maintenance, such as increased siltation in storm drains, to instances of more severe damage, where water courses are down cut, and gullies develop. These processes can eventually undermine adjacent structures or topography. Human activities that disturb soils in arid regions increase wind erosion potential. Many of the desert areas are also susceptible to blowing sand, a severe form of wind erosion that damages property and accumulates soil on roadways. The majority of the soils within the district exhibit moderate to high erosion potential, which can be compounded by development.

Wind and wind-blown sand are an environmentally limiting factor throughout much of Riverside County. Approximately 20 percent of the land area of Riverside County is vulnerable to “high” and “very high” wind erosion susceptibility. The Coachella Valley, the Santa Ana River Channel in northwestern Riverside County, and areas in and around the cities of Hemet and San Jacinto are zones of high wind erosion susceptibility. Wind-blown sand is a well-recognized hazard for developments in the Coachella Valley. It has forced abandonment of dwellings and subdivided tracts in the central Coachella Valley.

Source:
https://planning.rctlma.org/Portals/14/genplan/2019/elements/Ch06_Safety_080619.pdf#page=33&zoom=100,93,169

Map 32: Riverside County Wind Erosion Map



Source: https://planning.rctlma.org/Portals/14/genplan/2019/elements/Ch06_Safety_080619.pdf

5.3.13.4 Fog Event

Overview

Fog forms from air being cooled to the point where it can no longer hold all of the water vapor it contains. For example, rain can cool and moisten the air near the surface until fog forms. A cloud-free, humid air mass at night can lead to fog formation, where land and water surfaces that have warmed up during the summer are still evaporating water into the atmosphere. This is called radiation fog. A warm moist air mass blowing over a cold surface also can cause fog to form, called advection fog.

Fog can have a devastating effect on transportation. Nighttime driving in the fog is dangerous and multi-car pileups have resulted from drivers using excessive speed for the conditions and visibility. Fog contributes to transportation accidents and is a life safety hazard. These accidents can cause multiple injuries and deaths and could have serious implications for human health and the environment if a hazardous or nuclear waste shipment were involved. Dense fog may also delay emergency response vehicles.

This hazard does not occur regularly but has had an impact on the highways within the OA.

5.3.13.5 Agricultural Event

Overview

Agriculture in Riverside County must be considered from two standpoints, namely, both as a product producer/exporter and a major economic provider to the County of Riverside. According to the Riverside County Agricultural Commissioner's Office Production Report, in 2020, Riverside County ranked in the top fourteen leading agricultural counties in California, with an agricultural production value of over $1.32 billion. Major agricultural industries include milk, nursery products, citrus and avocado, table grapes, vegetables, and dates.

Riverside County can be evaluated by two areas: Western Riverside encompassing Riverside, Corona, San Jacinto and Temecula Valley areas and Eastern Riverside encompassing the Coachella Valley and Palo Verde Valley.

Eastern Riverside - Coachella Valley & Palo Verde Valley

Agriculture is the second largest industry in the Desert Valleys and is primarily crop- related. The annual 2020 report shows these two districts agricultural crops

are valued at around $900 million and the Coachella Valley is seen as the second largest agricultural region in the state. Over 60 percent of Riverside County's crop production is grown in the Coachella and Palo Verde Valleys. In addition to crop production, many supporting industries, such as packing and distribution, are located in the desert area. The Coachella Valley produces 95 percent of all dates grown in the United States and the annual fruit crop exceeds 40 million pounds. The Desert's list of agriculture-related products includes:

- Vegetable & Melon Crops (Bell Peppers, Lettuce, Corn, Watermelon, etc.)
- Nursery Stock
- Turf/Sod Producers
- Field Crops (Hay, Cotton, Wheat, etc.)
- Citrus
- Tree & Vine Crops (Table Grapes, Dates)

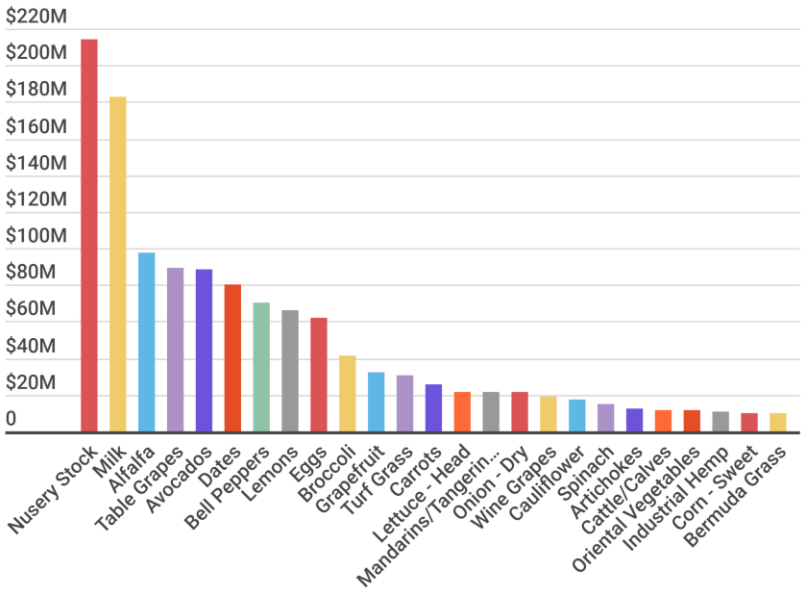
Western Riverside County (WR)

Agriculture in the Western Riverside County region is an ever-changing industry. With the large increase in housing in this area of the County over the past few years, there has been a reduction of several agriculture-related industries. This reduction is primarily in the poultry and dairy industries. The Western Riverside County list of agriculture-related products includes:

- Dairy Cattle
- Nursery Stock
- Beef Cattle
- Poultry and Eggs
- Citrus Crops
- Tree and Vine Crops (Avocado, Wine Grapes)
- Field Crops (Wheat, Hay, Green Chop)
- Vegetable Crops (Potatoes, etc.)
- Fish Hatcheries (for domestic and international distribution)

The Riverside County Agricultural Commission, Agriculture Projection Report listed the following as the Top commodities in 2020.

Figure 31: Top Commodities



Riverside County Top 25 Crops by Value for 2020

Source: https://storymaps.arcgis.com/stories/e4a55c77740c47bdabd6170a3914d583

History

Table 50: Agriculture-related disasters in Riverside County

Riverside County Agriculture Disasters				
Year	**Disaster**	**Commodity**	**Damages**	**Region**
1979-80	Wind	Avocado and Citrus	$40,000.00	
1979-80	Rain/Floods (El Nino)	Olive Trees (4,200)	$319,494.00	WR.
1979-80	Rain/Floods	Sugar beets, Barley &	$182,711.00	WR.
1979-	Rain/Floods	Potato Crop	$2,000,000.00	WR.
1979-80	Rain/Floods	Dairy and Livestock	$211,900.00	WR.
1982-1983	Rain/Floods (El Nino)	All agriculture		Countywide
1990 *	Insect Infestation-Med- fly	Fruit		Countywide
1990-91	Freezing temperatures	Citrus, avocados,	$15,450,000.00	Countywide
1990-	Drought			WR
1991	Insect Infestation-white fly	Melons, squash, cucumbers,		WR, Desert
1992-	Rain/Flood			
1993-94	Insect Infestation-Med- Fly	Fruit		WR
1996	Plant disease-Karnel Blunt	Wheat		WR/Blythe
1997-98	Rain/Flood (El Nino)	Wheat	$167,000.00	WR
1997-98	Rain/Flood (El Nino)	Livestock & Dairy	$4,100,000.00	WR

1999	Freezing temperatures	Citrus	$1,630,000.00	Countywide
*1999-2002 **	*Insect spread disease - (Pierce's Disease)*	*Wine Grapes*	*$16,000,000.00*	*WR*
*2001-July **	*Rain/Floods-Desert Storm*	*Misc. land & irrigation damage*	*~ $1,000,000.00*	*CV*
2002-2003	Drought	Dairy farms, dry land crops, etc.		Countywide
2002	High Winds/Freeze	Avocado & Citrus Crops	$8,586,000.00	WR
2002-03	Animal Disease-END	Poultry - 300,000 birds in So. Calif.		WR
2003-04	Wildfire	Nursery, various		WR
2004-05	Severe Storms – Excessive Moisture	All Agricultural Commodities		Countywide
2005	Severe Storms – Excessive Moisture	All Agricultural Commodities		Countywide
2006	Excessive	Livestock		WR
2007	Winter Storms	All Agricultural		Countywide
2007	Wildfires	Avocados		WR
2007	Below Normal Temperatures, Winter Storms	All Agricultural Commodities		Countywide

2007	Hail	All Agricultural		Countywide
2007	Drought	Grain Crops, Livestock	$3.8 Million +	WR
2008	Wildfires	All Agricultural		WR
2009	Drought	Grain Crops, Livestock	$5.0 Million +	WR
2010	Earthquake	Agricultural Buildings		Coachella Valley
2010	Winter Storms – Flooding, Debris Flow, Mud Flows	All Agricultural Commodities		Countywide
2013-2016	Drought	Crops damaged due to stressed water supplies		County Wide

*Denotes a locally declared disaster

Risk Assessment

When considering Agriculture, the County factored in both crops and animals/livestock. Both groups have a three-day window before serious damages occur (aside from physical damages that may happen due to earthquake or floods).

Animals

Most beef and dairy ranches, chicken ranches, swine farms, and other agricultural animal facilities usually only have a 2-to-3-day supply of feed on-site. Most of the large feed providers in the County do not have more than a 3-to-5-day supply. Restocking of feed supplies is done primarily by rail to the feed providers and then by truck to the local ranches.

In addition to providing feed for the animals, the impact on the dairy farms would be immense. The time factor for the dairy farms would be almost immediate. Not being able to move milk to the milk house was a major concern. Dairy cows must be milked and without the ability to transport the milk off property, that milk must

be disposed of in some way so as not to contaminate the soil or create a positive host for insects.

Crops

Although many crops are time sensitive and there is a limited amount of storage space in local packing houses, transportation issues vary based on the time of year and crop season.

Water Related Hazards

Many crops are not as water dependent as animals are, though some ground and vine crops have a very short lifespan without an adequate supply. Short-term water supplies can be provided to animals using water trucks; however, water trucks cannot support large crop areas with an adequate level of water.

Water-related issues included:

1. Local water supply (wells, holding ponds, etc.) contamination occurring either naturally or from human causes
2. Loss of water supply due to pipeline or aqueduct damage from an earthquake.

Hazmat Incidents – On-Property and Off-Property

The definition for an On-Property Hazmat incident relates to the improper use of chemicals, crop-dusting accidents or errors, accidental chemical spills into the ground, and other similar incidents. Off-Property Hazmat events relate to the typical transportation Hazmat incident. Both groups (animal-related and crop-related) were very concerned about the impact of an On-Property event. There was a higher level of concern about the impact of an Off-Property event for animals than for crops. Both groups rated the probability of either type of event occurring as low.

Transportation Events

Transportation events were listed as either short-term (less than 3 days) or long-term (over 3 days) and included:

1. Railroad accidents interrupting the delivery of products into the County;

2. Railroad accidents interrupting the movement of products out of the County;

3. A railroad or trucking strike; and

4. A disruption in transportation lines due to an earthquake, flood, fire, or another event.

Both animals and crops viewed the 3-day point as critical from both an economic and operational standpoint, with the crop group indicating that the 3-day window could be reduced based on whether it was picking season.

Insect infestation and Disease to Crops and Vines

There is an ever-changing potential for damage to local crops and vines from disease and insect infestation. The County has been attacked by a wide variety of pests, insects, and diseases, and because of the diversity of the types of crops in the County, maintaining a pro-active approach has been difficult. Studies and history show that should there be a disease outbreak or contamination of crops/vines, the economic impact would be enormous. Recent events in other states have shown the potential for bans on importation of cattle/dairy products from affected states.

One of the primary concerns of the producers in the County is the illegal or uninspected importation of plants into this region. The majority of insect, pest, and disease issues in the County can be attributed to this problem.

Table 51: Primary Crop-related Insect Infestations for Riverside County

The table below shows the primary crop-related insect infestations in the County over the past twenty years:

NAME
AFRICANIZED HONEYBEE
BARK BEETLE
CITRUS LEAFMINER
GLASSY-WINGED SHARPSHOOTER
GYPSY MOTH
HONEYBEE TRACHEAL MITE
JAPANESE BEETLE
LESSER SNOW SCALE
MAGNOLIA WHITE SCALE
MEDITERRANEAN FRUIT FLY
ORIENTAL FRUIT FLY
PIERCE'S DISEASE
RED IMPORTED FIRE ANT
STING NEMATODE
TROPICAL PALM SCALE
VARROA MITE/HONEYBEE
ASIAN CITRUS PSYLLID
SILVERLEAF WHITEFLY
POLYPHAGOUS SHOT-HOLE BORER

Figure 32: 2020 Pest Interceptions Chart

PEST INTERCEPTIONS - 2020			
Scientific Name	**Common Name**	**Pest Rating**	**Interceptions**
Solenopsis invicta	Red Imported Fire Ant	A	40
Diaphorina Citri	Asian Citrus Psyllid	A	7
Tobamovirs spp.	Tomato Brown Rugose Virus	A	2
Maconellicoccus hirsitus	Pink Hibiscus Mealybug	A	1
Ceroplastes rusci	Fig Wax Scale	A	1
Planococcus peruvianus	Bougainvillea Mealybug	B	5
Pulvinaria urbicola	Urban soft scale	B	1
Euwallacea spp.	Invasive Shot Hole Borer	B	1

Figure 32 *Continued*

PEST INTERCEPTIONS - 2020

Pest Rating Designations

"A" is an organism of known economic importance subject to state (or County Agricultural Commissioner) enforcement action.

"B" is an organism of known economic importance subject to enforcement action at the discretion of the County Agricultural Commissioner.

"Q" is an organism suspected to be of economic importance but its status is uncertain because of incomplete or inadequate information.

PEST INTERCEPTION SUMMARY 2016 - 2020

Year	Total	A	B	Q
2020	63	51	7	5
2019	97	83	14	0
2018	27+	20+	1	6
2017	15	5	3	7
2016	10	5	3	2

Source: https://www.rivcoawm.org/Portals/0/PDF/2020-Crop%20Report.pdf

Animal Diseases

There have not been recent incidents of catastrophic outbreaks of disease in the cattle/dairy industry. This is due in part to excellent precluding efforts on behalf of the cattle/dairy industry. Studies and history show that if there is an outbreak of cattle/dairy- related disease, the economic impact would be enormous. Recent events in other states have shown the potential for bans on importation of cattle/dairy products from affected states. In a short period of time, the inability to export products from the County would have wide-ranging economic effects.

The poultry industry is particularly vulnerable to the spread of disease because many fowl are kept in residential back yards and are therefore hard to monitor. Diseases can be spread by mosquitoes and/or ranch service operations that often serve more than one farm, increasing the odds of infection being spread. Outbreaks of the Exotic Newcastle Disease in the poultry industry in 2003 have resulted in the necessary depopulation of 3.16 million chickens in the County. This disease required the quarantine of a large area of Southern California, including all of Riverside County. The economic loss to the ranchers and County as a whole was estimated to be 161 million.

Diseases of primary concern to the area are:

- Avian Influenza
- Exotic Newcastle Disease
- Fowl Pox
- Hoof-and-Mouth Disease
- Transmissible Spongiform Encephalopathies

Loss of Electrical Power

The loss of electrical power is becoming more of a concern to all areas of agriculture. Depending on the season, the loss of electrical supply to a poultry ranch can be devastating within 2-to-4 hours because of the inability to keep the chickens cool. The loss of electrical power for over a 12-hour period can be devastating to a dairy farmer who cannot milk dairy cows.

5.3.14 Transportation Failure

Severity: 3

Probability: 2

OA Jurisdictions Affected by Transportation Hazard Incidents

- All incorporated cities of Riverside County
- Unincorporated areas of Riverside County

Hazard Definition

Transportation hazards are incidents involving air, rail, or highway transport of goods or passenger travel resulting in property damage, death, or serious injury. The incidents can be caused by transportation of hazardous materials, earthquake, hazardous weather, or other hazardous conditions affecting the uninterrupted flow of transportation and/or public safety.

Five major transportation systems operate within Riverside County.

1. Highways
2. Railroads
3. Air traffic
4. High-pressure petroleum and gas lines
5. Aqueducts.

Pipelines and aqueducts are treated separately in following sections of this LHMP.

History

Highways. The traffic density on the freeway and highway systems in the western part of the County is of particular concern. The population and economic growth in this area have caused increased demand on these networks.

Although the seasons do not have a large impact on Riverside County, there is the threat of poor visibility due to winter fog. Adding to this problem is the fact that according to the Federal Motor Carrier Safety Administration (FMCSA), more than 800,000 trucks carry hazardous materials across the U.S every day, and each year about 5,000 of those trucks are involved in nonfatal crashes, and 200 result in catastrophic death.

Rail Lines. Major rail transport lines through Riverside County include Union Pacific and the Burlington Northern Santa Fe (BNSF) Railway Companies. Rails, cars, supporting bridges, overpasses, and electrically operated switching mechanisms are susceptible to damage.

Union Pacific and the BNSF Railway Companies lines enter the Coachella Valley from Imperial County along the eastern shore of the Salton Sea.

Major population centers affected by railroad transportation are vulnerable to the impact of a wide variety of hazardous materials transported by these carriers. Additionally, there are lines running east and west that carry significant tonnage daily. Some of these lines are in remote areas, but that does not lessen the overall seriousness of their impact.

Airlines / Airports

The western part of Riverside County has some of the busiest air traffic areas in the United States. Commercial, as well as military traffic, is very heavy. The number of near misses reported by pilots underscores the increasing possibility of a mid-air collision over the County.

There are two major airports in Riverside County: March Air Reserve Base and Palm Springs International. There are also numerous smaller municipal and commercial airports and private air strips:

- Banning Airport
- Bermuda Dunes Airport
- Blythe Airport
- Chiriaco Summit Airport
- Corona Municipal Airport
- Desert Center Airport

- Flabob Airport
- French Valley Airport
- Hemet- Ryan Airport
- Lake Elsinore/Skylark Airport
- Perris Valley Airport
- Rancho California Airport
- Riverside Municipal Airport
- Jacqueline Cochran Regional Airport

In addition, there are five major out-of-county airports operating in the vicinity of Riverside County with significant flightpaths over the County:

1. John Wayne Airport (Orange County)
2. Long Beach Airport (Los Angeles County)
3. Los Angeles International (LAX) Airport
4. Ontario Airport (San Bernardino County)
5. Chino Airport (Airport Influence Area extends into Riverside County)
6. San Diego International Airport (SAN) San Diego County
7. San Bernardino International Airport (SBI) San Bernardino County

Risk Assessment

The possibility for a transportation hazard to occur is ongoing. There have been railway incidents in the recent past, although they have not been numerous and have not caused extensive damage. Semi-trucking incidents are not uncommon and could result in a hazardous spill at any time, although notable events have not occurred in recent history. There has not been a serious airline accident in the area in the recent past.

- **Effects on people and housing.** As the historical events in Riverside County show, people may be evacuated when a transportation emergency occurs. Relative to some of the other natural hazards assessed earlier in this LHMP, the numbers of people affected by transportation emergencies are usually less. However, a transportation accident on Interstate 10 during a period of high heat can result in hundreds (or more) of commuters being stranded on the highway with little resources for an extended period of time. When considering the impacts to the public's confidence in a jurisdictions ability to govern following a transportation incident. The impact is very low.

- **Effects on commercial and industrial structures**. There may be economic consequences due to transportation emergencies, but the damage is generally limited to clean-up of facilities and grounds or simply interruption of business due to evacuation.

- **Effects on infrastructure.** Transportation emergencies may result in downed power lines. Also, Hazmat materials released in a transportation emergency may impact waterways and drainage systems, and incidents can lead to the evacuation of schools, business districts, and residential areas.

  Effects on agriculture & the environment. Transportation is essential to the agricultural industry. For all elements of agriculture other than those that are dairy-related, any incident that affects transportation for more than three days is "major." For the dairy segment of the agricultural industry, any incident that affects the ability to transport product by more than 12 hours is considered "major." When considering the impact on the environment, transportation incidents can have long-term impacts to the plants and animals that live there if they are not mitigated and removed.

Risk Assessment Conclusion

In general, transportation hazards are not cataclysmic in terms of widespread property damage and loss of life. Existing emergency operations should be equipped to handle almost of any transportation hazard that may occur.

However, because Riverside County has an agricultural production value of over $1 billion, any transportation emergency that affects the ability of agriculture to conduct its routine business (importing supplies and exporting production) can have severe economic consequences for the County.

Relationship to Other Hazards – Cascading Effects

Depending on the location of the incident, the cascading effects of transportation emergencies are generally limited to those of Hazmat incidents, Fires or Extreme Weather. Recent examples in Riverside County of how transportation events can turn into large scale concerns for public safety can be seen during the *Oleander Incident* when a railcar in the City of Perris had an unidentified leak prompting evacuations, shelter operations, and interagency cooperation to protect the immediate life and property in that area.

Source: https://www.rvcfire.org/incidents/fact-sheets/OLEANDER%2008-11-2022

5.3.15 Dam Failure

Severity: 1

Probability: 3

OA Jurisdictions Affected by Dam Failure

- Norco
- Eastvale
- Corona
- Lake Elsinore
- Wildomar
- Murrieta
- Temecula
- Perris
- Menifee
- Riverside
- Jurupa Valley
- Hemet
- Moreno Valley
- San Jacinto
- Various Portions of unincorporated areas in the West County

Hazard Definition

The term “dam failure” encompasses a wide variety of circumstances. Potential causes of a dam failure are numerous and can be attributed to deficiencies in the original design of the dam, the quality of construction, the maintenance of the dam and operation of the appurtenances while the dam is in operation and acts of nature including precipitation in excess of the design, flood, and damage from earthquakes. Water over topping the dam crest is a common cause of failure in earth dams.

Overtopping will cause erosion of the dam crest and eventual dam breach. Piping of earth dams is another common form of failure. Piping is a form of erosion that occurs underground caused by rodent burrowing and the presence of extensive root systems from vegetation growing on and around the dam.

Flooding of the area below the dam may occur as the result of structural failure of the dam, overtopping, or a seiche. The primary danger associated with a dam failure is the swift, unpredictable flooding of those areas immediately downstream of the dam.

There are three general types of dams: earth and rock fill, concrete arch or hydraulic fill, and concrete gravity. Each of these types of dams has different failure characteristics. The earth/rock fill dam will fail gradually due to the erosion of the breach; a flood wave will build gradually to a peak and then decline until the reservoir is empty. A concrete arch or hydraulic fill dam will fail almost instantaneously, with a very rapid build-up to a peak and then a gradual decline. A concrete gravity dam will fail somewhere in between instantaneous and gradual, with the corresponding build-up of flood wave.

History

Historically, Riverside County has not experienced any significant dam failure incidents, although there are several major dams in the County of both the earthen and steel reinforced concrete type.

Risk Assessment

The County of Riverside is subject to potential flooding from several local dams, reservoirs, streams, rivers, and washes. These include but are not limited to, Lake Elsinore, the Colorado River, and the San Jacinto River. Seasonal flooding with the failure of run-off storage reservoirs, canals, and levees could seriously compound the situation, particularly in or near urban population centers. From the time of complete failure to inundation could be as little as 5-to-10 minutes.

Portions of Riverside County along the Colorado River corridor could suffer from a catastrophic failure of dams that are located far outside the borders of Riverside County. These dams include Palo Verde Diversion Dam, Headgate Rock Dam, Parker Dam, Davis Dam, and Hoover Dam. If there were a catastrophic dam failure, it is estimated that it would take a minimum of 23 hours before the flood waters reach the City of Blythe.

With major disruptions in power and communications systems, a warning may not be received from dam or reservoir sites in time to initiate an organized evacuation or broadcast warnings via emergency radio stations. If a credible prediction is initiated, then preparation for a damaging earthquake could begin and residents and business owners within dam inundation areas could be directed to assembly areas to wait for official word regarding safe re-entry. This method of direction and control could substantially reduce potential loss of life if enough warning were available.

- **Effects on Agriculture & the Environment** can be catastrophic, both for crops, plants and for animals. Loss of property is a real risk, as well.

Risk Assessment Conclusion

Although dam failure incidents have not historically been a problem in Riverside County, the County's location with respect to earthquake fault lines presents the very real danger of dam failure due to quakes. If this were to occur, the effects could be catastrophic. Also, as noted above, seasonal flooding with the failure of run-off storage reservoirs, canals, and levees could seriously compound the risks of dam failure and additional flooding.

Relationship to Other Hazards – Cascading Effects

Dam failure causes downstream flooding. It may also lead to power failures and disruption of essential services. The secondary effects of dam failure can include the disruption of the local and state economies by damage to buildings and roads, the severance of communications, the disruption of supply and delivery mechanisms, additional welfare, and emergency aid to the recovering economy.

Table 52: Dams within the County of Riverside

Listed Alphabetically by Name

Dam No.	National ID No.	Name	Owner	County	Stream	Year Built	Capacity (Ac-ft)	Res. Area (Acres)	Drainage Area (mi^2)	Crest Elev. (ft)
1003-003	CA00798	Alessandro	Riverside County Flood Control And Water Conservation	Riverside	Alessandro Cr	1956	370	17	4.63	1146
1003-007	CA00802	Boxsprings	Riverside County Flood Control And Water Conservation	Riverside	Box Springs Cr	1960	405	29	4	1139
35-021	CA01441	Cajalco Creek	Metropolitan Water Dist	Riverside	Cajalco Creek	2001	889	74.4	22.7	1512
87-008	CA01204	Declez Retention	San Bernardino County Flood Control District	Riverside	San Sevaine Cr	1984	331	21	10.7	849
35-018	CA01410	Diamond Valley Lake	Metropolitan Water District	Riverside	Domenigoni Valley Cr	2000	800000	4860	13	1769
35-019	CA01413	Diamond Valley Lake Forebay	Metropolitan Water District	Riverside	Domenigoni Val Can	1999	500	31	0.13	1497.5
1812-000	CA01302	Dunn Ranch	Agri-Empire,A Calif Corp	Riverside	Hamilton Cr	1987	90	7	0.2	142.5
1003.02	CA10503	Eagle Canyon Debris Basin	Riverside County Flood Control And Water Conservation	Riverside	Eagle Canyon	2015	222	7.1	-	405
822-000	CA00767	El Casco	Riverside Land Conservancy	Riverside	San Timoteo Creek	1879	143	15	0.09	116
81-000	CA00304	Fairmount Park	City Of Riverside	Riverside	Santa Ana River	1923	200	40	22	793
827-000	CA00769	Foster	Idyllwild Water District	Riverside	Lily Creek	1945	56	6	0.85	5812
35-020	CA01424	Goodhart Canyon Detention Basin	Metropolitan Water Dist	Riverside	Goodhart Canyon	1999	1026	98	3.8	1627.2
1003	CA00787	Harrison Street	Riverside County Flood Control And Water Conservation	Riverside	Harrison Creek	1954	208	14	2.03	1123.5

35-016	CA01349	Henry J Mills No 2	Metropolitan Water Dist	Riverside	Off stream	1996	92	5	0.1	1651.2
35-014	CA01085	Henry J Mills Reservoir	Metropolitan Water Dist	Riverside	Off stream	1979	83	6	0	1651
35-017	CA01374	H Mills Reclamation	Metropolitan Water District	Riverside	Off stream	1996	98	16	0.03	1593
1003-014	CA01212	Jurupa Basin	Riverside County Flood Control And Water Conservation	Riverside	Jurupa Wash	1983	167	17	1.69	855
817-000	CA00763	Lake Hemet	Lake Hemet Municipal Water District	Riverside	San Jacinto Riv	1895	14000	470	67	4341.5
1003-016	CA01392	Lakeview	Riverside County Flood Control And Water Conservation	Riverside	San Jacinto Riv	1994	530	39	7.6	1621
818-002	CA00766	Lee Lake	Elsinore Valley Mun Wd	Riverside	Temescal Creek	1919	1100	70	53	1153
1003-009	CA01103	Mabey Canyon	Riverside County Flood Control And Water Conservation	Riverside	Mabey Creek	1974	68	5	1.5	1146
1003-011	CA01211	Mary Street	Riverside County Flood Control And Water Conservation	Riverside	Alessandro Wash	1981	320	19	6.7	1009
35-000	CA00212	Mathews	Metropolitan Water District of Southern California	Riverside	Cajalco Creek	1938	182000	2750	40	1404
1003-015	CA01197	Metz Road Debris Basin	Riverside County Flood Control And Water Conservation	Riverside	San Jacinto Riv	1981	88	20	1	1470.5
81-003	CA00305	Mockingbird Canyon	City Of Riverside	Riverside	Mockingbird Can	1914	1250	64	13.13	1015
1003-010	CA01179	Oak Street	Riverside County Flood Control And Water Conservation	Riverside	Oak Street Cr	1979	138	36	6.02	1034
1-068	CA00054	Perris	California Department Of Water Resources	Riverside	Bernasconi Pass	1973	131452	2340	10	1600

1003-006	CA00801	Pigeon Pass	Riverside County Flood Control And Water Conservation	Riverside	Pigeon Pass	1958	900	86	8.71	1702.5
1003-004	CA00799	Prenda	Riverside County Flood Control And Water Conservation	Riverside	Prenda Creek	1954	192	15	1.93	1242
829-000	CA00771	Quail Valley	Forecast Homes	Riverside	San Jacinto Riv	1959	103	10	1.6	1490
818-000	CA00765	Railroad Canyon	Elsinore Valley Mun Wd	Riverside	San Jacinto River	1928	11586	525	664	1410
35-012	CA00223	Robert A Skinner	Metropolitan Water Dist	Riverside	Tucalota Creek	1973	43800	860	51.5	1493
35-015	CA01271	Skinner Clearwell	Metropolitan Water District	Riverside	Offstream	1991	356	14	0	1433
1811-000	CA01237	Sunnymead Ranch	Sunnymead Ranch Comm Assoc	Riverside	Reche Canyon	1985	400	35	2	1770
1003-005	CA00800	Sycamore	Riverside County Flood Control And Water Conservation	Riverside	Sycamore Canyon	1956	860	57	10.7	1013
1003-013	CA01170	Tahchevah	Riverside County Flood Control And Water Conservation	Riverside	Tachevah Creek	1964	650	60	3.2	582
1003-012	CA01242	Tahquitz Creek Debris	Riverside County Flood Control And Water Conservation	Riverside	Tahquitz Creek	1991	75	5	18	562
2028-000	CA00770	Vail	Rancho Calif Water District	Riverside	Temecula Creek	1949	51000	1078	306	1482.6
1003-008	CA00803	Wide Canyon	Riverside County Flood Control And Water Conservation	Riverside	West Wide Canyon	1968	1490	57	33.5	1560
1003-000	CA00796	Woodcrest	Riverside County Flood Control And Water Conservation	Riverside	Woodcrest Creek	1954	420	24	5.32	1122.5

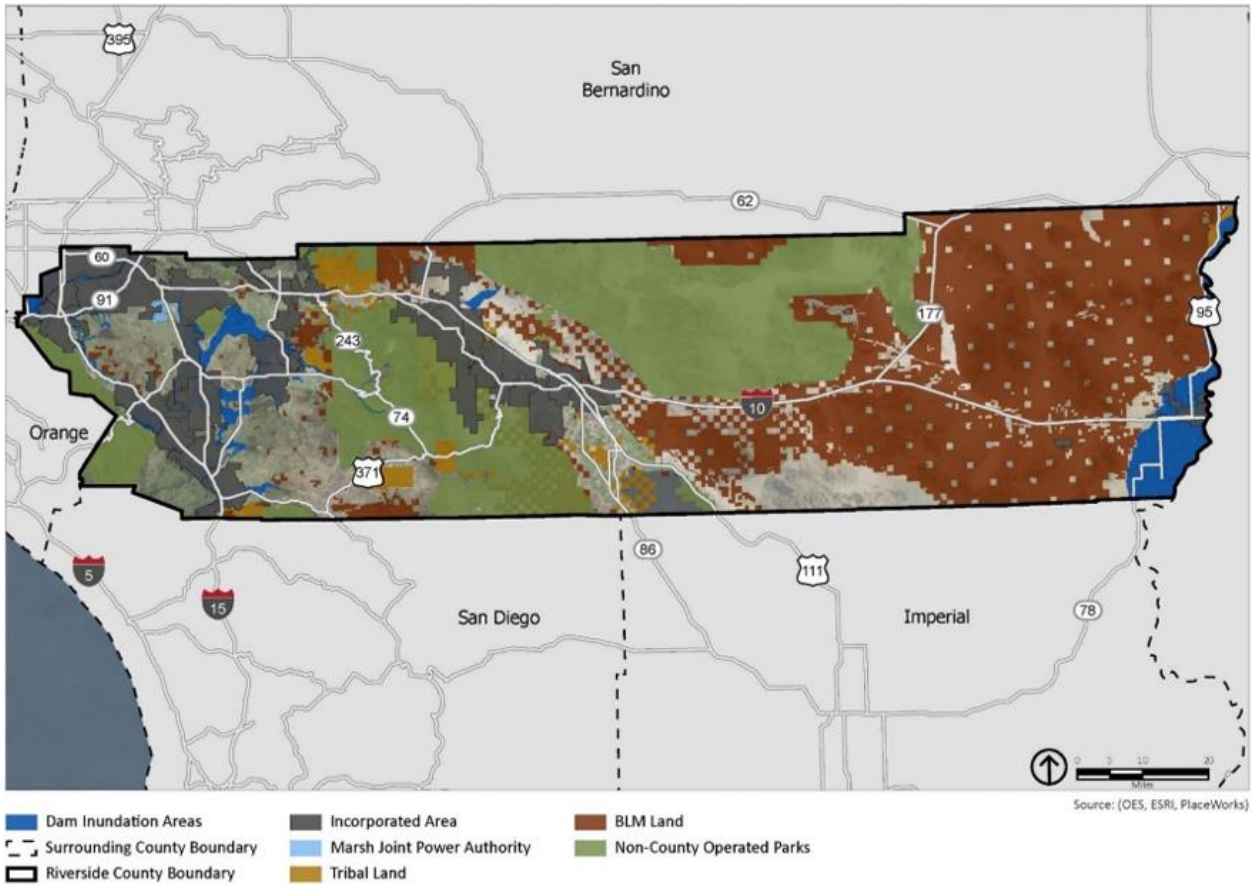
The most recent dam built was Eagle Canyon Debris Basin in 2015

Descriptions of the dams, their inundation impact on the County, and a delineation of response efforts are outlined in the Flood and Dam Inundation Plan, maintained by Riverside County Transportation and Land Management Agency and on the California Department of Water Resources Division of Safety of Dams website.

Source: https://fmds.water.ca.gov/maps/damim/

Continue to the Next Page.

Map 34: Riverside County Dam Inundation Risks



Source: County of Riverside General Plan
September 28, 2021
https://planning.rctlma.org/Portals/14/genplan/2021/elements/Ch06_Safety_092821.pdf

5.3.16 Aqueduct Failure

Severity: 2

Probability: 3

OA Jurisdictions Affected by Aqueduct Failure

- All incorporated cities of Riverside County
- Unincorporated areas of Riverside County

Hazard Definition

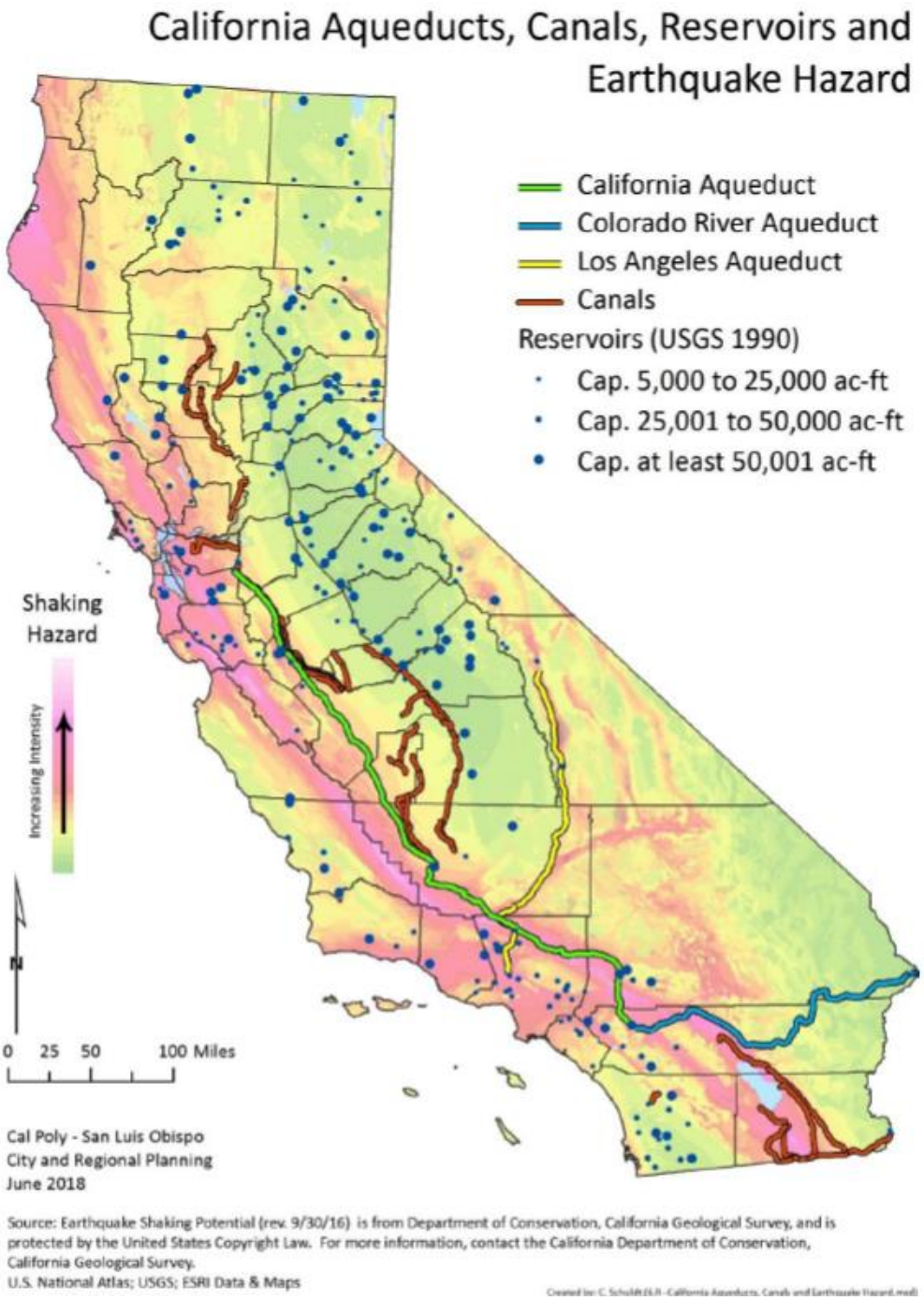
An Aqueducts is an artificial channel to transport water. There are two major Aqueducts that traverse Riverside County:

- California Aqueduct
- Colorado River Aqueduct.

The California Aqueduct is a 444-mile long, artificially river shaped facility that is a crucial component of the State Water Project. The California Department of Water Resources states that the Project includes 34 storage facilities, reservoirs and lakes; 20 pumping plants; 4 pumping-generating plants; 5 hydroelectric power plants; and about 701 miles of open canals and pipelines. It travels from Sacramento into San Bernardino County and finally ends in western Riverside County. The East Branch is the portion of the Aqueduct that transports water for storage into Lake Perris.

The Colorado River Aqueduct stretches 242 miles across Arizona and California. According to the American Society of Civil Engineers, it consists of more than 90 miles of tunnels, nearly 55 miles of cut-and-cover conduit, almost 30 miles of siphons, and five pumping stations. More than a billion gallons of water travel through it a day. It travels from Arizona into San Bernardino County, enters the eastern portion of Riverside County and travels the length of the County until it ends near the City of Riverside. It was built and is currently maintained by the Metropolitan Water District of Southern California.

Map 35: California Aqueducts



Source: 2018 (SHMP)

History of Events

Riverside County has not experienced a large-scale Aqueduct incident.

Risk Assessment

An earthquake or landslide could severely damage the two main aqueducts that travel through the county, possibly rendering them out of service. In this event, the water supply to the OA would be greatly affected.

Long periods of droughts have been known to damage aqueduct infrastructure. Wells have needed to work harder to pump low levels of water. This has resulted in many irrigation districts to raise the sides of canals to encourage gravitational water flow. However, this tactic can negatively affect bridges.

- **Effects on people and housing.** There is a low impact on housing unless the aqueduct was to flood a residential area. The impact to people can range from minor to disastrous. A failure could greatly impact the County's water supply leaving the County to source water elsewhere until the damages to the aqueduct can be remedied. It can also impact the economy in the event that crops are damaged, and farmers lose valuable product. If a significant failure were to occur the governing jurisdiction may have a large impact on the public's confidence to govern following a failure that has extended consequences such as disruption of essential services for extended periods of time.

- **Effects on commercial and industrial structures**. There is a low impact on commercial and industrial structures.

- **Effects on infrastructure.** There is a low impact on infrastructure.

- **Effects on agriculture & the environment.** In the event of an aqueduct failure crops and dependent plant life could be devastatingly impacted.

Risk Assessment Conclusion

This hazard has a low probability but has the potential to have catastrophic impacts to the county.

Relationship to Other Hazards – Cascading Effects

An Aqueduct failure could lead to water supply contamination or disruption and flooding. It could also increase the effects of a drought.

5.3.17 Tornado

Severity: 2

Probability: 1

OA Jurisdictions Affected by Tornados

- Hemet
- Perris
- Desert Center
- Coachella Valley
- Mecca
- Homeland

Hazard Definition

Tornados

Tornadoes are spawned when there is warm, moist air near the ground, cool air aloft, and winds that speed up and change direction. An obstruction, such as a house, in the path of the wind, causes it to change direction. This change increases pressure on parts of the house, and the combination of increased pressures and fluctuating wind speeds creates stresses that frequently cause structural failures.

In order to measure the intensity and wind strength of a tornado, Dr. T. Theodore Fujita developed the Fujita Tornado Damage Scale. This scale compares the estimated wind velocity with the corresponding amount of suspected damage. The scale measures six classifications of tornadoes with increasing magnitude from an “F0” tornado to an “F6+” tornado.

Tornados, like those that occur every year in the Midwest and Southeast parts of the United States, are a rare phenomenon in most of California, with most tornado-like activity coming from micro-bursts.

The chart below depicts the Fujita Tornado Damage Scale:

Table 53: Fujita Tornado Damage Scale

Scale	Wind Estimate (mph)	Typical Damage
F0	< 73	**Light damage.** Some damage to chimneys and TV antennas; breaks twigs off trees; pushes over shallow-rooted trees.
F1	73-112	**Moderate damage.** Peels surface off roofs; mobile homes pushed off foundations or overturned; moving autos blown off roads.
F2	113-157	**Considerable damage.** Roofs torn off frame houses; mobile homes demolished; boxcars overturned; large trees snapped or uprooted; light-object missiles generated; cars lifted off ground.
F3	158-206	**Severe damage.** Roofs and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted; heavy cars lifted off the ground and thrown.
F4	207-260	**Devastating damage.** Well-constructed houses leveled; structures with weak foundations blown away some distance; cars thrown, and large missiles generated.
F5	261-318	**Incredible damage.** Strong frame houses leveled off foundations and swept away; automobile-sized missiles fly through the air in excess of 100 meters (109 yds); trees debarked; incredible phenomena will occur.

Source: https://www.spc.noaa.gov/faq/tornado/f-scale.html

Microbursts

Unlike tornados, microbursts are strong, damaging winds that strike the ground and often give the impression a tornado has struck. They frequently occur during intense thunderstorms. The origin of a microburst is downward moving air from a thunderstorm's core. But unlike a tornado, they affect only a rather small area.

University of Chicago storm researcher Dr. Ted Fujita first coined the term “downburst” to describe strong, downdraft winds flowing out of a thunderstorm cell that he believed were responsible for the crash of Eastern Airlines Flight 66 in June of 1975.

A downburst is a straight-direction surface wind in excess of 39 mph caused by a small-scale, strong downdraft from the base of convective thundershowers and thunderstorms. In later investigations into the phenomena, he defined two sub-categories of downbursts: the larger macro bursts and small microbursts.

Macro bursts are downbursts with winds up to 117 mph that spread across a path greater than 2.5 miles wide at the surface and which last from 5 to 30 minutes. The microburst, on the other hand, is confined to an even smaller area, less than 2.5 miles in diameter from the initial point of downdraft impact. An intense microburst can result in damaging winds near 270 km/hr. (170 mph) and often last for less than five minutes.

“Downbursts of all sizes descend from the upper regions of severe thunderstorms when the air accelerates downward through either exceptionally strong evaporative cooling or by very heavy rain which drags dry air down with it. When the rapidly descending air strikes the ground, it spreads outward in all directions, like a fast-running faucet stream hitting the sink bottom.

When the microburst wind hits an object on the ground such as a house, garage, or tree, it can flatten the buildings and strip limbs and branches from the tree. After striking the ground, the powerful outward running gust can wreak further havoc along its path. Damage associated with a microburst is often mistaken for the work of a tornado, particularly directly under the microburst. However, damage patterns away from the impact area are characteristic of straight-line winds rather than the twisted pattern of tornado damage.”

History

The history table demonstrates the number of tornados and microbursts that have occurred in the County.

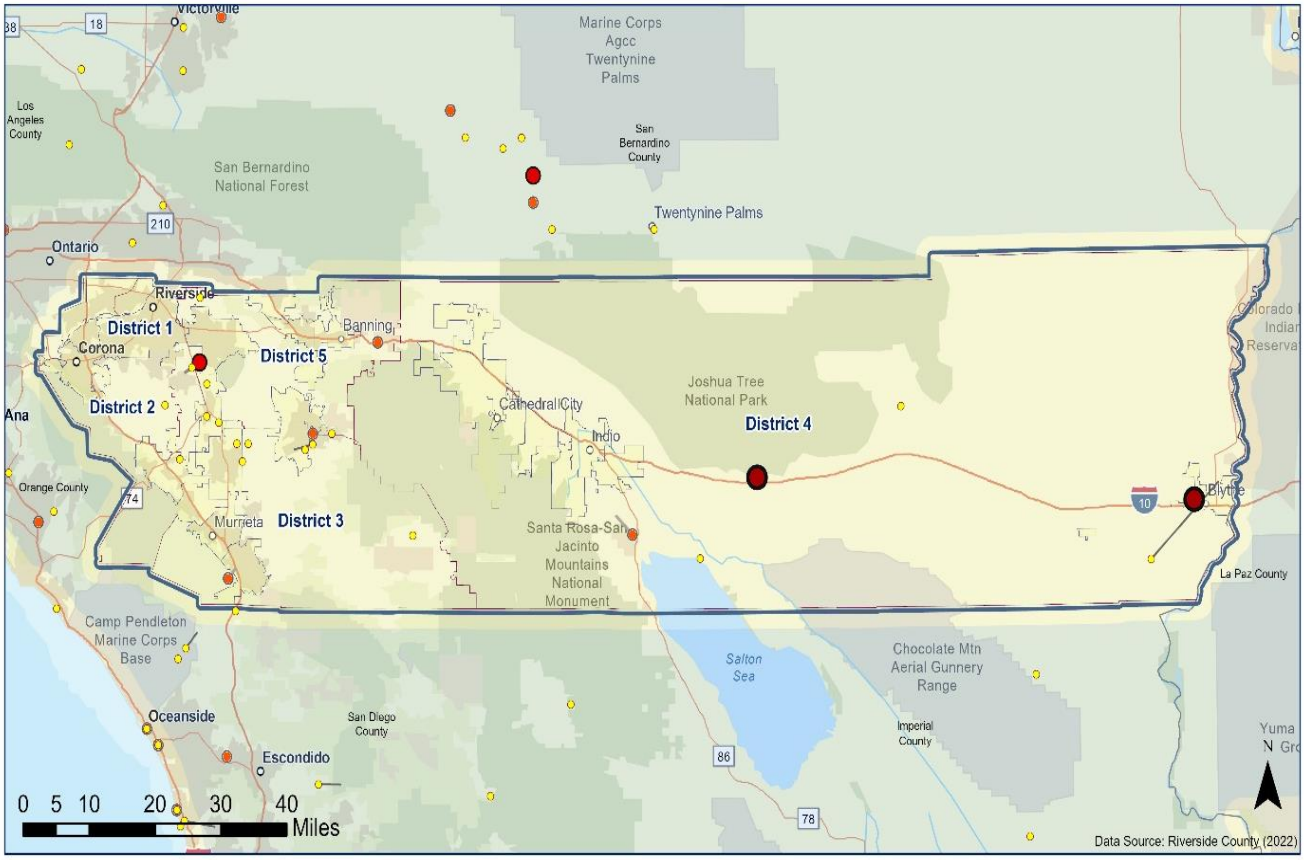
Table 54: Historical Tornados Statistics for Riverside

Date	Force	Injuries	Death(s)
1955-04-06	0	0	0
1973-08-16	3	0	0
1974-07-20	1	1	0
1978-02-09	3	6	0
1982-01-20	0	0	0
1985-09-18	0	0	0
1991-03-20	0	0	0
1996-12-22	1	0	0
1994-08-12	0	0	0
1998-05-13	0	0	0
2005-01-09	0	0	0
2005-02-19	1	0	0
2005-02-26	0	0	0
2005-07-23	0	0	0
2006-07-23	0	0	0
2008-05-22	0	0	0
2008-05-22	2	1	0
2008-05-22	0	0	0
2008-05-22	0	0	0
2010-01-21	0	0	0
2012-08-12	0	0	0
2012-09-09	0	0	0
2015-04-21	0	0	0
2015-10-17	0	0	0
2015-08-06	1	2	0
2018-08-16	0	0	0

Source:
https://countyofriverside.maps.arcgis.com/home/item.html?id=0db253f3e83a4c5f9f5ab9577f2dcb49

Map 36: Past Riverside County Tornadoes

Riverside County Tornado Tracks and Damage



Disclaimer: Maps and data are to be used for reference only. Map features are approximate, and are not accurate to surveying or engineering standards. The County of Riverside, and the Emergency Management Department make no warranty or guarantee as to the content. Data sources used may be from trusted third parties. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user.

- Supervisorial District
- Incredible Damage
- Devastating Damage
- Severe Damage
- Considerable Damage
- Moderate Damage
- Light Damage
- Severe Damage
- Considerable Damage
- Moderate Damage
- Light Damage

Tornado and Tornado Tracks, by Damage - Riverside County

Risk Assessment

- **Effects on people and housing.** Tornadoes are very dangerous and can destroy homes and injure or kill Riverside County residents. The county has been fortunate in the past because we have not experienced loss of life and very few injuries caused by tornadoes or airborne debris. The public's confidence will be minimally impacted after one of these incidents.

- **Effects on commercial and industrial structures.** Industrial structures could house Hazardous Materials that have to potential to be released if the facility is damaged. Workers could be trapped under debris if the tornado hits during business hours.

- **Effects on infrastructure.** Infrastructures could be damaged by high winds at building failure points such as rook joist or wall stud- bottom plate intersections. Flying debris can also cause damages.

- **Effects on agriculture and the environment.** Tornadoes have the power to destroy crops or tools/structures needed by the farmer to tend his crops. It can also lead to the death of livestock. The impact on the environment overall is low.

Risk Assessment Conclusion

Riverside County's "Tornado Alley" spans from the 15 Corridor to desert center and is highly susceptible to microburst and tornados that result in high dollar recovery costs. While these incidents occur, they are low impact when compared to other natural hazards identified within this plan.

Relationship to Other Hazards – Cascading Effects

Tornados can destroy critical infrastructure causing disruption in essential services to residents and commercial properties. Widespread damage can also be exacerbated by fires caused from the damage. Tornados can damage critical facilities and devastate homes.

5.3.18 Insect Infestation

Severity: 2

Probability: 3

OA Jurisdictions Affected by Insect Infestation

- All incorporated cities of Riverside County
- Unincorporated areas of Riverside County

(Bark Beetle)

- Idyllwild Fire Protection District

(Red Imported Fire Ant Quarantine)

- Alvord Unified School District
- Cathedral City
- City of Banning
- City of Blythe
- City of Calimesa
- City of Canyon Lake
- City of Coachella
- City of Corona
- City of Desert Hot Springs
- City of Hemet
- City of Indian Wells
- City of Indio -- only portions of the city are within the boundaries of the Red Imported Fire Ant Quarantine area
- City of La Quinta
- City of Lake Elsinore
- City of Moreno Valley – only portions of the city are within the boundaries of the Red Imported Fire Ant Quarantine area
- City of Murrieta
- City of Norco
- City of Palm Desert -- only portions of the city are within the boundaries of the Red Imported Fire Ant Quarantine area
- City of Palm Springs -- only portions of the city are within the boundaries of the Red Imported Fire Ant Quarantine area
- City of Perris
- City of Rancho Mirage -- only portions of the city are within the boundaries of the Red Imported Fire Ant Quarantine area
- City of Riverside
- City of Temecula
- Home Gardens County Water District
- Idyllwild Water District
- Lake Elsinore Unified School District
- Menifee Unified School District
- Moreno Valley Unified School District
- Rancho California Water District
- Riverside Community Hospital
- Riverside County Office of Education, Children, and Family Services
- Riverside County Transportation and Land Management Agency
- Riverside Unified School District
- San Gorgonio Pass Water Agency
- Valley Sanitation District
- Western Municipal Water District

Hazard Definition

Insect infestation occurs when an undesirable type of insect inhabits an area in a manner that causes serious harm to cash crops, livestock, or poultry; wild land trees, plants, or animals; or humans. Countless insects live on, in, and around plants, animals, and humans in all environments. Many are harmless, while others can cause fatal damage. Under some conditions, insects that have been present and relatively harmless can become hazardous. For example, severe drought conditions can weaken trees and make them more susceptible to destruction from insect attacks.

The major forms of insects are:

- **Chewing insects** are defoliating insects. They generally strip plants of green matter such as leaves. Caterpillars and beetles make up the largest proportion of chewing insects. Under normal conditions, trees can usually bounce back from an attack of these defoliators, though repeat infestation will weaken a tree and can eventually kill it by starving it of energy.

- **Boring, or tunneling, insects** cause damage by boring into the stem, roots, or twigs of a tree. Some lay eggs that then hatch and the larvae burrow more deeply into the wood, blocking off the water-conducting tissues of the tree. Boring insects generally feed on the vascular tissues of the tree. If the infestation is serious, the upper leaves are starved of nutrients and moisture, and the tree can die. Signs of borer infestation include entry/exit holes in the bark, small mounds of sawdust at the base, and sections of the crown wilting and dying.

- **Sucking insects** do their damage by sucking out the liquid from leaves and twigs. Many sucking insects are relatively immobile, living on the outside of a plant and forming a hard protective outer coating while they feed on the plant's juices. Quite often they will excrete a sweet, sticky substance known as honeydew which contains unprocessed plant material. Honeydew can cause sooty mold to form on leaves and can become a nuisance. Signs of infestation include scaly formations on branches, dieback of leaves, and honeydew production.

Table 55: Example Insect Species

NAME
AFRICANIZED HONEYBEE
BARK BEETLE
CITRUS LEAFMINER
GLASSY-WINGED SHARPSHOOTER
GYPSY MOTH
HONEYBEE TRACHEAL MITE
JAPANESE BEETLE
LESSER SNOW SCALE
MAGNOLIA WHITE SCALE
MEDITERRANEAN FRUIT FLY
ORIENTAL FRUIT FLY
RED IMPORTED FIRE ANT
STING NEMATODE
TROPICAL PALM SCALE
VARROA MITE/HONEYBEE
ASIAN CITRUS PSYLLID
SILVERLEAF WHITEFLY
POLYPHAGOUS SHOT-HOLE BORER
ASIAN CITRUS PSYLLID
GOLDSPOT OAK BORE BEETLE, (GSOB)
PINE BARK BEETLE
SHOT HOLE BORER BEETLE
KUROSHIO SHOT HOLE BORERS
SPOTTED LANTERNFLY

In conjunction with the above outlined problems, insects can carry and spread or vector disease to plants, animals, and people.

Definition of Vector Control

Vector Control Programs are responsible for providing services that reduce the risk of illness caused by any organism transporting a pathogen. Some examples of these organisms and some of the pathogens they can carry are:

- Mosquito - West Nile Virus, St. Louis Encephalitis, Western Equine Encephalitis

- Rodent Fleas - Plague
- Western Black Legged Tick - Lyme Disease
- Rodents - Hantavirus

Riverside County actually has three vector control agencies. There are two Vector Control Districts and the County Vector Control Program operating through the Department of Environmental Health. The Coachella Valley Mosquito and Vector Control District manages these services for a portion of the desert community around the Coachella Valley. The Northwest Mosquito and Vector Control District provides services in the northwest portion of the county. The County Vector Control program covers the unincorporated areas of the County and other areas such as contracted cities that may fall outside of the two other vector district boundaries.

History

2020 - The county confirmed that mosquitoes collected from the unincorporated area of Nuevo tested positive for West Nile virus.

2017 - Parts of Riverside County (Moreno Valley, Indio, Rancho Mirage, Palm Desert, Bermuda Dunes, and Palm Springs) were under quarantine by state and federal officials to stop the spread of Red Imported Fire Ants. The quarantine limits the movement of plants and soil and requires commercial nursery growers to take steps to ensure their products are free of Red Imported Fire Ants. It is believed that the infestations in Southern California may stem from the shipment of infested nursery stock from the southeastern states.

2012 - Polyphagous Shot-Hole Borer, an insect pest that attacks over 200 types of agricultural and landscape trees, became widespread in Southern California. By 2015, this insect pest was established in Western Riverside County. This insect pest is detrimental to the avocado industry and landscape ornamental trees in California.

2009 - A portion of Riverside County (Coachella Valley) was placed under quarantine for Asian Citrus Psyllid (ACP). In 2011, the quarantine area was expanded to include Western Riverside County. The quarantine limits the movement of nursery stock and citrus from the quarantine area. Growers must take steps to ensure their products are free from ACP prior to movement.

2003 -Governor Gray Davis proclaimed a State of Emergency in Riverside, San Bernardino, and San Diego Counties where hundreds of thousands of trees were dead and dying after being weakened by drought and attacked by an infestation of bark beetles. Trees on more than 150,000 acres died and an estimated 75,000

residents were threatened by catastrophic wildfire, injury, and property damage from falling trees.

1999-2000 - an insect-spread disease (Pierce's Disease spread by Glassy-winged Sharpshooter) caused over $16 million damage to wine grapes in the west County area. Riverside County is under quarantine by state officials to stop the spread of Glassy-winged Sharpshooter and Pierce's Disease. The quarantine limits the movement of nursery stock, bulk grapes, bulk citrus and requires inspection and certification of these commodities by the local Agricultural Commissioner prior to movement from the infested area.

1991-1994 - Africanized Honeybees entered California near Blythe. Since 1994, they have spread to all counties in Southern California (Imperial, San Diego, Orange, Los Angeles, Riverside, San Bernardino, Ventura, and Kern). In 1993-94 and 1990, Med-fly infestations damaged fruit Countywide. In 1991, a whitefly infestation damaged melons, squash, and cucumbers Countywide.

Risk Assessment

Riverside County has a demonstrated vulnerability to insect infestation. The climate makes it possible for insects to reproduce with little natural hindrance to their proliferation.

Programs for monitoring Encephalitis in Riverside County have been in effect for more than two decades in a cooperative effort with the California Department of Public Health (CDPH), the University of California, the Mosquito and Vector Control Association of California, and the Riverside County Public Health Department. Since its introduction to Southern California in 2003, West Nile Virus surveillance has been a primary focus. This type of surveillance is driven by live mosquito trapping and processing for virus detection. The dead bird surveillance program is also headed up by CDPH where the public can report dead birds via their website (www.westnile.ca.gov) or a telephone hotline (1-877-WNV-BIRD). If CDPH staff determines that a dead bird is deemed acceptable for testing, Vector Control offices are notified for collection and testing. Another aspect of this program consists of sentinel chicken flocks being placed in areas where high populations of Culex tarsalis, the western encephalitis mosquito, are known to exist and where such areas infringe on local communities. Blood samples are sent to the CDPH Viral & Rickettsial Disease Laboratory where they are analyzed for the antibodies to the viruses. All of these disease indicators allow programs to focus their vector control efforts. Since 2006, at least 73 cases of West Nile virus human infections have been reported within Riverside County with ten fatalities. Horses have also been infected and succumbed to this disease.

In Riverside County, Plague is associated with animal disease outbreaks in populations of California Ground Squirrels. The vector is the Squirrel Flea. In 1979 during a disease outbreak among California ground squirrels in Silent Valley, located south of the City of Banning, a boy contracted Plague. It was properly diagnosed, and he recovered. This incident provided impetus to start the Plague Surveillance Program and eventually establish the County's Vector Control Program. Over the course of the past several decades surveillance activities have isolated Plague endemic areas in the San Jacinto Mountain range.

- **Effects on people and housing.** In the case of the Bark Beetle, the fire hazard it creates can cause the loss of homes and life as demonstrated in the fall fires of 2003. In the case of certain mosquitoes, West Nile Virus has infected humans and horses.

- **Effects on agriculture, environment, and commercial and industrial structures.** If a given insect is particularly hazardous to forests, crops, or property, it can cost the County millions of dollars in lost revenue and eradication and replacement.

Risk Assessment Conclusion

Insect infestation is an ongoing threat to agriculture and public health in Riverside County. The effects on people and property can be disastrous and costly.

The County and independent vector control special districts have aggressive programs utilizing:

- Disease surveillance such as certified personnel, insect/rodent traps, lab testing capacities, and Sentinel chicken flocks.
- Vector control equipment and approved pesticides.
- Public outreach.

Relationship to Other Hazards – Cascading Effects

The Bark Beetle infestation is a classic example of cascading effects. The insect killed hundreds of thousands of trees, increasing the wildfire hazard, which resulted in the unfortunate devastation of the fall fires of 2003.

5.3.19 Jail/Prison Event

Severity: 2

Probability: 3

OA Jurisdictions Affected by Jail or Prison Events

- Blythe
- Riverside
- Norco
- Banning
- Indio
- Murrieta

Hazard Definition

There are numerous State of California Correctional Institutions and County correctional facilities in Riverside County. Law enforcement is tasked with maintaining order in the facilities and preventing inmates from escaping into the community.

Chuckawalla Valley State Prison in Blythe provides long-term housing and services for male felons classified as medium and low-medium custody inmates.

Ironwood State Prison in Blythe provides services for minimum and medium custody inmates through academic education, vocational instruction, and support services. The prison also has the Institutional Hearing Program (IHP) which prepares inmates who are illegal immigrants for release to United States Immigration and Naturalization Service custody and the return to their native country.

The California Rehabilitation Center (CRC) in Norco is a medium Level II correctional facility and that only accommodates male inmates since April

2007. The CRC inmate population consists of felon commitments as well as Civil Addicts.

The California Institution for Woman (CIW) in Chino accommodates all custody levels of female inmates and functions as a reception/processing center for incoming female inmates. In addition to its large general population, CIW houses inmates with special needs such as pregnancy, psychiatric care, methadone, and medical problems such as HIV infection.

The California Institution for Men in Chino consists of four separate facilities under the administration of one warden. Located three miles south of the city of Chino, the facilities provide housing for minimum through medium custody inmates. The reception centers receive and process newly committed male felons from several southern California counties. The California Youth Authority operates a facility in Chino. While all of these facilities are in the County of San Bernardino, their close proximity to Riverside County and the City of Corona necessitate their inclusion here as facilities of concern to Riverside County.

In addition, there are five correctional facilities within the County, namely:

1. Robert Pressley Detention Center
2. Blythe Jail
3. John Benoit Detention Center
4. Cois M. Byrd Detention Center
5. Larry D. Smith Correctional Facility

History

Historically, the threat to society has been low. Law enforcement has demonstrated an overall capability to maintain the incarcerated population in a manner that does not pose an immediate threat to the general population.

Risk Assessment

Law enforcement must remain in a state of readiness for any incidents that could precipitate a threatening situation.

The passing of Assembly Bill 109 (2011) has shifted state prison populations back into the county jail populations to stop state prison overcrowding. The effects of this change are just now being seen. Time will tell what the overall impact on Riverside County and its citizens will be.

Riots within the facilities generally do not pose a direct threat to the public on the outside. Occasionally an inmate has escaped correctional facilities. The danger involved in their escape is predicated on the escapee's criminal characteristics.

Riverside County Regional Medical Center provides medical care to both state and local inmates in an area designated as a prison ward, which could have a severe impact on health care delivery at the facility during and immediately after a prison ward incident. The degree of disruption would, of course, depend on the extent of the incident.

- Effects on people and housing. Violent offenders escaping custody in a disaster could lead to residents in surrounding areas being at risk of harm. Risks are high.
- Effects on commercial and industrial structures. The risks are minimal.
- Effects on infrastructure. The risks are minimal.
- Effects on agriculture and the environment. The risks are minimal.

Risk Assessment Conclusion

Relatively speaking, the risks of jail and prison incidents will remain a minimal threat to the County when compared to other hazards. It is important that law enforcement remains in a state of readiness for any incidents that could precipitate a threatening situation.

Relationship to Other Hazards – Cascading Effects

In the event that Interstate 10 becomes damaged, it could affect evaluation routes and essential supplies from getting into the prison or jail.

Risks are minimal but have the potential to decrease responder availability during disasters if a facility is damaged. Another possible drain on resources would be in the event of inmate relocation due to damaged facilities or the potential damage to a facility.

5.3.20 Pipeline Disruption

Severity:3

Probability: 2

OA Jurisdictions Affected by Pipeline Incidents

- Desert Water Agency
- Western Municipal Water District
- City of Banning
- City of Beaumont
- City of Corona
- City of Palm Springs
- City of Temecula
- Riverside Community College District
- San Gorgonio Memorial Hospital

Hazard Definition

There are many pipeline distribution systems that transit Riverside County, including systems for water, natural gas, and petroleum products.

Identifying Natural Gas Pipeline Hazards (SHMP)

The U.S. is heavily dependent on transmission pipelines to distribute energy and fuel sources. Virtually all-natural gas, which accounts for about 32 percent of the energy consumed annually, is transported by transmission pipelines. Energy demand in the U.S. continues to increase. Although California is a leader in exploring and implementing alternative energy sources such as wind and solar, the expansion of traditional energy sources continues. Increased urbanization is resulting in people living and working close to existing gas transmission pipelines that were placed prior to government agencies adopting and implementing land use and other pipeline safety regulations.

Compounding the potential risk is the age and gradual deteriorating of the gas transmission system due to natural causes. Significant failure, including pipe breaks and explosions, can result in loss of life, injury, property damage, and environmental impacts. Causes of and contributors to pipeline failures include construction errors, material defects, internal and external corrosion, operational errors, control system malfunctions, outside force damage, subsidence, and seismicity. Growth in population, urbanization, and land development near transmission pipelines, together with the addition of new facilities to meet new demands, may increase the likelihood of pipeline damage due to human activity and the exposure of people and property to pipeline failures.

Figure 33: California Gas Lines

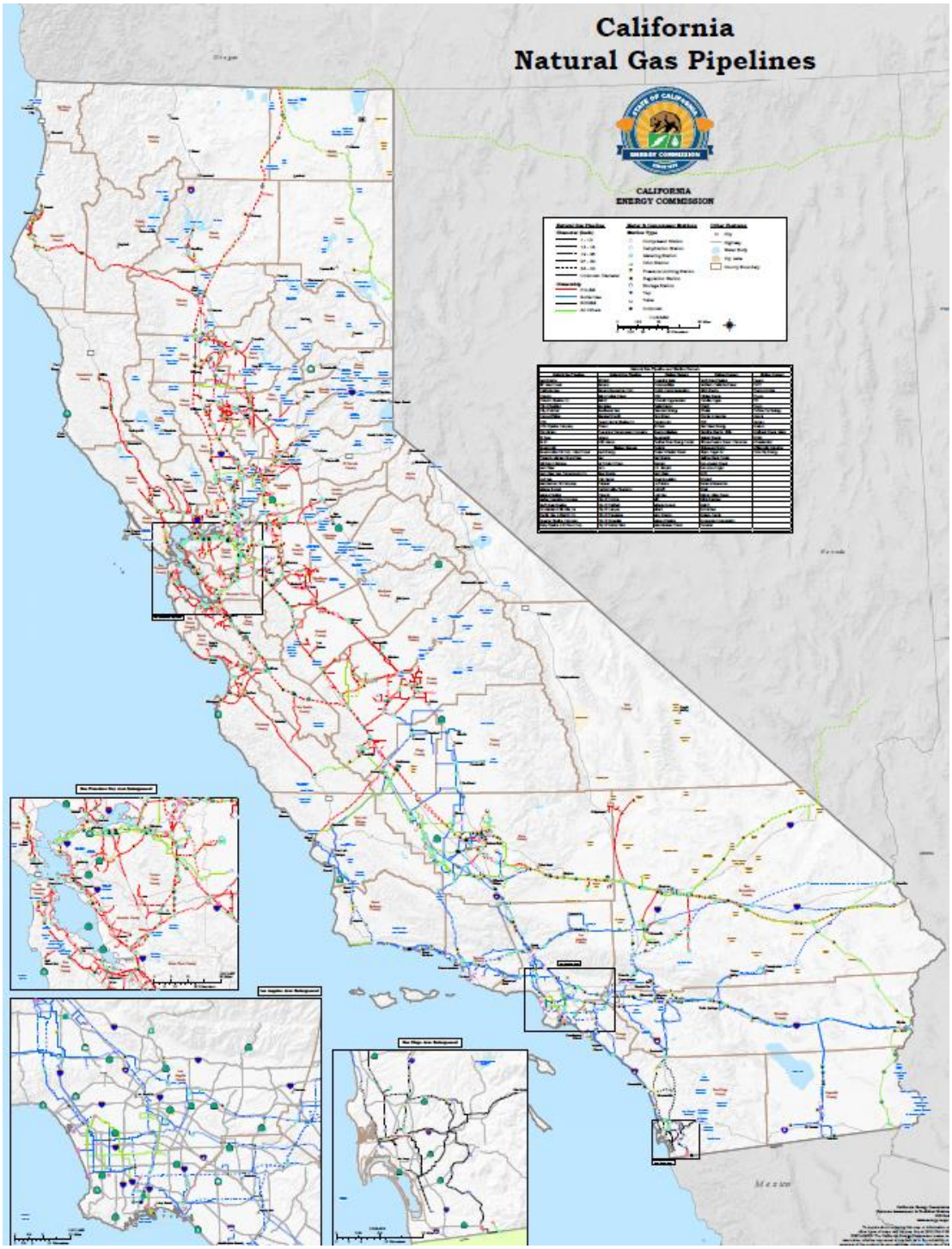
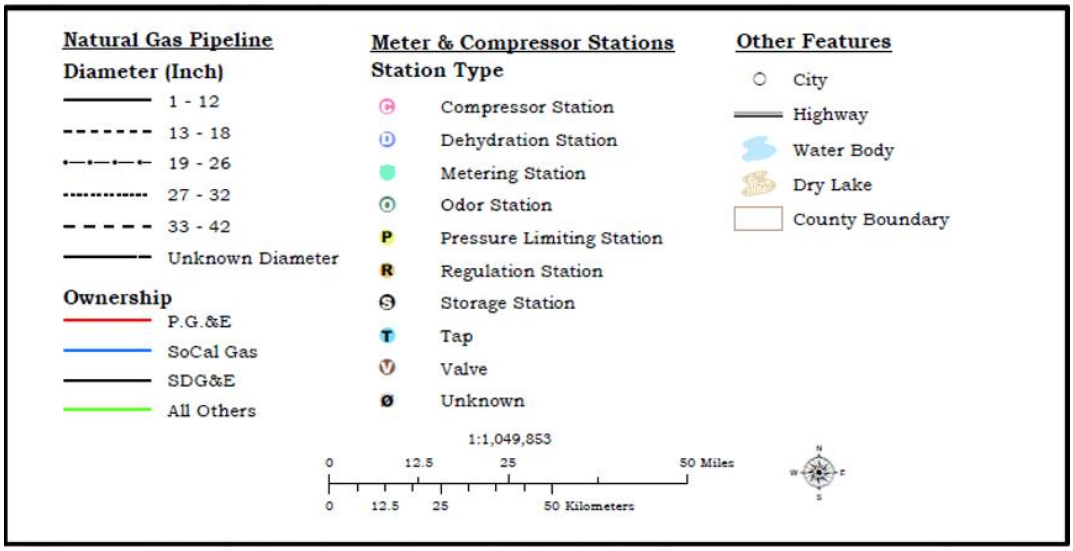


Figure 33 *Continued*



Natural Gas Pipeline and Station Owners				
Natural Gas Pipeline	**Natural Gas Pipeline**	**Station Owners**	**Station Owners**	**Station Owners**
Aera Energy	SDG&E	Cogentrix Solar	North Baja Pipeline	Texaco
BP West Coast	Seneca	Conocophillips	Northern California Power	TGTC
California Gas	Seneca Resources Corp	Contra Costa Generating	NRG Energy	Thermo Ecotek
Chevron	Silicon Valley Power	CPN	Oildale Energy	Thums
Chevron Pipeline Co	SMUD	Crockett Cogeneration	Oroville Cogen	TID
City of Redding	Socalgas	Delta Energy	PG&E	Tosco
City of Vernon	Southwest Gas	Diamond Energy	Private	Turbine Technology
ConocoPhillips	Standard Pacific	Dick Brown	Procter & Gamble	Unocal
CPN	Tesoro SoCal Pipeline Co	Dynamis Inc	PXP	Venoco
CPN Pipeline Company	Thums	El Paso	Red Hawk Energy	Watson
Dick Brown	Tuscarora Transmission Company	Energy Initiatives	Redding Electric Utility	Wellhead Power Gates
El Paso	Venoco	ExxonMobil	Reliant Energy	WGSI
Ex El	Wild Goose	Feather River Energy Center	Rhone-Poulenc Basic Chemicals	Wheelabrator
Exxonmobil	**Station Owners**	Federal	Ridgewood Byron	Williamette Industries
Exxonmobile Oil Corp - West Coast	Aera Energy	Foster Wheeler Power	Ripon Cogen Inc	Yuba City Energy
Freeport- Morgan Oil and Gas	Aes	Gwf Energy	Salinas River Cogen	
Gill Ranch Storage	Air Product Chem	Intergen	San Joaquin Power	
Kern River	Arco	J.R. Simplot	San Jose Cogen	
Kern River Gas Transmission Co	Bear Energy	Kern River	SCE	
Lodi Gas	C&H Sugar	Knauf Insulation	SDG&E	
Macpherson Oil Company	Calpeak	La Paloma	Seneca Resources	
Midway Sunset	Central Valley Financing	LADWP	Shell	
Mojave Pipeline	Chevron	Lodi Gas	Silicon Valley Power	
Naftex Operating Company	City Of Corona	MID	Sithe Energies	
North Baja Pipeline	City Of Fairfield	Midway Sunset	SMUD	
Occidental of Elk Hills, Inc	City Of Lompoc	Mirant	SoCal Gas	
Pacific Gas & Electric Co	City Of Pasadena	Mmc Energy	Solano County	
Questar Pipeline Company	City Of Roseville	Mojave Pipeline	Sunnyside Cogeneration	
Ruby Pipeline & El Paso Corp.	City Of Santa Clara	Mountainview Power	Tenaska	

Source: https://energy.ca.gov/sites/default/files/2020-10/Natural_Gas_Pipelines_ADA.pdf

Major water conveyance systems consist of the Colorado River Aqueduct operated by Metropolitan Water District (MWD) of Southern California, the California Aqueduct operated by the State Department of Water Resources (DWR), and water distribution lines operated by MWD.

A major pipeline carrying natural gas parallels Interstate 10 and Highway 60 throughout the County. This pipeline brings gas from the southwestern states into Southern California.

Petroleum products are stored and distributed at many major areas throughout the County. Of particular interest are the aviation fuel tanks and pipelines located at March Air Reserve Base. Although under the control of the U.S. Government, their potential for impact on the surrounding area is of interest to the County.

History

Riverside County has not experienced a large-scale pipeline disruption. However, there are multiple small incidents on a yearly basis that are handled by the respective resource provider.

Risk Assessment

A rupture of the main line with a major release could have serious effects in terms of flooding and property damage. A gas line rupture could explode causing serious property damage and loss of life.

- **Effects on people and housing.** The consequences to people and housing from pipeline disruption can range from flooding to explosion, both could be quite severe. This can impact the public's confidence in the jurisdictions ability to govern following an incident.

- **Effects on commercial and industrial structures.** Similarly, the effects on commercial and industrial structures from flooding or explosion could be severe.

- **Effects on agriculture and the environment.** In the same way, the effects on agriculture and the environment from flooding or explosion could be severe.

Risk Assessment Conclusion

Pipelines are vulnerable to especially with the possibility of an earthquake, causing significant breakage. The degree of damage county-wide for a given rupture would be minimal, even though there might be significant injuries, loss of life and property in the

immediate area of the incident, depending on what kind of pipe ruptures and where the rupture occurs.

Relationship to Other Hazards – Cascading Effects

Pipeline incidents may lead to flooding, fires and contamination by air, water, and land. Incidents with natural gas or petroleum product pipelines may lead to explosion and fire.

5.3.21 Landslide

Severity: 3

Probability: 3

OA Jurisdictions Affected by Landslide Incidents

- Most mountain areas within the County

Hazard Definition

Like its earthquake-generating faults, California's mountainous terrain is also a consequence of dynamic geologic processes in operation as the North American Plate grinds past the Pacific Plate. More than one-third of California is mountainous terrain that generally trends parallel to the coast, forming a barrier that captures moisture from offshore storms originating in the Gulf of Alaska and Mexico. Steep topography, weak rocks, heavy winter rains, and occasional earthquakes all lead to slope failures more frequently than would otherwise occur under gravity alone.

A landslide is the breaking away and gravity-driven downward movement of hill slope materials, which can travel at speeds ranging from fractions of an inch per year to tens of miles per hour depending on the slope steepness and water content of the rock/soil mass.

Landslides range from the size of an automobile to a mile or more in length and width and, due to their sheer weight and speed, can cause serious damage and loss of life. Their secondary effects can be far reaching; for example, catastrophic flooding can result from the sudden release of river water impounded by landslide debris or slope failure of an earthen dam.

Although the area affected by a single landslide is less than that of earthquakes, landslides are pervasive in California's mountainous terrain and occur far more often, resulting in cumulative losses approaching $200 million in a given year. Average annual landslide losses in California are estimated at about $100 million. Because landslides

occur as isolated events in both time and location, and there is presently no systematic means in place for documenting their losses, landslide hazard is often underestimated or goes unrecognized in the policy arena, even though landslides continue to cause millions of dollars in cumulative damage to California's homes, businesses, and infrastructure.

A landslide is a geologic hazard where the force of gravity combines with other factors to cause earth material to move or slide down an incline. Some landslides move slowly and cause damage gradually, whereas others move so rapidly that they can destroy property and take lives suddenly and unexpectedly. Slopes with the greatest potential for sliding are between 34 degrees and 37 degrees. Although steep slopes are commonly present where landslides occur, it is not necessary for the slopes to be long.

Landslides, rock falls, and debris flows occur continuously on all slopes; some processes act very slowly, while others occur very suddenly, often with disastrous results. As human populations expand over more of the land surface, these processes become an increasing concern.

The most common types of landslides are (U.S. Department of the Interior, U.S. Geological Survey, Fact Sheet 2004-3072, July 2004):

Slides - Although many types of mass movements are included in the general term "landslide," the more restrictive use of the term refers only to mass movements, where there is a distinct zone of weakness that separates the slide material from the more stable underlying material.

Falls - Abrupt movements of masses of geologic materials, such as rocks and boulders that become detached from steep slopes or cliffs.

Topples - Toppling failures are distinguished by the forward rotation of a unit or units about some pivotal point, below or low in the unit, under the actions of gravity and forces exerted by adjacent units or by fluids in cracks.

Flows – There are five basic categories of flows that differ from one another in fundamental ways.

a. Debris flows: A debris flow is a form of rapid mass movement in which a combination of loose soil, rock, organic matter, air, and water mobilize as a slurry that flows downslope.
b. Debris avalanche: This is a variety of very rapid to extremely rapid debris flow.
c. Earthflow: The slope material liquefies and runs out, forming a bowl or depression at the head. The flow itself is elongate and usually occurs in fine-grained materials

or clay-bearing rocks on moderate slopes and under saturated conditions. However, dry flows of granular material are also possible.

d. Mudflow: A mudflow is an earthflow consisting of material that is wet enough to flow rapidly and that contains at least 50 percent sand-, silt-, and clay-sized particles. In some instances, for example in many newspaper reports, mudflows and debris flows are commonly referred to as "mudslides."
e. Creep: Creep is the imperceptibly slow, steady, downward movement of slope-forming soil or rock.

Lateral Spreads - Lateral spreads are distinctive because they usually occur on very gentle slopes or flat terrain. The dominant mode of movement is lateral extension accompanied by shear or tensile fractures. The failure is caused by liquefaction, the process whereby saturated, loose, cohesionless sediments (usually sands and silts) are transformed from a solid into a liquefied state.

The geologic setting of southern California locally is conducive to slope failures and slope-failure deposits (landslides) that can be a hazard to human life and property. These hazards are created when geologic materials are displaced down a topographic slope under the influence of gravity. Factors that determine slope-failure occurrence include:

1. Slope angle
2. Geologic materials (substrate)
3. Climatic conditions
4. Earthquake shaking
5. Debris Flows

Sudden "mudslides" gushing down rain-sodden slopes and gullies are widely recognized by geologists as a hazard to human life and property. Most "mudslides" are localized in small gullies, threatening only those buildings and roadways in their direct path. They can burst out of the soil on almost any rain-saturated hill when rainfall is heavy enough. Often, they occur without warning in localities where they have never been seen before.

There are predictable relationships between local geology and landslides, rockfalls and debris flows. Knowledge of these relationships can improve planning and reduce vulnerability. Slope stability is dependent on many factors and their interrelationships, including rock type, pore water pressure, slope steepness, and natural or human-caused undercutting. Slope and geologic conditions are identified in Map 37 & 38.

Riverside County has a history of landslides during seasons of high precipitation.

History

January 2023 – Landslides reported in Western Riverside due to an Atmospheric River

October 2022- Landslide on Highway 74 in Hemet

February 2019 – Mud and debris flows resulting from heavy rains on the Holy Fire Burn Scar around Lake Elsinore

November 2018 – Mud and debris flows occurred in the Temescal Valley due to rainstorms

July 2017 – Mud and debris Flows resulting from a thunderstorm in Mecca

January 2016 – Landslides near Banning resulted from a low 4.3 magnitude earthquake

December 2014 – Mud Flow in Gilman Springs, San Jacinto

2002 – Landslide on Highway 60 in San Timoteo Badlands

Risk Assessment

There is a continuing risk of landslides during seasons of high precipitation. In addition, earthquakes could also cause significant landslides. The County has a great deal of hilly and mountainous terrain increasing the likelihood of a landslide incident.

- **Effects on people and structures**. Landslides constitute a threat to property, road safety, and life. Small landslides would not pose a serious risk. However, there is a possibility that a severe landslide in a populated area could cause significant damage and risk to life. The impact in the public's confidence in the jurisdictions ability to govern following one of these incidents would be low due to pre identified plans and resources available to the County and OA in these events.

- **Effects on infrastructure**. Landslides can cause disruptions in power supply pipelines, power and telephone poles, and County roads and highways.

- **Effect on Critical Facilities**. An initial review of known landslide locations and the location of critical facilities indicates that there does not appear to be any of these facilities in close proximity to a Landslide Management Zone.

- **Effects on agriculture & the environment**. Similar to the threats to people and structures, small landslides would not pose a serious risk. However, there is the

possibility that a severe landslide could cause significant damage and risk of life to elements of the agricultural industry. The environment could be impacted somewhat due to debris flows however most areas where this is prone to occurring would align with burn scars where the environment has already been impacted. The debris flows would delay the regrowth of local plants.

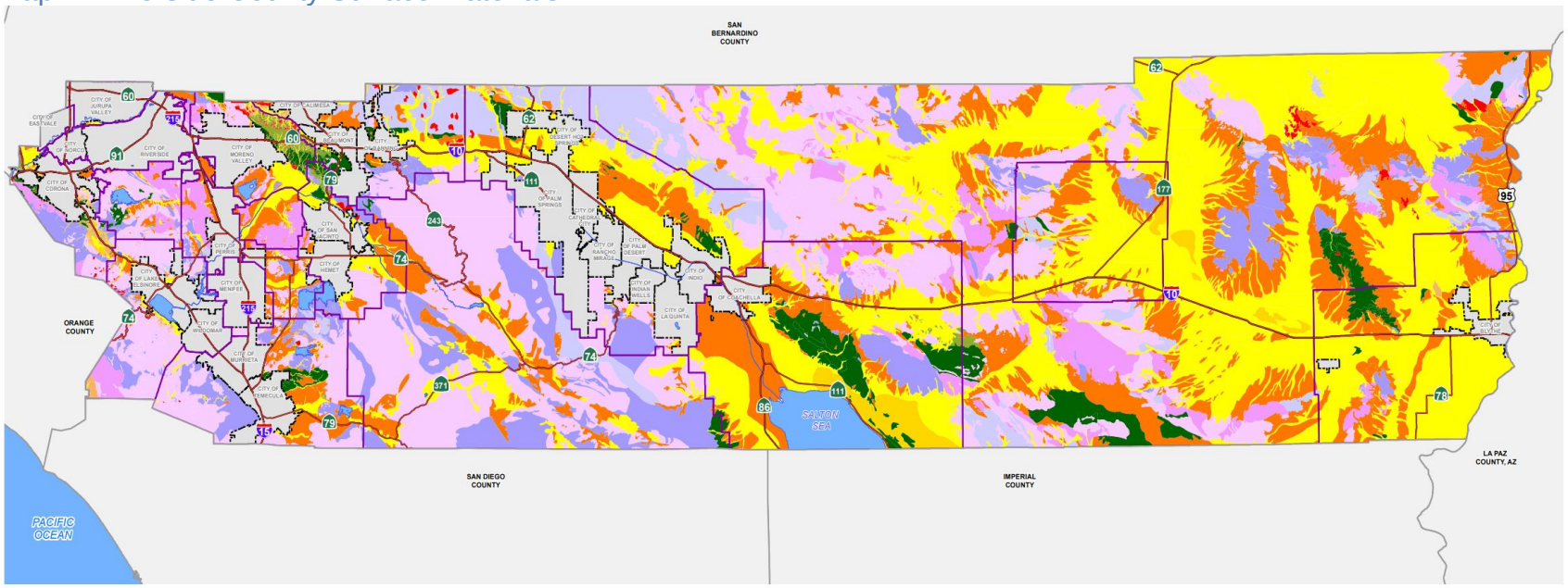
Risk Assessment Conclusion

Landslides are a continuing risk in Riverside County, especially during seasons of high precipitation. History has shown also that many landslides occur in areas where landslides have not been predicted.

Relationship to Other Hazards – Cascading Effects

As noted, landslides can be the result of an earthquake or severe weather. The starting mechanism for a landslide will determine some of the cascading events. The end result is if a landslide occurs in a populated area, or area used by people, earth materials can cover or impede the area as described above. If a landslide were to impact power lines or other utility systems a cascading effect could be power, utility or sewer loss.

Map 7: Riverside County Surface Materials



Surfical Materials

- Holocene-age, fine-grained unconsolidated sediments, including stream-, gravity-, lake-, and wind-deposited sediments. Deposits in this category include stream channel, alluvial fan, flood plain, colluvial dune, and lucustrine sediments.
- Holocene-age, coarse-grained unconsolidated sediments, including stream- and gravity-deposited sediments.Includes alluvial fan, stream channel, and terrace deposits.
- Pleistocene-age, fine-grained unconsolidated to moderately consolidated sediments.
- Pleistocene-age, coarse-grained unconsolidated to moderately consolidated sediments.

Soft-Rock and Moderately Consolidated to Undurated Sediments

- Tertiary-age and older, fine-grained soft rock and moderately consolidated to indurated sediments; generally bedded or fractured. Bedding or fractures assumed to provide planes of weakness along which slope insability could occur.
- Tertiary-age and older, coarse-grained soft rock and moderately consolidated to indurated sediments;typically massive to thickly bedded.

Metamorphic Rocks of Various Ages, including Meta- Igneous and Metasedimentary rocks

- Massive igeneous rocks.
- Foliated and/or fractured igeneous rocks.

Igneous Rocks of Various Ages, both Volcanic and Plutonic

- Massive metamorphic rocks.
- Foliated and/or fractured metamorphic rocks.

Landslides

- Mapped landslides. For additional information, refer to the landslide susceptibility map.

- Highways
- Area Plan Boundary
- City Boundary & MJPA
- Waterbodies

Figure S-6

August 6, 2019

0 10 20 Miles

Disclaimer: Maps and data are to be used for reference purposes only. Map features are approximate, and are not necessarily accurate to surveying or engineering standards. The County of Riverside makes no warranty or guarantee as to the content (the source is often third party), accuracy, timeliness, or completeness of any of the data provided, and assumes no legal responsibility for the information contained on this map. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user.
Disclaimer: For information within City boundary, refer to the City's General Plan, or March JPA General Plan.

ENGINEERING GEOLOGIC MATERIALS MAP

Map 8: Riverside County Slope Instability Map

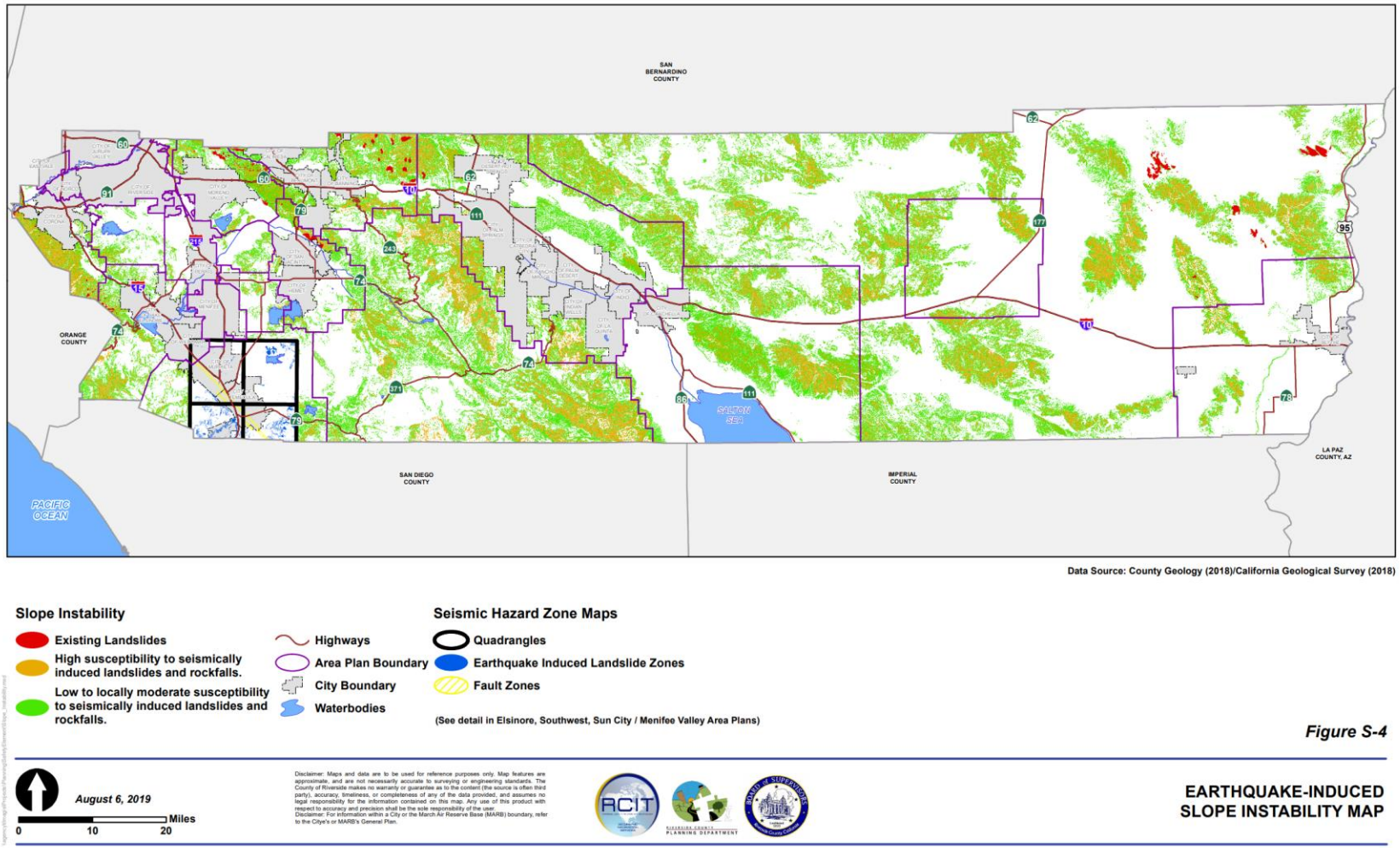


Figure S-4

5.3.22 Hazardous Materials Incident

Severity: 3

Probability: 4

OA Jurisdictions Affected by Hazardous Materials Incidents

- All incorporated cities of Riverside County
- Unincorporated areas of Riverside County

Hazard Definition

Hazardous materials (Hazmat), consist of substances that by their nature, lack of containment, and reactivity, have the capability for inflicting harm. Hazmat poses a threat to health and the environment when improperly managed. Hazmat can be toxic, corrosive, flammable, explosive, reactive, an irritant, or a strong sensitizer. Hazmat substances also include certain infectious agents, radiological materials, oxidizers, oil, used oil, petroleum products, and industrial solid waste substances.

Hazardous materials can pose a threat where they are manufactured, stored, transported, or used. They are used in almost every manufacturing operation and by retailers, service industries, and homeowners.

Hazardous material incidents are one of the most common threats to public health and the environment. Incidents may occur as the result of natural disasters, human error, terrorism, and/or accident.

Hazmat incidents typically take five forms:

1. Fixed facility incidents
    - Laws require those facilities to notify state and local authorities about what is being used or produced there and incidents with the materials can be planned for.
2. Transportation incidents
    - Transportation incidents are more difficult to prepare for because it is impossible to know what material(s) could be involved until an accident occurs.

3. Pipeline incidents

    - Pipelines carry natural gas and petroleum. Breakages in pipelines carry differing amounts of danger, depending on where and how the break occurs, and what is in the pipe.

4. Terrorism incidents (or suspected Terrorism)

    - Intentional acts involving violence and/ or the threat of violence. Similar to transportation incidents, these occurrences are more difficult to prepare for due to unknown locations and substances.

5. Illegal Disposal / Abandonment
    - Similar to transportation incidents, these occurrences are more difficult to prepare for due to unknown locations and substances.

History

Many forms of hazardous materials are present in both the rural and urban areas of Riverside County. They are present in permanent storage locations, roadway and railway transport mediums, long-distance pipelines, and at various industrial and agricultural application sites. The County's location, with its rail and highway transportation routes, and various industries, has a growing potential for serious hazardous materials incidents. Interstates 10, 15 and 215, and State Highways 60 and 91 are all heavily traveled by trucks. Those trucks carry a wide variety of hazardous materials including gasoline, corrosives, oxidizers, pesticides, and radioactive materials.

The railroad lines traveling throughout the County also carry some extremely hazardous cargoes. Fortunately, the railroads have a good safety record with regard to the transportation of hazardous materials.

Traffic on railroads is not as prevalent as on truck routes in Riverside County but poses a much greater problem when an accident is involved due to the volumes of hazardous materials on board.

There is a great deal of air traffic along the airways above Riverside County with the March Air Reserve Base Palm Springs International Airport, French Valley Airport, Hemet-Ryan Airport, Riverside Municipal Airport, Jacqueline Cochran Regional Airport and Bermuda Dunes Airport all operating within the County. The potential for a hazardous materials incident exists, especially with respect to military operations.

There are many pipeline distribution systems that traverse the County. These are discussed in Section 5.3.20.

Table 56: History of Hazmat Incidents in 2021/2022

The Riverside County Department of Environmental Health Hazardous Materials Emergency Response Program handled over 977 incidents in fiscal year (FY21/22) often in conjunction with Cal Fire countywide except for a few cities that handled Haz Mat incidents within their jurisdiction. The incidents cover all areas described in the definition section.

Riverside County Department of Environmental Health Hazmat Incidents July 1, 2021 thru June 30, 2022	
HAZARDOUS MATERIALS INCIDENT TYPE	TOTAL NUMBER
General Hazmat	104
Drug Labs	28
Facility Incidents	130
Roadway Incidents	371
Aircraft Incidents	11
Railroad Incidents	51
Mercury Incidents	3
Dielectric Fluid Incidents	24
Radiological Incidents	4
Pesticide Incidents	6
Medical Waste	3
Noxious Odors	33
Illegal Disposal of substances	156
Suspected Terrorism	2
Natural Gas Release	51
TOTAL Hazardous Materials Incidents:	977
Non Haz Mat (other Environmental Health Incidents) Vector, Sewage, Food Facility	87

The administering agencies within Riverside County are responsible for the control of fixed hazardous materials facilities, including the Participating Agencies of Riverside Fire Department and Corona Fire Department.

Risk Assessment

The number of hazardous materials transported over rail and roadways on a daily basis is unknown, but estimated to be steadily increasing as our economy grows. There is the potential for a hazardous materials incident almost anywhere on the numerous highways and roads that crisscross Riverside County. The greatest concern focuses on the 10, 15, 60, 91, and 215 freeways. The most vulnerable areas along these routes are considered to be the on/off ramps and interchanges.

A major concern with the trucking industry is the safe operation of their trucks. With the deregulation of the trucking industry, spot checks of trucks in many states, including California, have shown that a large percentage of trucks currently in service are not in safe enough condition to be operated on public highways.

Many industries are moving into the County. Many facilities exist today, with more construction forecast. To support these industries, the County is likely to realize a large increase in the transportation of toxic, flammable, and corrosive materials into and out of the County. With the increased use of hazardous materials, there is an increased need for safe hazardous waste management and disposal. There will be the increased transportation of hazardous materials waste to proper disposal sites located outside of Riverside County.

Illegal dumping and clandestine drug labs are also a hazardous materials problem. Although not exclusive to Riverside County, the County is a target for these activities due to its accessibility in the outlying areas and the open living conditions in the mountain and desert areas.

No Class I landfills are operated in Riverside County. Seven Class III landfills are active in Riverside County. All accept only non-hazardous solid wastes and are located in unincorporated areas. Six of these landfills are operated by the Riverside County Waste Resources Department, while one (El Sobrante) is privately owned and operated. The El Sobrante, Badlands, Lamb Canyon, and Blythe landfills currently accept waste from outside of Riverside County. Blythe, however, only takes small loads or may refuse to accept waste because it is a relatively small facility.

Hazardous waste generators include food and beverage processors as well as battery, semi- conductor, and metal container manufacturers, as well as automobile repair facilities, munition manufacturers, utility districts, and other industries. Although hazardous waste generators are scattered throughout Riverside County, most of the large generators of hazardous waste are located in the western portion of the County, including in the cities of Corona, Jurupa Valley, Riverside, and Temecula.

Nearly all of Riverside County residents have some type of hazardous materials in their homes. Examples include motor oil, paints, cleaners, aerosols, and pesticides. Household hazardous materials pose serious health issues for people who improperly use or dispose of these materials. Adverse environmental impacts can occur when household hazardous materials are disposed of in unlined sanitary landfills, where these materials may leach through the soil and contaminate groundwater.

Medical facilities, including clinics, hospitals, professional offices, blood and plasma centers, and medical research facilities generate a wide variety of hazardous substances. These substances may include contaminated medical equipment or supplies, infectious biological matter, prescription medicines, and radioactive materials used in medical procedures. The disposal of medical waste is achieved by on-site autoclaving of red-bagged waste (any medical waste that could possibly transmit a pathogen) and subsequently transported to a Class III landfill, or to a permitted incinerator. The Riverside County Department of Environmental Health has regulatory control over the disposal of medical and biological waste.

- **Effects on people and housing.** Historical events in Riverside County have necessitated evacuations when a Hazmat incident occurs. Relative to some of the other natural hazards assessed earlier in this LHMP, the numbers of people affected by Hazmat incidents are usually less. The impact on the public's confidence in a jurisdictions ability to govern would be minimal.

- **Effects on commercial and industrial structures.** There may be economic consequences due to Hazmat incidents, but the damage is generally limited to clean-up of facilities and grounds, or simply an interruption of business due to evacuation.

- **Effects on infrastructure.** Hazmat incidents involving transportation may result in downed power lines. Also, Hazmat materials may impact waterways and drainage systems, and incidents can lead to the evacuation of schools, business districts, and residential areas.

- **Effects on agriculture & the environment.** As noted previously, there is a long history of agricultural production in Riverside County. Agricultural activities typically include the storage and periodic application of pesticides, herbicides, and fertilizers, as well as the storage and use of toxic fuels and solvents. The infiltration of these substances may leach into local groundwater supplies, presenting an elevated risk of groundwater contamination.

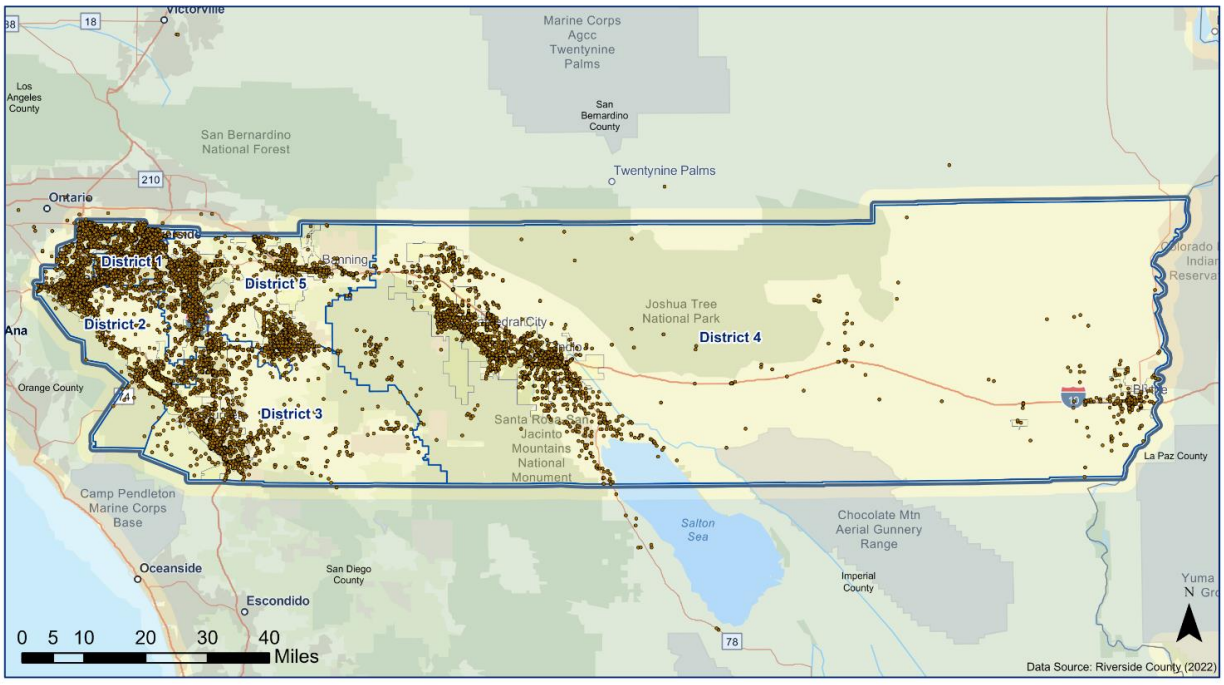
Risk Assessment Conclusion

Although Hazmat incidents can have serious property damage and even loss of life, Hazmat accidents do not generally affect extremely large areas. Hazmat incidents present a real danger and are highly unpredictable in terms of determining when or where they will occur, but generally do not pose a serious threat to the ability of Riverside County to respond. Reasonable preparation by law enforcement, fire department, and medical community enables the County to deal with the majority of likely events. Many emergency workers prepare for Hazmat events as part of their ongoing training. Agencies and facilities are also routinely equipped to deal with most events that might occur.

Relationship to Other Hazards – Cascading Effects

Besides the immediate effect of a hazardous materials incident at the scene of the emergency, there are ancillary effects as well. For instance, there may be impacts on waterways and drainage systems, and the evacuation of schools, business districts, and residential areas.

Map 39: Hazardous Material Facilities within the OA



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Hazardous Material Locations, in Riverside County

5.3.23 Water Supply Disruption/Contamination

Severity: 2

Probability: 3

OA Jurisdictions Affected by Hazardous Materials Incidents

- All incorporated cities of Riverside County
- Unincorporated areas of Riverside County

Hazard Definition

People exposed to water supply disruption or toxic pollutants caused by contaminations may be threatened by a number of health risks:

- Dehydration, hepatitis, and cancer
- Eating contaminated food products, such as fish from contaminated waters; meat, milk, or eggs from animals that fed on contaminated plants; and fruits and vegetables grown in contaminated soil
- Drinking water contaminated by toxic pollutants
- Ingesting contaminated soil. Young children are especially vulnerable because they often ingest soil from their hands or from objects, they place in their mouths
- Touching (making skin contact with) contaminated soil, dust, or water (for example, during recreational use of contaminated water bodies)

Risk Assessment

According to the Environmental Protection Agency, there are four major types of drinking water contamination: physical, chemical, biological, and radiological.

Physical contaminants primarily impact the physical appearance or other physical properties of water. Examples of physical contaminants are sediment or organic material suspended in the water of lakes, rivers, and streams from soil erosion.

Chemical contaminants are elements or compounds. These contaminants may be naturally occurring or human-caused. Examples of chemical contaminants include nitrogen, bleach, salts, pesticides, metals, toxins produced by bacteria, and human or animal drugs.

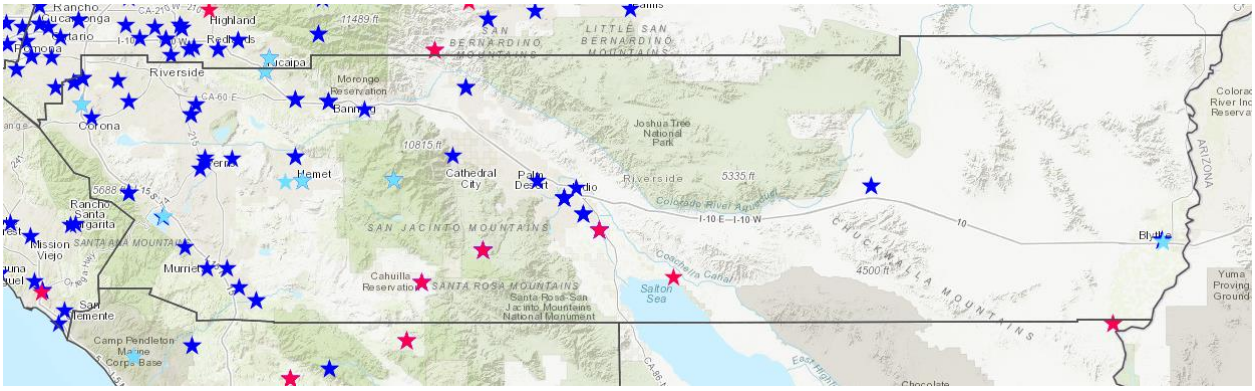
Biological contaminants are organisms in water. They are also referred to as microbes or microbiological contaminants. Examples of biological or microbial contaminants include bacteria, viruses, protozoan, and parasites.

Radiological contaminants are chemical elements with an unbalanced number of protons and neutrons resulting in unstable atoms that can emit ionizing radiation. Examples of radiological contaminants include cesium, plutonium, and uranium.

Source: https://www.epa.gov/ccl/types-drinking-water-contaminants

Ground water contamination is also a major threat because of its use for drinking water and irrigation. Potential groundwater contaminants include storage tanks, septic systems, hazardous waste, landfills, chemicals and road salts, and littering.

Map 40: Water Systems in Riverside County



Source: waterboards.maps.arcgis.com

Map illustrated water systems in Riverside County. Blue stars represent in compliance water systems, red stars are systems out of compliance.

- **Effects on people and housing.** The effect on housing is relatively low, but the effect on people may be devastating. Though the County encourages residents to store at least 72 hours of water for their household, the reality is only a small percentage actual partake in that practice. This means that in the event of disruption or contamination that renders usable water sources limited, people may become dehydrated and suffer from other serious health issues such as cancer. In the event that contamination happens during the summer months when temperatures reach 90-105, the population is at an even higher risk. The impact

on the public's confidence in the jurisdictions ability to govern following an incident would be minimal.

- **Effects on commercial and industrial structures.** The effect to structures is relatively low.
- **Effects on infrastructure.** The effect to structures is relatively low.
- **Effects on agriculture and the environment.** Water contamination could devastate agriculture in Riverside County. The contaminant could be poisonous to crops and livestock. Depending on the level of exposure, entire field could be damaged to the point of total loss. This can impact the Environment overall as pollutants could kill off plants leading to death of animals reliant upon the effected plant life.

History

March 2, 2017 – 198 residents were exposed to water contaminated with uranium in the unincorporated area of Pinyon Pines.

Risk Assessment Conclusion

Due to high levels of monitoring and preparedness within water agencies, the threat of water contamination is fairly low. However, it could greatly impact the county if it is caused by a cascading event such as an earthquake.

Relationship to Other Hazards – Cascading Effects

The loss of water could drastically affect other human-caused and natural hazards. In the event of an earthquake where pipelines are damaged, it could greatly reduce the amount of water available to fight fires. The amount of water available to residents would also be drastically reduced.

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Section 6.0 National Flood Insurance Program

Public Law 90-448 of 1968, known as the National Flood Insurance Act, established the National Flood Insurance Program (NFIP) which provides for federal government underwriting of flood insurance policies sold by private companies. Supported by a national mapping system showing boundaries for 100- and 500-year floodplains, the NFIP encourages local governments to direct development away from floodplain areas or mitigate flood risks through local floodplain management regulations. Through the Community Rating Service (CRS), the NFIP provides for financial incentives in the form of lower insurance rates for local communities encouraging mitigation of flood hazards in a manner parallel to rate incentives related to private fire insurance and enforced by the mortgage industry. The National Flood Insurance Act was modified in 1994 to provide for flood hazard mitigation planning and project grants.

The unincorporated community of Riverside County joined the NFIP on April 15, 1980. Currently, unincorporated Riverside County is one of 30 local communities that participate in the NFIP. Please refer to the table on the following page for participating jurisdictions.

Table 57: Jurisdictions and Authorities Participating with National Flood Insurance Program

CID	COMMUNITY NAME	INIT FHBM	INIT FIRM IDENTIFIED	CURR EFF MAP DATE	REG-EMER DATE	IDENTIFIED TRIBAL
060763E	AGUA CALIENTE BAND OF CAHUILLA INDIANS TRIBE	06/21/74	03/02/83	04/19/17	06/21/96	Yes
060246#	BANNING	03/15/74	10/17/78	08/28/08	10/17/78	No
060247#	BEAUMONT	04/05/74	10/17/78	08/18/14	10/17/78	No
060248#	BLYTHE	05/10/74	06/30/76	(NSFHA)	06/30/76	No
060740#	CALIMESA	-	08/28/08	08/28/08	05/01/91	No
060753E	CANYON LAKE	-	05/15/80	04/19/17	09/15/98	No
060704#	CATHEDRAL CITY	-	05/01/85	08/28/08	11/12/82	No
060249H	COACHELLA,	05/17/74	09/30/80	03/06/18	03/07/18 (S)	No
060250#	CORONA	05/24/74	05/15/78	08/28/08	05/15/78	No
060251#	DESERT HOT SPRINGS	05/24/74	04/02/79	08/28/08	04/02/79	No
060155#	EASTVALE	-	08/28/08	08/28/08	06/05/13	No
060253E	HEMET	05/24/74	09/29/78	04/19/17	09/29/78	No
060254E	INDIAN WELLS	06/28/74	09/14/79	04/19/17	09/14/79	No
060255E	INDIO	05/31/74	09/14/79	03/06/18	09/14/79	No

060286#	JURUPA VALLEY	-	08/18/14	08/18/14	09/23/13	No
060709E	LA QUINTA	-	06/19/85	04/19/17	07/01/85	No
060636E	LAKE ELSINORE	06/28/74	09/17/80	04/19/17	09/17/80	No
060176E	MENIFEE	-	08/28/08	04/19/17-	05/03/12	No
065074#	MORENO VALLEY	-	06/18/87	08/18/14	06/18/87	No
060751#	MURRIETA	-	04/15/80	08/28/08	06/09/93	No
060256#	NORCO	05/17/74	02/15/79	08/28/08	02/15/79	No
060629E	PALM DESERT	06/14/77	04/15/80	04/19/17	04/15/80	No
060257E	PALM SPRINGS	06/21/74	03/02/83	04/19/17	03/02/83	No
060258#	PERRIS	09/06/74	04/16/79	08/18/14	04/16/79	No
060259E	RANCHO MIRAGE	-	09/14/79	04/19/17	09/14/79	No
060245E	RIVERSIDE COUNTY	-	04/15/80	03/22/22	04/15/80	No
060260#	RIVERSIDE	07/19/74	01/06/83	08/28/08	01/06/83	No
065056E	SAN JACINTO	-	09/28/73	04/19/17	09/28/73	No
060742#	TEMECULA	-	09/02/93	08/28/08	08/28/91	No
060221#	WILDOMAR	-	08/28/08	08/28/08	01/20/11	No

(E) Indicates Entry in Emergency Program
(S) Indicates Suspended Community
NSFHA: No Special Flood Hazard Area

6.1 Community Rating System

The County of Riverside and all cities within the County participate in the National Flood Insurance Program (NFIP). Riverside County Ordinance NO. 458 Regulating Special Flood Hazard Areas and Implementing the National Flood Insurance Program was last updated on January 25, 2022.

Riverside County also participates in the Community Rating System (CRS). The rating system is a voluntary NFIP program that aims to reduce flood damages to insurable property, strengthen and support the insurance aspects of the NFIP, and encourage a comprehensive approach to floodplain management. In addition to the county, several cities participate in CRS including Lake Elsinore, Moreno Valley, Murrieta, and Palm Springs.

The most active in the Community Rating System within the County is Riverside County and the City of Palm Springs. Their high scores in the system allow residents within their communities to receive a 20 percent discount on their flood insurance premium which is the highest discount off of flood insurance (Class 6).

Table 58: Community Rating System Eligible Communities

Community Number	Community Name	CRS Entry Date	Current Effective Date	Current Class	% Discount for SFHA	Status
060245	Riverside County	10/01/10	04/01/22	6	20	C
060636	Lake Elsinore	10/01/09	05/01/14	8	10	C
065074	Moreno Valley	10/01/91	10/01/96	8	10	C
060751	Murrieta	10/01/97	05/01/18	9	5	C
060257	Palm Springs	10/01/92	05/01/11	6	20	C

Note: SFHA, Special Flood Hazard Areas

Source https://www.fema.gov/sites/default/files/documents/fema-crs-eligible-communities_apr-2022.pdf

6.2 Repetitive Loss Properties

Areas which have flooded in the past are highly likely to experience recurring flooding. The repetitive nature of flood damage is cause for concern. FEMA, in coordination with the state, identifies California's top Repetitive Loss (RL) Communities. Riverside County is not a top Repetitive Loss community. Riverside County unincorporated areas only have eleven identified repetitive loss properties. That is an increase of four properties since the 2012 plan. Two of the eleven repetitive loss properties have been mitigated and the Riverside County Flood Control District is investigating ways to mitigate the remaining nine properties so as to avoid future flooding incidents. Options being considered are both structural and non-structural mitigation measures.

Table 59: Riverside County Repetitive Loss Properties

City	Mitigated?	Insured?	Date of Loss	Date of Loss	Total Paid
LAKE ELSINORE	YES	NO	02/14/1980	01/05/1979	$91,618.83
LAKE ELSINORE	NO	NO	12/04/1982	03/15/1980	$21,052.64
LAKE ELSINORE	NO	NO	04/15/1983	08/11/1980	$ 6,436.09
HEMET	YES	NO	03/02/1983	09/06/1981	$ 2,684.06
RIPLEY	NO	NO	09/23/1983	07/23/1983	$ 6,602.15
CORONA	NO	NO	01/04/1995	12/04/1987	$ 70,282.69
THOUSAND PALMS	NO	NO	12/22/2010	10/17/2005	$ 26,331.18
THOUSAND PALMS	NO	YES	09/08/2014	02/25/2005	$ 44,272.25
THOUSAND PALMS	NO	YES	09/08/2014	12/22/2010	$ 29,896.05
THOUSAND PALMS	NO	YES	09/08/2014	12/22/2010	$ 33,345.35
THOUSAND PALMS	NO	YES	09/08/2014	01/22/2010	$ 119,638.09

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Section 7.0 – Capabilities Assessment

7.1 Regulatory Mitigation Table

Table 60: Regulatory Tools

Regulatory Tool	Yes/No	Comments
General Plan	Yes	General Plan updated 2021
Zoning Ordinance	Yes	Amended through Ordinance No. 348.4978 on January 25, 2022: Providing for Land Use Planning And Zoning Regulations and Related Functions of the County of Riverside effective 02/24/22
Subdivision Ordinance	Yes	Amended through Ordinance No. 460.154 on September 19, 2017: Subdivision Regulations
Site Plan Review Requirements	Yes	Adopted updates to General Plan on December 15, 2015, Building and Safety Department submission requirements
Growth Management Ordinance	Yes	Adopted updates to General Plan on December 15, 2015,
Floodplain Ordinance	Yes	Adopted updates to General Plan on December 15, 2015, Riverside County Ordinance No. 458: Regulating Flood Hazards and Implementing the National Flood Insurance Program, last amended 8/28/08
Other special purpose ordinance (storm water, water conservation, wildfire)	Yes	Adopted updates to General Plan on December 15, 2015, Riverside County Ordinance No. 754: Establishing Stormwater/Urban Runoff Management and Discharge Controls, Ordinance No. 859: The Water Efficient Landscaping Requirements, Ordinance No, 787: Adopting the 2016 California Fire Code as Amended 1/1/17.
Building Code	Yes	Riverside County Ordinance 457: Building Codes and Fees, California Building Code, 2022
Fire Department ISO rating	Yes	Rating: 4 (Under reevaluation, expected update in October 2017)

Erosion or sediment control program		Adopted updates to General Plan on December 15, 2015
Storm Water Management Program	Yes	Riverside County Ordinance No. 754: Establishing Stormwater/Urban Runoff Management and Discharge Controls, Riverside County Flood Control Storm Water Protection Program
Capital Improvements Plan	Yes	CIP Budget and proposals updated in November 2015
Economic Development Plan	Yes	Riverside County Economic Development Strategic Action Plan – 2013-2016, Riverside County Economic Development Strategy (CEDS) 2015/2016 Annual Update
Local Emergency Operations Plan	Yes	Riverside County Emergency Operations Plan updated in February 2006
Flood Insurance Study or other engineering study for streams	Yes	County of Riverside Environmental Impact Report No. 521, Section 4.11 March 2014, Riverside County Unincorporated Areas Flood Insurance Study, 2008
Master Drainage Plan	Yes	

7.2 Administrative/Technical Mitigation Table

Table 61: Administrative/Technical Mitigation Tools

Department/Position	Yes/No	Personnel/Resources
Agricultural Commissioner's Office	Yes	Agricultural Biologist, EOC Responders
Assessor's Office	Yes	Parcels information, Loss Estimates, Planners
Environmental Health	Yes	Program Chief, Hazmat and Environmental Specialist, EOC Responder's
Public Health	Yes	Nurses, Program Managers, EOC Responder's, Behavioral Health programs that provide resources and information for community members and mentally ill individuals.
Emergency Management Department	Yes	Division Chiefs, Program Coordinators, Emergency Services Coordinators, Administrative Services Personnel
Emergency Medical	Yes	EMS Specialist, Agency Chief, EOC Responder's
Animal Services	Yes	Chief Operations, Executive Management, Animal Control Officers, Administrative Personnel, EOC Responder's, Riverside Emergency Animal Rescue System (R.E.A.R.S.)
Riverside County Fire	Yes	Firefighters I/II, Engineers, Captains, Battalion Chiefs, Division Chiefs, Deputy Chiefs, County Fire Chief, Prevention Specialists, Forester's, Emergency Services Coordinators, Emergency Services program Supervisor, Deputy Director, Incident Management Teams, Administrative Services Personnel

Flood Control	Yes	Flood Control Specialist and Managers, Engineers, GIS Specialists, EOC Responders
Sheriff's Office	Yes	Sherriff's Emergency Response Team (SERT) members, EOC Responders
Roads	Yes	Engineers, EOC Responder's, Highway Operations Superintendent
Building and Safety Planning Dept.	Yes	Planners, Principal Building Inspectors, Engineers, EOC Responders
Geographic Information System	Yes	GIS Specialist, CIS Supervisors, GIS Analysts, EOC Responders
Information Technology	Yes	Chief Information Officer, IT Officers, EOC Responders, Communication, Field assets, IT Support
Air Quality Management District	Yes	Air Monitoring
Waste Management	Yes	Operations Supervisor, Hazardous Waste Supervisor, Specialist, Engineers
Disaster Corps	Yes	Trained Volunteers, Deployment Capabilities both in the Operational Area and Statewide.
Radio Amateur Civil Emergency Services (R.A.C.E.S.)	Yes	Radio Operators, EOC Responders

7.3 Fiscal Mitigation Capabilities

Table 62: Fiscal Mitigation Capabilities

Financial Resources	Accessible/Eligible to Use (Yes/No)	Comments
Community Development Block Grants	Yes	Must meet eligibility requirements
Capital improvements project funding	Yes	Funds set aside every fiscal year for each Board of Supervisor's district
Authority to levy taxes for specific purposes	Yes	With voter approval
Impact fees for new development	Yes	Planning, Fire, Building & Safety
Incur debt through general obligation bonds	Yes	With voter approval
Incur debt through special tax bonds	Yes	With voter approval
Pre-Hazard Mitigation Grants	Yes	
Post-Mitigation Grants	Yes	

7.4 Funding Opportunities

Table 63: Grant Funding Opportunities for Mitigation

Grant Name	Agency	Purpose	Contact
Resilience Grant **(BRIC)**	U.S. Department of Homeland Security, Federal Emergency Management Agency	To support states, local communities, tribes and territories as they undertake hazard mitigation projects, reducing the risks they face from disasters and natural hazards.	FEMA 500 C. Street, SW Washington, DC 20472 Phone: (202) 646-4621 www.fema.gov
Hazard Mitigation Grant Program	U.S. Department of Homeland Security, Federal Emergency Management Agency	To prevent future losses of lives property due to disasters; to implement State of local hazard mitigation plans; to enable mitigation measures to be implemented during immediate recovery from a disaster; and to provide funding for previously identified mitigation measures to benefit the disaster area.	FEMA 500 C Street S.W. Washington, DC 20472 Phone (202) 646-4621 www.fema.gov
Flood Mitigation Assistance (FMA)	U.S. Department of Homeland Security, Federal Emergency Management Agency	To help States and communities plan and carry out activities designed to reduce the risk of flood damage to structures insurable under the NFIP.	FEMA 500 C Street S.W. Washington, DC 20472 Phone (202) 646-4621 www.fema.gov

Emergency Management Performance Grants (EMPG)	U. S. Department of Homeland Security; Federal Emergency Management Agency	To encourage the development of comprehensive emergency management at State and local levels and to improve emergency management planning, preparedness, mitigation, response and recovery capabilities.	FEMA 500 C Street S.W. Washington, DC 20472 Phone (202) 646-4621 www.fema.gov
Community Development Grant Program (CDBG)	U.S. Department of Housing and Urban Development	To develop viable urban communities by providing decent housing and a suitable living environment. Principally for low-to-moderate income individuals.	HUD 451 7th Street, S. W. Washington, DC 20410-7000 Phone: (202) 708-3587 www.hud.gov
Public Assistance Program (PA)	U.S. Department of Homeland Security, Federal Emergency Management Agency	To provide supplemental assistance to States, local governments, and certain private nonprofit organizations to alleviate suffering/hardship resulting from major disasters or emergencies declared by the President. Under Section 406, Public Assistance funds may be used to mitigate the impact of future disasters.	FEMA 500 C Street S.W. Washington, DC 20472 Phone (202) 646-4621 www.fema.gov
Emergency Watershed Protection	U.S. Department of Agriculture, Natural Resource Conservation Service	To provide emergency technical/financial assistance to install or repair structures that reduce runoff and prevent soil erosion to safeguard life and property.	NRCS PO BOX 2890 Washington, DC 20013 Phone: (202) 720-3527 www.nrcs.usda.gov

Land and Water Conservation Fund Grants	U. S. Department of the Interior, National Park Service	To acquire and develop outdoor recreation areas and facilities for the general public, to meet current and future needs.	NPS PO Box 37217 Washington DC 20013-7127 Phone: (202) 565-1200 www.nps.gov
Disaster Mitigation and Technical Assistance Grants	U.S. Department of Commerce, Economic Development Administration	To help States and localities to develop and /or implement a variety of disaster mitigation strategies.	EDA Herbert C. Hoover Building Washington, DC 20230 Phone: (800) 345-1222 www.eda.gov
Watershed Surveys and Planning	U.S. Department of Agriculture, Natural Resource Conservation Service	To provide planning assistance to Federal, State, and local agencies for the development of coordination water and related land resources programs in watersheds and river basins	NRCS PO Box 2890 Washington, DC 20013 Phone: (202) 720-3527 www.nrcs.usda.gov
National Earthquake Hazards Reduction Program (NEHRP)	U.S. Department of Homeland Security, Federal Emergency Management Agency	To mitigate earthquake losses that can occur in many parts of the nation providing earth science data and assessments essential for warning of imminent damaging earthquakes, land-use planning, engineering design, and emergency preparedness decisions.	FEMA 500 C Street S.W. Washington, DC 20472 Phone (202) 646-4621 www.fema.gov

Assistance to Firefighters Grant	U. S. Department of Homeland Security, Federal Emergency Management Agency	Competitively awarded project grants to provide direct assistance, on a competitive basis, to fire departments for the purpose of protecting the health and safety of the public and firefighting personnel against fire and fire-related hazards.	FEMA 500 C Street S.W. Washington, DC 20472 Phone (202) 646-4621 www.fema.gov
Fire Management Assistance Grants	U. S. Department of Homeland Security, Federal Emergency Management Agency	To provide project grants and the provision of specialized services for the mitigation, management, and control of fires that would constitute a major disaster.	FEMA 500 C Street S.W. Washington, DC 20472 Phone (202) 646-4621 www.fema.gov
Engineering for Natural Hazards	National Science Foundation	Supports fundamental research that advances knowledge for understanding and mitigating the impact of natural hazards on constructed civil infrastructure.	National Science Foundation Phone: (703) 292-7024 https://www.nsf.gov

7.5 Mitigation Outreach and Partnerships

In addition to the capabilities and funding sources listed in sections 7.1 – 7.4, Riverside County provides training, exercises, workshops and volunteer management to non-profit organizations, faith-based organizations, businesses, and other local municipalities and programs to better accomplish mitigation.

Various communities as well as County of Riverside Emergency Management Department provides Community Emergency Response Team (CERT) training to the public and county employees. Following a major disaster, first responders who provide fire and medical assistance will not be able to immediately meet all of the demands for their services. The Community Emergency Response Team (CERT) Program provides for community and employee self-sufficiency in order to meet the general public's urgent life-saving and sustenance needs until emergency personnel arrive. The Community Emergency Response Team (CERT) Program educates people about disaster preparedness and trains them in basic response skills, such as fire safety, light search and rescue, and disaster medial operations. CERT members assist their fellow citizens/coworkers in their community or workplace following a disaster. CERT members take an active role in their community by preparing for a disaster, thus reducing their own impact risk.

There are various jurisdictions that support CERT Programs within the County, including Riverside County EMD, Beaumont, Corona, Indio, La Quinta, Lake Elsinore, Cathedral City, Moreno Valley, Murrieta, Palm Springs, Perris, Riverside, Temecula, San Jacinto, Menifee, Wildomar, Canyon Lake, Rancho Mirage, Desert Hot Springs, Palm Desert, Blythe and the town of Idyllwild.

In addition to the volunteer program, EMD coordinates the Radio Amateur Civil Emergency Service (RACES), a group of licensed radio amateurs who operate during declared emergencies. Once activated by local, county or State jurisdictions, RACES may assist any agency to provide emergency communications support as requested by the County of Riverside. RACES members trains volunteers how to operate amateur radios to mitigate communication failures. RACES members conduct radio tests to ensure critical facilities, including hospitals, maintain redundant communications in case of a failure. The County manages the Medical Reserve Corps (MRC) which coordinates the skills of practicing and retired physicians, nurses and other health professionals as well as other citizens interested in health issues. MRC focuses on these specific personnel who are eager to volunteer in order to address their community's ongoing public health needs and to help their community during large-scale emergency situations. MRC volunteers may also serve a vital role by assisting their communities with ongoing public

health needs through public awareness of disease outbreaks, immunizations, screenings, health and nutrition education and volunteering in community health centers and local hospitals.

EMD joins forces with the Riverside University Health System – Public Health (RUHS-PH) by providing a flu clinic for community members to receive their flu shot free of charge. This clinic provides a means for the County to mitigate pandemic flu as a hazard by vaccinating more people, reducing the impact or risk of a pandemic flu outbreak.

EMD coordinates with RUHS-PH, the Riverside Emergency Medical Services Agency (REMSA), hospitals, local health care facilities, and other disciplines to develop the annual Statewide Medical Health Exercise (SWMHE). Each year the state selects a scenario focusing on testing objectives designed to improve understanding of response procedures, building collaborative relationships, and identify areas of improvement. The SWMHE plays a critical role in the on-going support to Public Health and Medical preparedness and mitigation efforts by local, regional, and State agencies. Participation in the exercise allows hospitals, ambulance providers, law enforcement, and fire to test and validate policies, plans, procedures, training, equipment, and agreements. In addition, it helps clarify and train personnel in roles and responsibilities, improve interagency coordination, identify gaps in resources and response plans, strengthen relationships among all participating agencies, meet various requirements from regulatory and accreditation agencies.

EMD provides a Healthcare Operations Decontamination (HCO-D) course to train hospital staff and county first responders to improve their abilities, mitigating hazmat incidents. This course allows healthcare workers to improve their response capabilities, reducing the impact of the hazmat incident on patients, community members and their facilities.

Workshops and trainings on plan developing are offered by EMD staff to assist jurisdictions create plans that can address mitigation actions for affecting hazards. For example, Point of Dispensing (POD) trainings and workshops are provided to cities and other disciplines in Riverside County to allow them to be prepared and diminish the effect of a disease outbreak. With the help of EMD, the jurisdictions can create an approved plan that will list some of the actions they have or would like to have in place to prevent their community members from being affected by emerging / re-emergency infectious diseases.

EMD administers the Hospital Preparedness Program (HPP) grant. The grant provides funds to purchase emergency equipment, ensuring hospitals, clinics, and long-term facilities throughout the county are equipped with the proper supplies to help prevent and

mitigate the effects of disasters. The grant also funds training for healthcare workers to increase their skills and abilities in mitigating hazards.

Citizen Corps Councils have additionally been established in the Temecula, Lake Elsinore, Wildomar and Jurupa Valley. These provide a cadre of credentialed volunteers for the jurisdiction to utilize during a disaster response.

Riverside County has an established General Plan that was updated and adopted in December 2021. According to the County's Transportation & Land Management Agency (TLMA), the plan is designed to ensure that the County retains its core identity by guiding future growth. This growth should respect the diversity of the region and configure development in relation to the land it occupies and ensures that its various parts relate. It is the County's over-arching policy to document for land use matters. It also determines housing needs, need for roads, and locations for commercial and industrial use will be better suited throughout the County for the next 20 years and beyond. The overall implementation process of the MJLHMP can be supported by the General Plan through the incorporation of mitigation actions, goals, or polices.

The Zoning Ordinance for Riverside County administers the County's General Plan. TLMA states that while the General Plan identifies land use designations in the long-term, the Zoning Ordinance identifies specific and immediate uses for land. The General Plan's successful implementation can only occur if the County of Riverside Zoning Ordinance is updated and consistent with the plan as state law mandates General Plan-Zoning consistency and is able to implement the long-term intent of the Plan. Implementation of mitigation actions that include improving structures can be accomplished by adopting them into this Ordinance.

The Subdivision Ordinance for Riverside County is mandated by State law to conduct a local approval of land subdivision via the Subdivision Map Act. TLMA implies that local review of proposed subdivisions and parcel maps includes assessment of consistency with, and implementation of, the County's General Plan. This ordinance can have the ability to support the implementation of mitigation objectives and policies stated in the MJLHMP.

7.5.1 Opportunities for Enhancement to Capabilities

The 2021 MJLHMP update provided the County and the participating jurisdictions an opportunity to review and update the capabilities currently in place to mitigate hazards. This also provided an opportunity to identify where capabilities could be improved or enhanced. Specific opportunities include:

Safety Plan Update: Riverside County should pursue AB2104 compliance. AB 2140 was passed in 2006, this legislation allows California counties and cities to adopt their current, FEMA-approved local hazard mitigation plans (LHMPs) into the Safety Element of their General Plans. This adoption makes the county eligible to be considered for part or all of its local-share costs on eligible Public Assistance funding to be provided by the state through the California Disaster Assistance Act (CDAA). While Riverside County does identify the MJLHMP within the General Plan Safety Element, the county should incorporate the 2023 MJLHMP to become eligible for CDAA funding in the event of a disaster; this process also ensures further consistency of each plan and provides an opportunity to reference the MJLHMP and enhance the capabilities for implementation of goals and objectives of each plan. A comprehensive update of the Safety Element to include hazards and mitigation strategies addressed in the MJLHMP update will align and integrate the general plan.

Safety Plan Outreach: Riverside County sees opportunity to increase OA emergency manager awareness of the General Plan Safety Element to enhance an understanding of potential impacts from hazards and further develop applicable plans to incorporate all efforts to mitigate threats within the County. Specific actions to improve this include:

- Expanding knowledge of the MJLHMP and the General Plan Safety Element to the OA jurisdictional Emergency Managers and County departments who have responsibilities tied to public safety and community development.
- Further developing relationships with public safety and community development representatives to create an improved multijurisdictional approach to hazard mitigation.
- Hold additional working sessions with the County Planning Department, the MLJHMP Steering Committee and the Emergency Management Department during updates to the General Planning Safety Element to ensure the capabilities and hazards are addressed effectively.

Training: Provide training opportunities to help inform County staff and OA jurisdictional representatives on how best to integrate hazard information and mitigation projects into their programs. Riverside County has identified an Integrated Preparedness Plan which will incorporates multiple jurisdictions. There are also several financial resources that the County could leverage in the future for funding mitigation training efforts. County EMD staff can attend additional workshops and training regarding grant funding application process and how to develop successful grant applications under applicable hazard mitigation grants. Understanding the types of projects that can be funded, and the components of a successful application will enhance the chances of a successful grant award.

Hazard Assessment and Project Development Tool Training and Technical Assistance: Providing technical assistance and training for hazard assessment tools and mitigation project development tools such as HAZUS and a Business Cost Analysis (BCA) will allow the County and OA Jurisdictions to improve hazard mitigation overall. County subject matter experts are available to discuss these topics so the OA can improve on these efforts by expanding the number of trained staff within the County.

Hazard Mitigation Specialist: The County could appoint or assign someone in EMD to oversee hazard mitigation grant opportunities. This could be a follow-up goal to the Cal OES grant training. This specialist can notify the County departments and OA jurisdictions of upcoming grant cycles, and support tracking and completing the Notice of Intent (NOI) applications, grant applications, and final grant management reporting requirements. Related financial opportunities for enhancement should include applying for HMA grants, such as BRIC and HMGP funding as it becomes available. The Hazard Mitigation Specialist should also focus on funding mitigation actions that mitigate critical infrastructure, provide protection for those most vulnerable in the community, address climate change, public health hazards, extreme heat, flooding, other climate-related hazards and needed and related climate adaptation strategies.

Improvement Outreach to disadvantaged communities: The county recently hired additional Emergency Services Coordinators (ESC) with specific tasks of improving community outreach. These ESCs can improve Hazard Mitigation Awareness in targeted communities of the County that are identified as vulnerable or disadvantaged in the Healthy Places Index (HPI) created by the Public Health Alliance of Southern California. These communities may necessitate more targeted outreach and engagement.

Efforts to improve this could include:

- Establishment of focus groups composed for community members identified in the HPI to advise on mitigation efforts and provide feedback on future plan revisions.
- Additional integration with Community Based Organizations and Faith Based programs that serve those HPI disadvantaged communities to create hazard mitigation awareness.
- Participation at additional community events within disadvantaged communities to educate the public and solicit public feedback on projects/future plan revisions.

Increased public enrollment of AlertRivCo: Alert RivCo allows emergency managers and public safety-first responders to rapidly alert and warn the public in the event of emergencies. Increasing the public's awareness in the Alert RivCo through the use of Outreach ESC's and improving the enrollment process for this system will enhance the Counties ability to reach a larger population in the event of an emergency.

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Section 8.0 – Goals and Strategies

8.1 Goals and Objectives

Goal 1: Reduce Loss of Life and Injuries

Objective 1.1: Provide timely notification and direction to the public in preparation for imminent and potential hazards.

Objective 1.2: Protect public health and safety through mitigation, preparing for, responding to, and recovering from the effects of natural, technological or human-caused disasters.

Objective 1.3: Reduce hazard impacts and protect life, property and the environment from damages.

Objective 1.4: Improve understanding of the type, location and effects of hazards and vulnerabilities, as well as measures needed to protect life.

Goal 2: Reduce Hazard Related Property Losses

Objective 2.1: Encourage new development to occur in locations that avoid or minimize exposure to hazards. Continue to utilize County Ordinance 458, in concerns to NFIP and flood hazard areas and County Ordinance 460, in concerns to land use.

Objective 2.2: Reduce hazard related property losses by enforcing strong building codes.

Objective 2.3: Reduce repetitive losses for fire, flood, and earthquakes by encouraging protective measures and by anticipating future events.

Objective 2.4: Reduce hazard impacts to critical facilities, utilities and services through the implementation of low-cost mitigation strategies.

Objective 2.5: Continue to strengthen land use regulations in high hazard areas.

Goal 3: Protect the Environment

Objective 3.1: Mitigate the impact of recurring drought conditions that impact both ground water supply and the agricultural industry.

Objective 3.2: Reduce hazards that adversely impact habitats, especially in regions with endangered species.

Goal 4: Maintain Coordination of Disaster Planning and Integrated Public Policy

Objective 4.1: Incorporate changes within Cal OES and FEMA that may affect public policy and planning.

Objective 4.2: Incorporate mitigation related activities into other disaster planning mechanisms, such as the Riverside County General Plan and Capital Improvement Plan.

Goal 5: Improve Community and Agency Awareness

Objective 5.1: Increase public threat awareness in concerns to the nature and extent of hazards they may be exposed to and where they can occur.

Objective 5.2: Improve mitigation and hazard related outreach to businesses, county departments, and stakeholders to increase their understanding of the threats within the county and actions they can take to reduce those hazard impacts.

8.2 Prioritizing Strategies

For the 2023 MJLHMP, the County assessed each strategy based on the goals and objectives in the MJLHMP and the General Plan. The process used by the County to prioritize goals and their respective objectives consisted of an evaluation of the hazards and their threat from the 2023 LHMP reviewing any events that occurred 2017 to 2023 and evaluating these against potential impacts. The participating Cities and Special Districts have identified their mitigation strategies in their stand-alone Annexes that are specific to their area of authority or jurisdiction.

8.3 Future and Current Mitigation Strategies

The Riverside County General Plan, adopted in December 2021, includes the following policies and recommendations for new construction and proposals in Safety Element 4:

Earthquake Hazards:

S 2.1 * Minimize fault rupture hazards through enforcement of Alquist-Priolo Earthquake Fault Zoning Act provisions and the following: (AI 80, 91, 152).

a) Require geologic studies or analyses for critical structures, lifelines, high-occupancy, schools, and high-risk structures, within 0.5 miles of all Quaternary to historic faults shown on the Earthquake Fault Studies Zones map. The County geologist shall review and make recommendations based on the results to reduce the potential risk. County of Riverside General Plan S-10 September 28, 2021

b) Request geologic trenching studies within all designated Earthquake Fault Studies Zones, unless adequate evidence, as determined by the Riverside County Geologist, is accepted. The County of Riverside may request geologic trenching of non-zoned faults for especially critical or vulnerable structures or lifelines.

c) Require that infrastructure systems, such as energy, communications, and transportation infrastructure be designed to resist, without failure to the extent feasible, their crossing of a fault, should fault rupture occur.

d) Support efforts by the California Department of Conservation, California Geological Survey, to develop geologic and engineering solutions in areas of ground deformation due to faulting and seismic activity, in those areas where a fault cannot be reliably located.

e) Encourage and support efforts by the geologic research community to define better the locations and risks of Riverside County faults. Such efforts could include data sharing and database development with regional entities, other local governments, private organizations, utility agencies or companies, and local universities.

Flood Hazards:

S 3.1 * All residential, commercial, and industrial structures should be flood-proofed, to the maximum extent possible and as required by law, from the mapped 100-year storm flow, or to an appropriate level determined by site-specific hydrological studies for areas not mapped by the Federal Emergency Management Agency. This may require that the finished floor elevation be constructed at such a height as to meet this requirement. Nonresidential (commercial or industrial) structures may be allowed with a “flood-proofed” finished floor below the Base Flood Elevation (i.e., 100- year flood surface) to the extent permitted by state, federal, and local regulations. New critical facilities should be constructed above-grade to the satisfaction of the Building Official, based on federal, state, or other reliable hydrologic studies. Residential commercial, and industrial structures shall meet these standards as a condition of approval. (AI 25, 59, 60, 88)

S 3.2 * Agricultural, recreational, or other low-intensity uses may be allowable within a 100-year floodplain if flood control and groundwater recharge functions are maintained. (AI 25, 59, 60)

S 3.3 * Prohibit alteration of floodways and channelization unless alternative methods of flood control are not technically feasible or alternative methods are used to the maximum extent practicable. The intent is to balance floodway protection with prudent land use solutions, recreational needs, and habitat requirements, and as applicable to provide incentives for natural watercourse preservation. (AI 25, 59, 60) a) Prohibit the construction, location, or substantial improvement of structures in areas designated as floodways, except upon approval of a plan which provides that the proposed development will not result in any significant increase in flood levels during the occurrence of a 100-year flood discharge. b) Prohibit the filling or grading of land for nonagricultural purposes and for non-authorized flood control purposes in areas designated as floodways, except upon approval of a plan which provides that the proposed development will not result in any significant increase in flood levels during the occurrence of a 100-year flood discharge. County of Riverside General Plan S-14 September 28, 2021

S 3.4 * Prohibit substantial modification to watercourses, unless the modification does not adversely affect adjacent wetlands or riparian habitat or become detrimental to adjacent property as a result of increased erosion, sedimentation, or water velocity. Substantial modifications to watercourses shall be done in the least environmentally damaging manner practicable and shall restore natural conditions to the greatest extent possible, to maintain adequate wildlife corridors and linkages and maximize groundwater recharge. (AI 25, 59, 60, 61)

S 3.5 * Development within the floodway fringe should only be allowed if the proposed structures can be adequately flood-proofed and will not contribute to property damage or risks to public safety, as required by law. Such developments shall be required to be capable of withstanding flooding and minimize the use of fill. Compatible uses shall not, however, obstruct flows or adversely affect upstream or downstream properties with increased velocities, erosion backwater effects, or concentrations of flows. (AI 25, 59, 60, 61)

S 3.6 * All projects in unincorporated Riverside County should address and mitigate where applicable, adverse impacts to the carrying capacity of local and regional storm drain systems.

S 3.7 Collaborate with neighboring jurisdictions to mitigate the impacts of new development in unincorporated Riverside County that could increase runoff onto parcels downstream in a neighboring jurisdiction and encourage neighboring jurisdictions to require development occurring adjacent to the county to consider the impact of flooding and flood-control measures on properties within unincorporated Riverside County. (AI 62)

S 3.8 * Update stormwater infrastructure design requirements as needed to maintain consistency with federal, state, and local regulatory requirements. (AI 25)

S 3.9 * Ensure that new development projects and retrofits to existing large-scale projects incorporate design strategies and features to reduce the area of impervious surfaces. (AI 4, 25, 100, 101, 156)

S 3.10 Collaborate with the Rancho California Municipal Water District, Eastern Municipal Water District, and other dam owners to maintain all dams in Riverside County to a high degree of structural stability.

S 3.11 Consider identifying areas of poor drainage and installing new or upgrade existing drainage systems to accommodate drainage needs. Use natural infrastructure to the extent possible. (AI 148)

Fire Hazards:

S 4.1 * All development and construction within Fire Hazard Severity Zones shall be reviewed by the Riverside County Fire Department and Building and Safety Department for consistency with the following requirements before the issuance of any building permits: (AI 25, 81.1, 81.2, 104.1) a) All proposed development and construction shall meet minimum state, county, and local standards and other legal requirements for fire safety, as defined in the Riverside County Building or Fire Codes, or by County zoning, or as dictated by the Building Official or the Transportation Land Management Agency, based on building type, design, occupancy, and use. b) In addition to the standards and guidelines of the California Building Code, California Fire Code, the Riverside County Code of Ordinances, Title 14 of the California Code of Regulations, and other appropriate fire safety provisions, developments shall incorporate additional standards for high-risk, high-occupancy, and dependent facilities where appropriate under the Riverside County Fire Code (Ordinance No. 787) Ordinance. These shall include assurance that structural and nonstructural architectural elements of the building will not impede

emergency egress for fire safety staffing/personnel, equipment, and apparatus; nor hinder evacuation from fire, including potential blockage of stairways or fire doors. c) Proposed development and construction in Fire Hazard Severity Zones shall provide secondary public access, in accordance with Riverside County ordinances, where required. There shall be multiple points of ingress and egress that allow for emergency response vehicle access. Points of access shall also include visible street addresses and signs and sufficient water supplies, infrastructure for structural fire suppression, and other applicable local and state requirements. d) Proposed development and construction in Fire Hazard Severity Zones shall use single loaded roads to enhance fuel modification areas, unless otherwise determined by the Riverside County Fire Chief. e) Proposed development and construction in Fire Hazard Severity Zones shall provide a defensible space or fuel modification zones to be located, designed, constructed, and maintained to provide adequate defensibility from wildfires. f) Prior to the approval of all parcel maps and tentative maps, the County shall require, as a condition of approval and as feasible and appropriate, the developer meet or exceed the State Responsibility Area Fire Safe Regulations and the Fire Hazard Reduction Around Buildings and Structures Regulations, particularly those regarding road standards for ingress, egress, and fire equipment access (see Gov. Code, Section 66474.02.) g) Proposed development and construction of more than four residential units or more than 10,000 square feet of nonresidential space located in Very High Fire Hazard Severity Zones, or other appropriate zones as determined by the Riverside County Fire Department, shall submit and implement a fire protection plan as feasible and appropriate. This plan shall include provisions for roadways and access, firefighting infrastructure, signage, vegetation management, construction materials, and evacuations. County of Riverside General Plan S-18 September 28, 2021

S 4.2 Require continued long-term operation and maintenance of fuel breaks, brush management, controlled burning, revegetation, and fire roads by Riverside County and private landowners. (AI 25)

S 4.3 Monitor fire-prevention measures (e.g., fuel reduction) through a site-specific fire-prevention plan to reduce long-term fire risks in Very High Fire Hazard Severity Zones. (AI 25, 88)

S 4.4 * Discourage development and activities in areas with limited water and access roads, unless adequate measures are implemented. (AI 60)

S 4.5 * Require proposed development in High or Very High Fire Hazard Severity Zones be located where fire and emergency services are available or will be constructed as part of the proposed development activities, to the extent such locations are available. These services should meet the minimum response times as established by the Riverside County Fire Department. (AI 60, 61)

S 4.6 * Request that conceptual landscaping plans for development in Fire Hazard Severity Zones be reviewed by TLMA and Fire Department prior to the issuance of development permits. The conceptual landscaping plan of the proposed development should, at a minimum, include: (AI 25) a) Plant palette suitable for high fire hazard areas to reduce the risk of fire hazards. b) Retention of existing natural vegetation to the maximum extent feasible. c) Removal of on-site combustible plants.

S 4.7 * Site design for development in Fire Hazard Severity Zones should be required to account for topographical conditions and reduce the increased risk for sites located near ridgelines, plateau escarpments, saddles, hillsides, peaks, or other areas where the terrain or topography affect its susceptibility to wildfires by: (AI 60, 81.2, 91) a) Providing fuel modification zones with removal of combustible vegetation while minimizing visual impacts and limiting soil erosion. b) Replacing combustible vegetation with fire resistant vegetation to stabilize slopes. c) Submitting topographic map with site-specific slope analysis. d) Submitting erosion and sedimentation control plans. e) Providing a setback from the edge of the fuel modification zones as deemed appropriate by the Fire Department. f) Minimizing disturbance of 25 percent or greater natural slopes. g) Or enacting other efforts as appropriate to provide comparable protection.

S 4.8 * Locate new critical public facilities outside of High or Very High Fire Hazard Severity Zones or other areas facing elevated risk of wildfire events. Critical facilities include emergency shelters, emergency command and communication facilities, and hospital and healthcare centers. If no feasible alternative site exists, ensure that these facilities incorporate all necessary protections to allow them to continue to serve community needs during and after disaster events. (AI 25, 60) County of Riverside General Plan September 28, 2021, S-19

S 4.9 * Site all new public facilities in areas outside of identified fire hazard severity zones and wildland urban interface or fire threat areas, as feasible. (AI 60)

S 4.10 * Establish neighborhood and building design standards that minimize fire hazards in high fire hazard severity zones, as feasible.

S 4.11 Collaborate with local governments to establish fire fuel management practices in local and regional parks and open spaces., as feasible

S 4.12 Identify existing public and private roadways in fire hazard areas not in compliance with contemporary fire-safe standards, including road standards, vegetation clearance, and other requirements of Sections 1273 and 1274 of the California Code of Regulations to the extent resources are available. Work at retrofitting County-owned roadways as needed to meet current standards and require private property owners to do the same, to the extent feasible and given the absence of other site constraints. (AI 25, 81.1, 88, 101, 148, 156)

S 4.13 Use ongoing brush clearance fire inspections to educate homeowners on fire prevention tips by implementing annual countywide weed abatement program. (AI 25, 96, 97)

S 4.14 Coordinate with local fire agencies to develop high-visibility fire prevention programs, including those offering voluntary home inspections and promoting awareness of home fire prevention measures. (AI 96, 97, 98) General and Long-Range Fire Safety Planning

S 4.15 * Seek to conduct and implement long-range fire safety planning, including stringent building, fire, subdivision, and municipal code standards, improved infrastructure, and improved mutual aid agreements with the private and public sector. (AI 88, 93)

S 4.16 Continue to work cooperatively with the California Department of Forestry and Fire Protection and Tribal government fire departments to strengthen fire-fighting capabilities and successfully respond to multiple fires. (AI 4, 88, 150)

S 4.17 Consider developing a program to use existing reservoirs, tanks, and water wells in the county for emergency fire suppression water sources. County of Riverside General Plan S-20 September 28, 2021

S 4.18 When updating the Safety Element, the Multi-Jurisdictional Local Hazard Mitigation Plan, or at other times as appropriate, review inter-jurisdictional fire response agreements and improve firefighting resources as recommended in the Riverside County Fire Department Fire Protection Plan and Emergency Medical

Services (EMS) Strategic Master Plan. Ensure that fire response agreements and firefighting resources are able to meet current and future needs, including increased demand from new development and changing fire regimes. Ensure that: (AI 4, AI 88, 104, 104.1): • Fire reporting and response times do not exceed the goals listed in the Riverside County Fire Department Fire Protection Plan and EMS Strategic Master Plan identified for each of the development densities described in these plans. • Fire flow requirements (e.g., water for fire protection) are consistent with Riverside County Ordinance 787, including requirements for fire hydrant size and outlets, sprinklers, and other water supply needs. • The planned deployment and height of aerial ladders and other specialized equipment and apparatus are sufficient for future development types. • County firefighting agencies have access to water supplies that are regular, reliable, and sufficient to meet long-term needs, including accounting for changes in water supply availability.

S 4.19 Continue to use the Riverside County Fire Department Fire Protection Plan and Emergency Medical Services (EMS) Strategic Master Plan as the foundational document to implement the Safety Element's goals and objectives. (AI 59, 60, 104.1, 104.4)

S 4.20 * Encourage property owners to use clustering and Transfer of Development Rights (TDR) program when developing lands within Fire Hazard Severity Zones, as appropriate, by: (AI 59, 61) • Exploring restricting the development of a property through placement of conservation easement. • Considering acquiring the conservation easements similar to that of the Multiple Species Habitat Conservation Plan (MSHCP).

S 4.21 Identify, map, and update Fire Hazard Severity Zone maps on an as-needed continual basis. (AI 25, 91)

S 4.22 Ensure that the Riverside County Fire Department has appropriate municipal staffing and Office of the Fire Marshall staff to address development pressure and adequately respond to expected future fire protection needs. (AI 59)

S 4.23 * Implement a coordination program with fire protection and emergency service providers to reassess fire hazards after wildfire events and adjust fire prevention and suppression needs, including needs for new or revised development and reconstruction standards. (AI 104.6)

S 4.24 Implement a regional coordination program to increase support for coordination among fire protection and emergency service providers. County of Riverside General Plan September 28, 2021, S-21

S 4.25 Implement a long-term fire protection training and education program for government agencies and communities. (AI 93)

S 4.26 Require as feasible automatic natural gas shutoff earthquake sensors in high-occupancy industrial and commercial facilities and encourage these sensors for all residences.

Wind Hazards:

S 3.11 Require studies that address the potential of this hazard on proposed development within "High" and "Very High" wind erosion hazard zones as shown on Figure S-8, Wind Erosion Susceptibility Map.

S 3.12 Include a disclosure about wind erosion susceptibility on property title for those properties located within "High" and "Very High" wind erosion hazard zones as shown on Figure S-8, Wind Erosion Susceptibility Map.

S 3.13 Require buildings to be designed to resist wind loads.

S 3.14 Educate builders about the wind environment and encourage them to design projects accordingly

8.4 On-going Mitigation Strategies

8.4.1 Earthquake Strategies

Retrofitting Against Earthquake:

Earthquake retrofitting measures include removing masonry overhangs that will fall onto the street during shaking. Bracing the building provides structural stability but can be very expensive. Less expensive approaches may be more cost effective for an area like that faces a relatively low earthquake threat. These include tying down appliances, water heaters, bookcases and fragile furniture so they won't fall over during a quake and installing flexible utility connections that will not break when shaken.

8.4.2 Flood Strategies

Generally, natural, human-caused, and technological hazards impact people and improved property the most. Vacant space may incur damages as well, but the threat to life and property is greatly decreased. In some cases, properties can be modified so the hazard does not reach the damage-prone improvements. Flooding is the one of those hazards that can be kept away from a structure. There are five common methods to do this:

- Retrofit the building
- Create a barrier between the building and the source of flooding
- Move the building out of the flood-prone area
- Elevate the building above the flood level
- Demolish the building

Retrofitting Against Flooding:

Flood retrofitting measures include dry flood proofing where all areas below the flood protection level are made watertight. Walls are coated with waterproofing compounds or plastic sheeting. Openings (doors, windows, and vents) are closed, either permanently, with removable shields, or with sandbags. Dry flood proofing of new and existing nonresidential buildings in the regulatory floodplain is permitted under State, FEMA and local regulations. Dry flood proofing of existing residential buildings in the floodplain is also permitted as long as the building is not substantially damaged or being substantially improved. Owners of buildings located outside the regulatory floodplain can always use dry flood proofing techniques.

The alternative to dry flood proofing is wet flood proofing: water is let in and everything that could be damaged by a flood is removed or elevated above the flood level. Structural components below the flood level are replaced with materials that are not subject to water damage. This is the approach used for the first floor of the elevated homes. For example, concrete block walls are used instead of wooden studs and gypsum wallboard. The furnace, water heater, and laundry facilities are permanently relocated to a higher floor. Where the flooding is not deep, these appliances can be raised on blocks or platforms.

Barriers:

An effective way of keeping flood water away from a structure is to construct a barrier. This barrier can be built of dirt or soil, berms, concrete, steel, a floodwall or through a simple sand-bagging operation. In areas subject to flash flooding, deep waters, or other high hazard, relocation and evacuation is often the only safe and responsible approach.

Careful design is needed so as not to create flooding or drainage problems on neighboring properties. Depending on how porous the ground is, if floodwaters will stay up for more than an hour or two, the design needs to account for leaks, seepage of water underneath, and rainwater that falls inside the perimeter. This is usually done with a sump and/or drain to collect the internal groundwater and surface water and a pump and pipe to pump the internal drainage over the barrier.

Barriers can only be built so high. They can be overtopped by higher-than-expected flood waters. Barriers made of earth are susceptible to erosion from rain and floodwaters if not properly sloped, covered with grass, and maintained. A berm can settle over time, lowering its protection level. A floodwall can crack, weaken, and lose its watertight seal. Therefore, barriers need careful design and maintenance (and insurance on the building, in case of failure).

Relocation:

Moving a structure to higher ground is the surest and safest way to protect it from flooding. While almost any building can be moved, the cost goes up for heavier structures, such as those with exterior brick and stone walls, and for large or irregularly shaped buildings. However, experienced building movers can handle most job.

In areas subject to flash flooding, deep waters, or other high hazard, relocation is often the only safe approach. Relocation is also preferred for large lots that include buildable areas outside the floodplain or where the owner has a new flood-free lot (or portion of the existing lot) available.

Elevation:

Raising a building above the flood level can be almost as effective as moving it out of the floodplain. Water flows under the building, causing little or no damage to the structure or its contents.

Raising a building above the flood level is cheaper than moving it and can be less disruptive to a neighborhood. Elevation has proven to be an acceptable and reasonable means of complying with floodplain regulations that require new, substantially improved, and substantially damaged buildings to be elevated above the base flood elevation.

One concern with elevation is that it may expose the structure to greater impacts from other hazards. If not braced and anchored properly, an elevated building may have less resistance to the shaking of an earthquake and the pressures of high winds.

Demolition:

Some buildings, especially heavily damaged or repetitively flooded ones, are not worth the expense to protect them from future damage. It is cheaper to demolish them and either replace them with new, flood protected structures ("pilot reconstruction"), or relocate the occupants to a safer site. Demolition is also appropriate for buildings that are difficult to move—such as larger, slab foundation, or masonry structures—and for dilapidated structures that are not worth protecting. Generally, demolition projects are undertaken by a government agency, so the cost is not borne by the property owner, and the land is converted to public open space use, such as a park.

One potential problem is sometimes an acquisition and demolition project is a "checkerboard" pattern in which nonadjacent properties are acquired. This can occur when some owners, especially those who have and prefer a waterfront location, prove reluctant to leave. Creating such an acquisition pattern in a community simply adds to the maintenance costs that taxpayers must support.

8.4.3 Fire Strategies

Wildfire:

One way to lessen the threat of a fire is by keeping fuel away from buildings. This is called the concept of "defensible space." Defensible space involves providing sufficient space between the structure and flammable vegetation.

Within this space, the fire service has room to battle the wildfire before it reaches the structure or to stop a structural fire before it ignites the wildland vegetation. With sufficient defensible space, the structure even has a chance to survive on its own when fire service personnel and equipment are not available, as often happens during a significant wildfire.

The 2003 Fire Siege was perhaps the worst fire disaster in Southern California history. The firestorm that raged through the region consisted of 14 major fires that quickly exhausted resources and lasted for multiple weeks. The lessons from that fire season served as a warning for everyone living in areas prone to fire danger and resulted in stronger fire prevention and mitigation efforts.

In January 2005 a new state law became effective that extended the defensible space clearance around homes and structures from 30 feet to 100 feet. Proper clearance to 100 feet dramatically increases the chance of your house surviving a wildfire. This defensible space also provides for firefighter safety when protecting homes during a wildland fire. Riverside County Ordinance No. 859 Water Efficient Landscape Requirements mentions the use of defensible space and avoiding the use of fire-prone plant materials. Ordinance

No. 695 Abatement of Hazardous Vegetation effective July 16, 2009, states “a one hundred (100) foot wide strip of land around structure(s) located on an adjacent improved parcel.”

Riverside County has a Fire Protection contract with Cal Fire and utilizes many of their materials to educate individuals on why they should maintain a proper defensible space.

Public Fire Education:

Family Escape Plan:

In a County as fire prone as Riverside, you can never be too fire safe. Throughout Southern California, wildfire danger is a year-around threat. The goal is to make each and every home more fire safe. Residents are asked to make sure they have a fire escape plan, and that they practice what to do in an emergency.

Smoke Alarms:

Over ninety-three percent of all homes in the United States have at least one smoke alarm. The bad news is that one third of them are not working. The County encourages residents to make sure their smoke alarms are operating correctly by testing them regularly.

8.4.4 All Hazard Strategies

Facility Audits:

Audit recommendations should provide information that can identify measures for protecting the property from hazards. Property protection measures and approaches can include the following:

- Modify the site to keep the hazard from reaching the building
- Modify the building so it can withstand the impacts of the hazard
- Insure the property owner receives the opportunity for financial relief after the damage has occurred, this is usually received under the owner’s insurance policies or technical and financial assistance can be provided by a government agency
- Burying utility lines is a retrofitting measure that addresses earthquakes, winds from tornadoes, thunderstorms, and the ice that accompanies winter storms.
- Installing or incorporating backup power supplies minimizes the effects of power losses caused by downed lines.
- Roofs can be replaced with materials less susceptible to damage by hazards, such as modified asphalt or formed steel shingles and other fireproof materials

- Wildfire mitigation in residential properties can include installing spark arrestors on chimneys.
- Winter storm retrofitting measures include improving insulation on older buildings, relocating water lines from outside walls to interior spaces, and insulating water lines in crawlspaces and under elevated buildings.
- Windows can be sealed or covered with an extra layer of glass (storm windows) or plastic sheeting.

8.5 Mitigation Actions

The Agency Inventory Document and Mitigation Strategies and Actions were used by the County and each participating city and districts to review the possible mitigation actions that would be appropriate for each jurisdiction. This is based on how the Riverside County planning area can reduce the vulnerability of people, property, infrastructure, natural, and cultural resources to future disaster losses. Only those actions where the County is the lead jurisdiction are detailed further in Section 4.3. Actions specific to other participating jurisdictions are detailed in the jurisdictional annexes.

It is important to note that Riverside County and the participating jurisdictions have numerous existing, detailed action descriptions, which include benefit-cost estimates, in other planning documents, such as the General Plan, community wildfire protection plans and capital improvement budgets and reports. These actions are part of this plan, and the details, to avoid duplication, should be referenced in their original source annex / LHMP. The Riverside County planning area also realizes that new needs and priorities may arise resulting from a disaster or other circumstances and reserves the right to support new actions, as necessary conforming with the overall goals of this plan.

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Section 9.0 Plan Implementation and Maintenance Process

Implementation and maintenance of the plan is critical to the overall success of hazard mitigation planning. This section provides an overview of the overall strategy for plan implementation and maintenance. It also outlines the method and proposed schedule for monitoring, updating, and evaluating the plan. The chapter will discusses incorporating the plan into existing planning mechanisms and how to address continued public involvement.

9.1 Implementation

The Riverside County Operational Area Multi-Jurisdiction Local Hazard Mitigation Plan is a partnership between the jurisdictions involved. Implementation prioritization is determined during the planning process and after taking funding into consideration. Economic constraints make low or no-cost actions most easily accomplished in plan implementation.

A highly effective and low-cost implementation mechanism is the incorporation of our hazard mitigation plan recommendations into Operational Area and other planning efforts discussed in more detail below. Another strategy is for participating jurisdictions to assimilate mitigation strategies into their day-to-day functions and priorities. This effort will be achieved by monitoring agenda, attending stakeholder meetings, and review of programs and policies for coordination and opportunities to implement mitigation strategies. Riverside County Operational Area will also monitor funding opportunities to facilitate the implementation of more costly recommended actions. The County will assist in the identification of specialized pre- and post- disaster funds, state and federal earmarked funds, and other grant programs for opportunities to implement mitigation actions and identified projects.

The primary duty of the participating jurisdictions is to participate in reporting to their community governing boards and the public on the status of their plan implantation and mitigation opportunities and keep the County of Riverside EMD updated of changes to the status of their recommended actions or priorities. The primary duty of the County will be to promote mitigation action funding opportunities, organize Steering Committee

meetings for plan evaluation and potential updates on a yearly basis and post any relevant information on the County website and others as appropriate.

9.2 Role of MJLHMP Steering Committee

With the adoption of this plan, the participating jurisdictions will be responsible for the plan implementation and maintenance. The participating jurisdictions, led by County of Riverside Emergency Management Department will work to maintain a MJLHMP Steering Committee to:

- Disseminate hazard mitigation activities and opportunities to all participants;
- Encourage the implementation of high-priority, low-cost mitigation actions;
- Monitor and identify cost-share and funding opportunities to support the community and recommended actions;
- Monitor and assist in implementation and evaluate updates of this plan;
- Support and assist jurisdictions not included in the Multi-Jurisdictional Plan to develop their own local hazard mitigation plans;
- Report on plan progress and changes to participating jurisdictions.

9.3 Incorporation into Existing Planning Mechanisms

Incorporation of the hazard mitigation plan recommendations into other County and jurisdictional plans and policies is part of our implementation plan. Where possible the planning team will use existing plans and/or programs to implement hazard mitigation actions. This plan should also be cross-referenced when related planning mechanisms are updated. Mitigation is most successful when it is incorporated into the day-to-day functions and priorities of government and development. As described in this plan's capability assessment and jurisdictional annexes, the County and participating jurisdictions already implement policies and programs to reduce losses to life and property from hazards. This plan builds upon the momentum developed through previous and related planning efforts and mitigation programs and recommends implementing actions, where possible, through these other program mechanisms.

Plans include:

- County and City General Plans
- County and City Emergency Operations Plans
- County and City Ordinances
- Flood and Storm-water Management Master Plans
- Wildfire Protection Plans
- Capital Improvement Plans and Budgets
- Other plans and policies outlined in the capability assessments in the jurisdictional annexes
- Other plans, regulation, and practices with a mitigation focus

The Mitigation Planning Team involved in the updates to the planning mechanisms will be responsible for integrating the findings and recommendations of this plan with these other plans, programs, etc., as appropriate. As an action step to ensure integration with other planning mechanisms, an EMD designee will discuss this topic at the Operational Areas Planning Committee (OAPC) and/or Disaster Councils annually. The designee will discuss where there are opportunities to incorporate the plan into other planning mechanisms and who would be responsible for leveraging those opportunities. Jurisdictions participating in this plan will work with their Planning Committees to integrate their identified mitigation actions into their local plans and programs. Efforts to integrate the LHMP into local plans, programs, and policies will be reported on at OAPC annually. Efforts should continuously be made to monitor the progress of mitigation actions integrated into other planning mechanisms and, where appropriate, their priority actions should be incorporated into updates of this hazard mitigation plan.

The process for incorporation of the 2018 MJLHMP into specific existing planning mechanisms include identifying hazards, goals, and strategies from the MJLHMP into the following documents:

- The Riverside County Operational Area Emergency Operations Plan
- The County of Riverside Emergency Management Department Strategic Plan
- The County of Riverside Emergency Management Department Program Emergency Management Accreditation Plan (EMAP)
- The Riverside County General Plan Safety Element
- The County of Riverside Operational Area Recovery Plan

9.4 Maintenance Updates and Record of Changes

Plan maintenance will be an annual process by both the County and participating jurisdictions to monitor and evaluate the plans' implementation and to update the plan as progress, changes in actions or priorities, or changing circumstances are recognized. The County will notify Cal OES and FEMA with plan updates to ensure they have the most current version of a participating jurisdiction's plan.

County of Riverside Emergency Management Department, Planning Division, is responsible for initiating plan reviews, consulting and organizing a Hazard Mitigation Steering Committee Meeting and facilitating coordination with participating jurisdictions. In order to evaluate progress and update mitigation strategies, the County of Riverside EMD and the participating jurisdictions will review the plan annually and/or following a declared emergency or disaster. County of Riverside EMD and participating jurisdictions will submit a five-year written update to Cal OES and FEMA Region IX, unless disaster or other circumstance (e.g., changing regulations) require a change to this schedule.

A record of changes is included in this plan. See chart following the Update Process at end of the section.

Maintenance Evaluation Process

The yearly review of the plan will be presented and discussed at the Operational Area Planning Committee and/or the Disaster Council Meeting. The assessment will address:

- The goals and objectives and expected conditions such as the nature, magnitude, and/or type of risks have changed
- EMD report on any resources needed/changes to resources to implement the plan
- The EMD report will address the changes needed to implement the plan due to technical, political, legal, or coordination issues
- A report on the progress on mitigation actions

Update Process

Update strategies will be consistent with FEMA and CalOES requirements. Updates to this plan will:

- Consider changes in vulnerability due to action implementation;
- Document and highlight instances where mitigation efforts have proven effective;

- Document new hazards and identify any hazards that were previously overlooked;
- Incorporate any new data or studies on identified hazards and risks;
- Incorporate growth and development-related changes to infrastructure inventories; and
- Incorporate any new action recommendations or changes in action or risk prioritization.

County of Riverside Emergency Management Department, Planning Division, will conduct a plan update at least 18 months prior to plan expiration. In addition, Riverside County EMD will seek grant funding to support the coordination and development of the plan update. After plan adoption, the MJLHMP Steering Committee in coordination with the EMD Planning team will conduct an annual review of the plan, identifying any sections in the plan that will require further updates. The sections identified for revision will be included in the next MJLHMP update. The EMD Planning team can hold additional meetings throughout the five-year cycle to address plan reviews and updates. Changes will be made to the plan to accommodate for actions that are no longer relevant due to shifting agendas, funding or no longer considered feasible.

Record of Changes Chart

DATE	DESCRIPTION OF CHANGE	NAME
8/7/23	Update contact information	Brian MacGavin
8/7/23	Correct typos and formatting issues	Brian MacGavin

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10.0 Continued Public Involvement

The Riverside County Operational Area Multi-Jurisdiction Hazard Mitigation Plan update process has provided an opportunity to solicit participation from new and existing stakeholders, publicize successful mitigation strategies and actions, and seek public comments.

The County will continue its efforts to involve the public during the annual maintenance process and after any major events that lead to revisions in the plan.

The Riverside County Emergency Management Department and participating jurisdictions will be responsible for facilitating continued public and stakeholder involvement for their plan updates. They will do this through input from the Hazard Mitigation Steering Committee, public outreach meetings, web and social media postings, press releases and public hearings for the plan's maintenance.

There are also opportunities for participating jurisdictions to obtain and share information with their stakeholders by participating in the Operational Area Planning Committee and the Disaster Council meetings.

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APPENDIX A – Resolution Draft

RESOLUTION NO.2023-xxx

A RESOLUTION ADOPTING THE RIVERSIDE COUNTY OPERATIONAL AREA MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN AS REQUIRED BY THE FEDERAL DISASTER MITIGATION AND COST REDUCTION ACT OF 2000.

WHEREAS, President William J. Clinton signed H.R. 707, the Disaster Mitigation and Cost Reduction Act of 2000, into law on October 30, 2000.

WHEREAS, the Disaster Mitigation Act of 2000 requires all jurisdictions to be covered by a Local Hazard Mitigation Plan to be eligible for Federal Emergency Management Agency post-disaster funds; and

WHEREAS, The County of Riverside Emergency Management Department has acted as the lead agency in the development of the Riverside County Operational Area Multi-Jurisdictional Local Hazard Mitigation Plan; and

WHEREAS, the County of Riverside Emergency Management Department coordinated the development of the Riverside County Operational Area Multi-Jurisdictional Local Hazard Mitigation Plan; and

WHEREAS, the County of Riverside and the participating jurisdictions authority are within the Riverside County Operational Area, and

WHEREAS, the County of Riverside is concerned about mitigating potential losses from natural disasters before they occur, and

WHEREAS, the plan identifies potential hazards, potential loses and potential mitigation measures to limit loses, and

WHEREAS, the California Governor's Office of Emergency Services has reviewed the plan on behalf of the Federal Emergency Management Agency; and

WHEREAS, formal adoption of the plan by the County of Riverside is required before final approval of the plan can be obtained from the Federal Emergency Management Agency; and

WHEREAS, The County of Riverside has determined that it would be in the best interest of the County to adopt the Riverside County 2023 Operational Area Multi-Jurisdictional Local Hazard Mitigation Plan.

NOW, THEREFORE, BE IT RESOLVED THAT THE BOARD OF SUPERVISORS HEREBY ADOPTS the Riverside County Operational Area Multi-Jurisdictional Local Hazard Mitigation Plan to meet the requirements of the Disaster Mitigation and Cost Reduction Act of 2000 and directs the County of Riverside Emergency Management Department to forward the Riverside County Operational Area Multi-Jurisdictional Local Hazard Mitigation Plan to the California Governor's Office of Emergency Services and Federal Emergency Management Agency on behalf of the County and all other adopting jurisdictions for final approval.

PASSED AND APPROVED at a regular meeting of the Riverside County Board of Supervisors on this _____day of_____, 2023.

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APPENDIX B – Participating Jurisdictions Contact Information Provided Upon Request

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APPENDIX C – Public Outreach Presentations and Meetings

Because many meetings were held virtually supporting documentation will be provided upon request.

Continue to Next Page.

Public Outreach

Outreach Presentations and Updates

Meetings listed here were open to and attended by the public

Date	Name of Meeting	Type of Presentation
1/13/2022	Operational Area Planning Committee (OAPC) Meeting	Informed OA on upcoming plan to update
1/27/2022	Riverside County Emergency Managers Association (RCEMA)	MJLHMP status update
3/24/2022	OAPC	MJLHMP status update
4/13/2022	OA Steering Committee	Review of hazards, goals, objectives and strategies
5/12/2022	RCEMA	MJLHMP status update
5/26/2022	OAPC	MJLHMP status update
6/15/2022	OA Update Kickoff Meeting	LHMP discussion, Local Hazard Mitigation Plan update process, encouraged participation and Public Outreach
7/28/2022	OAPC	MJLHMP status update
8/3/2022	OA MJLHMP Steering Committee	Update mitigation strategies and finalize hazard profile definitions
8/17/2022	LHMP Workshops X2	Educate participants on LHMP update requirements and timelines
8/18/2022	Riverside County Emergency Management Health Care Coalition (RCEMHCC)	MJLHMP status update and outreach for participation
8/24/2022	LHMP Workshops X2	Educate participants on LHMP update requirements timeline
10/5/2022	OA MJHMP Steering Committee	Discussed timelines, risk assessment tools and progress mitigation action ranking & scoring and data collection and reporting
11/3/2022	Operational Area Planning Committee (OAPC) & Disaster Council Meeting	MJLHMP status update

11/10/2022	RCEMA	MJLHMP status update
1/4/2023	OA MJLHMP Steering Committee	Discussed timelines, risk assessment tools and progress mitigation action ranking & scoring and data collection and reporting
1/12/2023	RCEMA	MJLHMP status update
3/9/2023	RCEMA	MJLHMP status update
3/23/2023	OAPC	MJLHMP status update
4/3/2023	OA MJHMP Steering Committee	Discussed timelines MLHMP & LHMP status updates

Planning Process Participation by Jurisdiction

Cities/ Districts	Agency Type	Point of Contact	Planning Participant	Annex Status	Kickoff Mtg Attended	Workshop Attended	Email Communication	Phone/Zoom/ in person Communication
			Planning Process Activities					
Beaumont Unified School District	School District/ Education	Serenity Junge, Dir. of Risk Mgmt	Yes	Submitted	6/15/22			
City of Banning	City	Matthew Hamner, Chief of Police	Yes	Submitted	6/15/22			
City of Beaumont	City	Adrian Cardenas, ESC	Yes	Submitted	6/15/22	8/24/22		
City of Blythe	City	Kelly Thomas, CSO	Yes	Submitted			12/19/22	
City of Calimesa	City	Bonnie Johnson, City Manager	Yes	Submitted	6/15/22			
City of Coachella	City	MC Aguirre, ESC	Yes	Submitted		8/24/22		
City of Corona	City	Gina M McGough, ESC	Yes	Submitted	6/15/22			
City of Desert Hot Springs	City	Doria Wilms, Deputy City Manager	Yes	Submitted	6/15/22	8/24/22		
City of Eastvale	City	Eva Terekhova, Em. Mgmt. Spec.	Yes	Submitted	6/15/22	8/17/22		
City of Hemet	City	Robert Gomez, ESC	Yes	Submitted	6/15/22	8/17/22		
City of Indian Wells	City	Michael Ornelas, ESC	Yes	Submitted	6/15/22	8/24/22		
City of Jurupa Valley	City	David French, Public Works Op. Mgr	Yes	Submitted	6/15/22	8/24/22		
City of La Quinta	City	Dana Lagunas, Sr. Em. Mgmt. Coord.	Yes	Submitted	6/15/22	8/24/22		
City of Lake Elsinore	City	Rick DeSantiago, ESC	Yes	Submitted	6/15/22			
City of Menifee	City	Vanessa Barerra, EMA	Yes	See App. J	6/15/22			
City of Moreno Valley	City	Raquel Ortega, Sr. Admin Asst.	Yes	Submitted		8/17/22		
City of Murrieta	City	Rachel Hollinger, Dis. Prep. Coord.	Yes	Submitted	6/15/22			

City of Norco	City	Jeff Veik, Fire Chief	Yes	Submitted	6/15/22			
City of Palm Desert	City	Michael Ornelas, ESC	Yes	Submitted	6/15/22	8/24/22		
City of Palm Springs	City	Daniel Deselms, EMC	Yes	Submitted	6/15/22			
City of Perris	City	David Martinez, Fire Marshall	Yes	Submitted	6/15/22			
City of Rancho Mirage	City	Brian Kephart, ESC	Yes	Submitted	6/15/22	8/24/22		
City of San Jacinto	City	Caleb Hargis, Mgmt. Analyst	Yes	Submitted	6/15/22	8/24/22		
City of Temecula	City	Mikel Alford, Emergency Manager	Yes	Submitted	6/15/22			
City of Wildomar	City	Daniel Torres, Comm. Svcs. Director	Yes	Submitted	6/15/22			
Hemet USD	Special District/ Healthcare	Lucy Dressel, Safety, Risk Mgr Ben. Dir.	Yes	Submitted	6/15/22			
Imperial Irrigation District	Utilities	Robert Placido, ESC II	Yes	Submitted	6/15/22			
Morongo Band of Mission Indians	Tribe	David Ellsworth, EOC Manager	Yes	Submitted			7/14/22	
Perris Union High School District	Special District/ Healthcare	Judy Miller, Dir. of Risk Mgmt	Yes	Submitted	6/15/22	8/24/22		
Rancho California Water District	Utilities	Tom Marcoux, Safety and Risk Mgr	Yes	Submitted	6/15/22	8/24/22		
Riverside County Office of Education	County/ Education	Michael D'Amico, Safety/Em. Prep	Yes	Submitted		8/17/22		
San Jacinto Unified School District	School District/ Education	Dawn Lawrence, Safety Officer	Yes	Submitted	6/15/22			
City of Canyon Lake	City	Mike Borja, Admin. Services Manager	Yes	Submissio n Pending			1/10/23	2/7/23 ip
City of Indio	City	Dennis Day, EOC Mgr	Yes	Submissio n Pending	6/15/22			
City of Riverside	City	Mike Annas, EOC	Yes	Submissio n Pending	6/15/22	8/17/22		

Desert Healthcare District & Foundation	Special District/ Healthcare	Chris Christensen, Chief Admin Officer	Yes	Submission Pending			3/3/23 3/6/23 3/7/23	3/3/23 ph 3/13/23 zm 3/21/23 zm
Idyllwild Fire District	Fire District	Mark LaMont, Chief	Yes	Submission Pending	6/15/22	8/24/22		
Moreno Valley Unified School District	Special District/ Healthcare	Julissa Barragan, Secretary III	Yes	Submission Pending	6/15/22	8/24/22		
City of Cathedral	City	Craig Sanborn, Battalion Chief	Yes	Dropped Out	3/22			
Metropolitan Water District	Utilities	Ian White, Em. Mgmt Program Mgr	Yes	N/A		8/24/22		
Pechanga	Tribe	Edward Chacon	Yes	Dropped Out	6/15/22			
29 Palms	Tribe	Ana Gutierrez	Yes	Submitted	5/15/22	8/24/22		
Coachella Valley Water District	Utilities	Greg Papazian	Yes	Dropped Out	6/15/22	8/24/22		
Riverside County Flood Control/Water	County/ Special District	Guirguis, Iad	Yes	County Dept N/A	6/15/22			
Agua Caliente Band of Cahuilla Indians	Tribe	Samantha Byrd, ESC	No	N/A				
Desert Sands Unified	School District/ Education	Eduard Nacua, Director of Safety	No	N/A				
Eastern Municipal WD	Utilities	Zuzzette Bricker, Tech Insul. Em. Mgmt	No	N/A				
Kaiser Hospital Riverside	Special District/ Healthcare	Corrie Sankey, Dir. Env. Health Svcs.	No	N/A				
Lake Elsinore USD	Special District/ Healthcare	James Judziewicz, Risk Sup.	No	N/A				
March AFB	Special District	Marvin Tucker, Chief Em. Mgmt.	No	N/A				
Ramona Band of Indians	Tribe	J Gomez, Project Mgr	No	N/A				
Riverside Community College District	Special District/ Healthcare	Tu Beiwei, Dir. Of Risk Mgmt	No	N/A				

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APPENDIX D – Inventory Template

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY 2023 INVENTORY WORKSHEETS

Insert Jurisdiction/Agency Name
Insert Date

Introduction: The completed documents will be reviewed by a planning team to determine their compliance with Cal OES and FEMA requirements. The Participation by a wide range of stakeholders in identifying and implementing mitigation actions is required.

SPECIAL CONCERNS:
Has the completed Letter of Commitment been returned to EMD? EMD must forward this completed Letter of Commitment to CAL OES.

TABLE OF CONTENTS

The Local Hazard Mitigation Plan Review Tool is used by Cal OES and FEMA to verify all required information is in the submitted. Please refer to the document for information.

SECTION 1. LOCAL JURISDICTION CONTACT INFORMATION

The information on this page identifies:

- Jurisdiction and the contact person
- Jurisdiction's service area size and population
- EOP Plan and a Safety Element of their General Plan

PLEASE PROVIDE THE FOLLOWING INFORMATION:

Agency/Jurisdiction:				
Type Agency/Jurisdiction:				
Contact Person:	Title:			
First Name:		Last Name:		
Agency Address:	Street:			
	City:			
	State:			
	Zip:			
Contact Phone			FAX	
E-mail				
Population Served		Square Miles Served		
Does your organization have a general plan?				
Does your organization have a safety component to the general plan?				
What year was your plan last updated?				
Does your organization have a disaster/emergency operations plan?				
What year was your plan last updated?				
Do you have a recovery annex or section in your plan?				
Do you have a terrorism/WMD annex or section in your plan?				

SECTION 2. Hazard Identification Questionnaire

The purpose of the questionnaire is to help identify the hazards within your service area. The list was developed from the first round of meetings with the various working groups in the 2012 plan creation, and from the hazards listed in the County's General Plan. Each hazard is discussed in detail in the 2012 LHMP. The information will be used as the basis for each jurisdiction to evaluate its capabilities, determine its needs, and to assist in developing goals and strategies. The information identifies:

a) What hazards can be identified within or adjacent to the service area of the jurisdiction.
b) Which of those hazards have had reoccurring events?
c) What specific hazards and risks are considered by the jurisdiction to be a threat specifically to the jurisdiction? (These locations should be identified by name and location for inclusion in the Specific Hazard Summary Table).
    a. Specific types of facilities owned and operated by the jurisdiction.
    b. Locations damaged from prior disasters or hazard causing events.
d) Information about the jurisdiction's EOC

With your Multi-Disciplinary Planning Team:

a. Instructions for Updating Jurisdictions, with your planning team: Review your old Questionnaire for accuracy and relevance, mark changes.

b. Instructions for New Jurisdictions and Special Districts, with your planning team, meet and go over the questionnaire. Fill in YES, NO or NA on the Questionnaire.

DOES YOUR ORGANIZATION HAVE:	
AIRPORT IN JURISDICTION	
AIRPORT NEXT TO JURISDICTION	
DAIRY INDUSTRY	
POULTRY INDUSTRY	
CROPS/ORCHARDS	
DAMS IN JURISDICTION	
DAMS NEXT TO JURISDICTION	
LAKE/RESERVOIR IN JURISDICTION	
LAKE/RESERVOIR NEAR JURISDICTION	
JURISDICTION IN FLOOD PLAIN	
CONTROLLED FLOOD CONTROL CHANNEL	
UNCONTROLLED FLOOD CONTROL CHANNEL	
EARTHQUAKE FAULTS IN JURISDICTION	
EARTHQUAKE FAULTS NEXT TO JURISDICTION	
MOBILE HOME PARKS	
NON-REINFORCED FREEWAY BRIDGES	
NON-REINFORCED BRIDGES	
BRIDGES IN FLOOD PLAIN	
BRIDGES OVER OR ACROSS RIVER/STREAM	
ROADWAY CROSSING RIVER/STREAM	
NON-REINFORCED BUILDINGS	
FREEWAY/MAJOR HIGHWAY IN JURISDICTION	
FREEWAY/MAJOR HIGHWAY NEXT TO JURISDICTION	
FOREST AREA IN JURISDICTION	
FOREST AREA NEXT TO JURISDICTION	
WITHIN THE 50 MILES SAN ONOFRE EVACUATION ZONE	
MAJOR GAS/OIL PIPELINES IN JURISDICTION	
MAJOR GAS/OIL PIPELINES NEXT TO JURISDICTION	
RAILROAD TRACKS IN JURISDICTION	
RAILROAD TRACKS NEXT TO JURISDICTION	
HAZARDOUS WASTE FACILITIES IN JURISDICTION	
HAZARDOUS WASTE FACILITIES NEXT TO JURISDICTION	
HAZARDOUS STORAGE FACILITIES IN JURISDICTION	
HAZARDOUS STORAGE FACILITIES NEXT TO JURISDICTION	
DOES YOUR ORGANIZATION OWN OR OPERATE A FACILITY	
IN A FLOOD PLAIN	
NEAR FLOOD PLAIN	
NEAR RAILROAD TRACKS	
NEAR A DAM	
UPSTREAM FROM A DAM	
DOWNSTREAM FROM A DAM	
DOWNSTREAM OF A LAKE	
DOWNSTREAM FROM A RESERVOIR	
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	
ON AN EARTHQUAKE FAULT	
NEAR AN EARTHQUAKE FAULT	
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	
IN A FOREST AREA	
NEAR A FOREST AREA	

NEAR A MAJOR HIGHWAY	
A HAZARDOUS WASTE FACILITY	
NEAR A HAZARDOUS WASTE FACILITY	
A HAZARDOUS STORAGE FACILITY	
NEAR A HAZARDOUS STORAGE FACILITY	
NON-REINFORCED BUILDINGS	
A MAJOR GAS/OIL PIPELINE	
NEAR A MAJOR GAS/OIL PIPELINE	
DOES YOUR ORGANIZATION HAVE ANY LOCATIONS THAT:	
HAVE BEEN DAMAGED BY EARTHQUAKE AND NOT REPAIRED	
HAVE BEEN DAMAGED BY FLOOD	
HAVE BEEN DAMAGED BY FLOOD MORE THAN ONCE	
HAVE BEEN DAMAGED BY FOREST FIRE	
HAVE BEEN DAMAGED BY FOREST FIRE MORE THAN ONCE	
HAVE BEEN IMPACTED BY A TRANSPORTATION ACCIDENT	
HAVE BEEN IMPACTED BY A PIPELINE EVENT	
EMERGENCY OPERATIONS INFORMATION	
DOES YOUR ORGANIZATION HAVE AN EOC	
IS YOUR EOC LOCATED IN A FLOOD PLAIN	
NEAR FLOOD PLAIN	
NEAR RAILROAD TRACKS	
NEAR A DAM	
UPSTREAM FROM A DAM	
DOWNSTREAM FROM A DAM	
DOWNSTREAM OF A LAKE	
DOWNSTREAM FROM A RESERVOIR	
NEAR A CONTROLLED FLOOD CONTROL CHANNEL	
NEAR UNCONTROLLED FLOOD CONTROL CHANNEL	
ON AN EARTHQUAKE FAULT	
NEAR AN EARTHQUAKE FAULT	
WITHIN THE 50 MILE SAN ONOFRE EVACUATION ZONE	
IN A FOREST AREA	
NEAR A FOREST AREA	
NEAR A MAJOR HIGHWAY	
A HAZARDOUS WASTE FACILITY	
NEAR A HAZARDOUS WASTE FACILITY	
A HAZARDOUS STORAGE FACILITY	
NEAR A HAZARDOUS STORAGE FACILITY	
NON-REINFORCED BUILDINGS	
A MAJOR GAS/OIL PIPELINE	
NEAR A MAJOR GAS/OIL PIPELINE	
OTHER FACILITY INFORMATION **ARE THERE LOCATIONS WITHIN YOUR JURISDICTION THAT:**	
COULD BE CONSIDERED A TERRORIST TARGET	
COULD BE CONSIDERED A BIO-HAZARD RISK	

With your planning team, list the “Yes” answers and discuss. Use the information as a group to summarize your jurisdiction’s hazards and vulnerabilities.

SECTION 3. SPECIFIC HAZARDS SUMMARY

This table helps to identify the information (name, owner, location, etc.) about the specific hazards identified in the Hazard Questionnaire.

In the Summary Table, list the basic information of the hazards identified by the jurisdiction in the Hazard Identification Questionnaire as a potential threat. These specific hazards were used in the development of response plans, maps, and other analysis data.

a. Instructions for Updating Jurisdictions and Special Districts: With your planning team, review the "Yes" answers and see if there were any changes, if so, summarize why there is a difference from the 2018.

b. Instructions for New Jurisdictions and Special Districts: With your planning team, review the "Yes" answers and discuss. Use the information as a group to summarize your jurisdiction's hazards and vulnerabilities.

SPECIFIC HAZARDS SUMMARY

Jurisdiction	Hazard Type	Hazard Name	In Jurisdiction?	Adjacent to Jurisdiction?

SECTION 4. JURISDICTION VULNERABILITY WORKSHEET

This table is a listing of the primary hazards identified. Participants were asked to evaluate the potential for an event to occur in their jurisdiction by hazard and the potential impact on the following:

1. Public (loss of life and injuries)
2. Responders
3. Continuity of operations for continued delivery of services
4. Property, facilities, and infrastructure
5. Environment
6. Economic condition of the jurisdiction
7. Ability to recover from the event and return to normal daily activities
8. Public confidence in the jurisdiction's governance

The jurisdictions were asked to rate the potential and severity using a scale of between 0 and 4 (4 being the most severe). The jurisdictions were also asked to rank the listed hazards as they relate to their jurisdiction from 1 to 20 (1 being the highest overall threat to their jurisdiction).

NAME:	AGENCY:	DATE:

	COUNTY		LOCAL JURISDICTION		
HAZARD	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**SEVERITY 0 - 4**	**PROBABILITY 0 - 4**	**RANKING 1 - 20**
1. EARTHQUAKE					
2. WILDLAND FIRE					
3. FLOOD					
OTHER NATURAL HAZARDS					
4. DROUGHT					
5. LANDSLIDES					
6. INSECT INFESTATION					
7. EXTREME SUMMER/WINTER WEATHER					
8. SEVERE WIND EVENT					
AGRICULTURAL					
9. DISEASE/CONTAMINATION					
10. TERRORISM					
OTHER HUMAN-CAUSED					
11. PIPELINE					
12. AQUEDUCT					
13. TRANSPORTATION					
14. POWER OUTAGE					
15. HAZMAT ACCIDENTS					
16. NUCLEAR ACCIDENT					
17. TERRORISM					
18. CIVIL UNREST					
19. JAIL/PRISON EVENT					
MEDICAL					
20. EMERGING / RE-EMERGING INFECTIOUS DISEASES					
21. PANDEMIC					

SECTION 5. JURISDICTION MITIGATION STRATEGIES AND GOALS

This comprehensive table is a listing of the various mitigation strategies, goals, and objectives developed by the 2023 MJLHMP Steering Committee. The jurisdictions were also given the opportunity to list additional, strategies, goals, and objectives specific to either their jurisdiction or their workgroup (i.e., hospitals, agriculture, etc.).

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS with your panning team
Instructions for updating jurisdictional and district LHMPs: Please review the table to determine the ranking from the 2018 MJLHMP.

Instructions for new jurisdictions and districts: Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction / district. Please list any additional mitigation goals or recommendations at the end of this document. For mitigation activities priority levels use H for high, M for medium, L for low and N/A for not applicable.

EARTHQUAKE	
	Aggressive public education campaign based on predictions
	Generate new literature for dissemination to:
	◊ Government employees
	◊ Businesses
	◊ Hotel/motel literature
	◊ Local radio stations for education
	◊ Public education via utilities
	◊ Identify/create television documentary content
	Improve the Emergency Alert System (EAS)
	◊ Consider integration with radio notification systems
	◊ Upgrade alerting and warning systems for hearing impaired
	◊ Training and maintenance
	Procure earthquake-warning devices for critical facilities
	Reinforce emergency response facilities
	Provide training to hospital staffs
	Require earthquake gas shutoffs on remodels/new construction
	Evaluate re-enforcing reservoir concrete bases
	Evaluate EOCs for seismic stability
	Install earthquake cutoffs at reservoirs
	Install earthquake-warning devices at critical facilities
	Develop a dam inundation plan for new Diamond Valley Reservoir
	Earthquake retrofitting
	◊ Bridges/dams/pipelines
	◊ Government buildings/schools
	◊ Mobile home parks
	Develop educational materials on structural reinforcement and home inspections **(ALREADY DEVELOPED)**
	Ensure Uniform Building Code compliance
	◊ Update to current compliance when retrofitting
	Insurance coverage on public facilities
	Funding for non-structural abatement (Earthquake kits, etc.)
	Pre - identify empty commercial space for seismic re-location
	Electrical co-generation facilities need retrofitting/reinforcement (Palm Springs, others?)
	Mapping of liquefaction zones
	Incorporate County geologist data into planning
	Backup water supplies for hospitals
	Evaluate pipeline seismic resiliency
	Pre-positioning of temporary response structures
	Fire sprinkler ordinance for all structures

	Evaluate adequacy of reservoir capacity for sprinkler systems
	Training/standardization for contractors performing retrofitting
	Website with mitigation/contractor/retrofitting information
	◊ Links to jurisdictions
	◊ Alerting information
	◊ Volunteer information
	Evaluate depths of aquifers/wells for adequacy during quakes
	Evaluate hazmat storage regulations near faults
COMMUNICATIONS IN DISASTER ISSUES	
	Communications Interoperability
	Harden repeater sites
	Continue existing interoperability project
	Strengthen/harden
	Relocate
	Redundancy
	Mobile repeaters
FLOODS	
	Update development policies for flood plains
	Public education on locations of flood plains
	Develop multi-jurisdictional working group on floodplain management
	Develop greenbelt requirements in new developments
	Update weather pattern/flood plain maps
	Conduct countywide study of flood barriers/channels/gates/water dispersal systems
	Required water flow/runoff plans for new development
	Perform GIS mapping of flood channels, etc.
	Install vehicular crossing gates/physical barriers for road closure
	Maintenance of storm sewers/flood channels
	Create map of flood channels/diversions/water systems etc.
	Require digital floor plans on new non-residential construction
	Upgrade dirt embankments to concrete
	Conduct countywide needs study on drainage capabilities
	Increase number of pumping stations
	Increase sandbag distribution capacities
	Develop pre-planned response plan for floods
	◊ Evacuation documentation
	◊ Re-examine historical flooding data for potential street re-design
	Training for city/county PIOs about flood issues
	Warning systems - ensure accurate information provided
	◊ Publicize flood plain information (website?)
	◊ Install warning/water level signage

	◊ Enhanced public information
	◊ Road closure compliance
	◊ Shelter locations
	◊ Pre-event communications
	Look at County requirements for neighborhood access
	◊ Secondary means of ingress/egress
	Vegetation restoration programs
	Ensure critical facilities are hardened/backed up
	Hardening water towers
	Terrorism Surveillance - cameras at reservoirs/dams
	Riverbed maintenance
	Evaluate existing lift stations for adequacy
	Acquisition of property for on-site retention
	Evaluate regulations on roof drainage mechanism
	Erosion-resistant plants
	Traffic light protection
	Upkeep of diversionary devices
	Install more turn-off valves on pipelines
	Backup generation facilities
	Identify swift water rescue capabilities across County
WILDFIRES	
	Aggressive weed abatement program
	◊ Networking of agencies for weed abatement
	Develop strategic plan for forest management
	Public education on wildfire defense
	Encourage citizen surveillance and reporting
	Identify hydrants with equipment ownership information
	Enhanced firefighting equipment
	Fire spotter program/red flag program
	◊ Expand to other utilities
	Research on insect/pest mitigation technologies
	Volunteer home inspection program
	Public education program
	◊ Weather reporting/alerting
	◊ Building protection
	◊ Respiration
	Pre-identify shelters/recovery centers/other resources
	Roofing materials/defensive spacing regulations
	Community task forces for planning and education
	Fuel/dead tree removal

	Strategic pre-placement of firefighting equipment
	Establish FEMA coordination processes based on ICS
	Brush clearings around repeaters
	Research new technologies for identifying/tracking fires
	Procure/deploy backup communications equipment
	"Red Tag" homes in advance of event
	Provide fire-resistant gel to homeowners
	Involve insurance agencies in mitigation programs
	Clear out abandoned vehicles from oases
	Code enforcement
	Codes prohibiting fireworks
	Fuel modification/removal
	Evaluate building codes
	Maintaining catch basins
OTHER HAZARDS	
	Improve pipeline maintenance
	Wetlands mosquito mitigation (West Nile Virus)
	Insect control study
	Increase County Vector Control capacities
	General public drought awareness
	◊ Lawn watering rotation
	Develop County drought plan
	Mitigation of landslide-prone areas
	Develop winter storm sheltering plan
	Ease permitting process for building transmission lines
	Evaluate restrictions on dust/dirt/generating activities during wind seasons
	Rotational crop planning/soil stabilization
	Enhance agricultural checkpoint enforcement
	Agriculture - funding of detection programs
	Communications of pipeline maps (based on need to know)
	Improved notification plan on runaway trains
	Improve/maintain blackout notification plan.
	Support business continuity planning for utility outages
	Terrorism training/equipment for first responders
	◊ Terrorism planning/coordination
	◊ Staffing for terrorism mitigation
	Create a SONGS regional planning group
	◊ Include dirty bomb planning
	Cooling stations - MOUs in place
	Fire Ant eradication program

	White Fly infestation abatement/eradication program
	Develop plan for supplemental water sources
	Public education on low water landscaping
	Salton Sea desalinization
	Establish agriculture security standards (focus on water supply)
	ID mutual aid agreements
	Vulnerability assessment on fiber-optic cable
	Upgrade valves on California aqueduct
	Public education
	◊ Bi-lingual signs
	◊ Power Outage information
	Notification system for rail traffic - container contents
	Control and release of terrorism intelligence
	Develop prison evacuation plan (shelter in place?)

Use the list and rankings to narrow down or identify "your" strategies. The mitigation strategy serves as the long-term blueprint for reducing the potential losses identified in the risk assessment. The mitigation strategy includes the development of goals, objectives, and prioritized mitigation actions.

Goals are general guidelines that explain what you want to achieve. They are broad policy statements and are usually long-term and represent global visions, such as "Protect Existing Property."

Objectives define strategies or implementation steps to attain the identified goals. Unlike goals, objectives are specific, measurable, and may have a defined completion date. Objectives are more specific, such as "Increase the number of buildings protected from flooding."
The development of effective goals and objectives enables the planning team to evaluate the merits of alternative mitigation actions and the local conditions in which these activities would be pursued. A potential mitigation action that would support the goal and objective goal example above is "Acquire repetitive flood loss properties in the Acadia Woods Subdivision."

In the 2018 MJLHMP, each jurisdiction was required to develop a Mitigation Strategy Proposal based on one of the following:

1. The strategy, goal, or objective rating of "High Priority" on the Local Jurisdiction Mitigation Strategies and Goals using the above worksheet
2. A specifically identified strategy, goal, or objective that was developed as part of one of the working groups planning sessions such as the hospitals or agriculture
3. A specifically identified strategy, goal, or objective that was developed as part of one of the jurisdiction's internal working group planning sessions

SECTION 6. LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

a. Instructions for Updating Jurisdictions and Special Districts: With your planning team, please review the table from # 5, and determine your ranking.

Review the chosen Mitigation Strategy that your jurisdiction submitted. The updated plan **must** identify the completed, deleted, or deferred actions or activities from the previously approved plan as a benchmark for progress.

If the mitigation actions or activities remain unchanged from the previously approved plan, the updated plan **must** indicate why changes are not necessary. Further, the updated plan **shall** include in its prioritization any new mitigation actions identified since the previous plan was approved or through the plan update process.

b. Instructions for New Jurisdictions and Special Districts: With your planning team, use the “High Priority” rated strategy, goal or objective as a starting point to determine your Mitigation Strategy Proposal.

LOCAL JURISDICTION PROPOSED MITIGATION ACTION AND STRATEGY PROPOSAL

Jurisdiction:
Contact:
Phone:

MITIGATION STRATEGY INFORMATION

Proposal Name:

Proposal Location:

Proposal Type

Place an "X" by the type of mitigation strategy (one or more may apply)

	Flood and mud flow mitigation
	Fire mitigation
	Elevation or acquisition of repetitively damaged structures or structures in high hazard areas
	Mitigation Planning (i.e., update building codes, planning develop guidelines, etc.)
	Development and implementation of mitigation education programs
	Development or improvement of warning systems
	Additional Hazard identification and analysis in support of the local hazard mitigation plan
	Drinking and/or irrigation water mitigation
	Earthquake mitigation
	Agriculture - crop related mitigation
	Agriculture - animal related mitigation
	Flood inundation/Dam failure
	Weather/Temperature event mitigation

DESCRIPTION OF THE PROPOSED MITIGATION STRATEGY

Proposal/Event History	List any previous disaster related events (dates, costs, etc.)
Description of Mitigation Goal Narrative:	Give a detailed description of the need for the proposal, any history related to the proposal. List the activities necessary for its completion in the narrative section below, including estimated timeline (how long will it take).

Does your jurisdiction have primary responsibility for the proposal? If not, what agency does?

Yes	X	No		Responsible Agency:

FUNDING INFORMATION

Place an "X" by the proposed source of funding for this proposal

- [ ] Unfunded proposal - funds are not available for the proposal at this time
- [ ] Local jurisdiction General Fund
- [ ] Local jurisdiction Special Fund (road tax, assessment fees, etc.)
- [ ] Non-FEMA Hazard Mitigation Funds
- [ ] Local Hazard Mitigation Grant Funds - Future Request
- [ ] Hazard Mitigation Funds

- [ ] Has your jurisdiction evaluated this mitigation strategy to determine its cost benefits? (i.e., has the cost of the mitigation proposal been determined to be beneficial in relationship to the potential damage or loss using the attached Cost/Benefit Analysis Sheet or another internal method)

As part of this process, each Submitting Jurisdiction is required to perform a cost-benefit analysis. They were required to answer the question at the bottom of the Proposal page that asks if they had conducted a Cost-Benefit Analysis of some type. This analysis was conducted either by completing a Cost Benefit form or by some other approved method. Many of the jurisdictions used the cost-effective analysis approach outlined in the FEMA publication, *Cost and Benefits of Natural Hazards Mitigation.* This cost-benefit analysis was not restricted to natural hazards.

In some cases, the jurisdiction or working group identified a proposal that highlighted a life- safety issue over a standard hazard proposal. This was done when there was either historical data or other sources of information indicating that the life-safety issue needed to be emphasized or brought to the public's attention.

SECTION 7. LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

This questionnaire identifies a comparison of specific land use issues between 2012, 2017 and 2022. The questionnaire also identifies the specific threat potential to the jurisdiction in relationship to residential and commercial structures along with critical facilities. This threat potential is focused on structural loss rather than dollar-value loss as it relates to the three main natural hazards – earthquakes, floods, and wildland fires. The determination of dollar-value loss relating to commercial and critical facilities was found to be very limited and a difficult task to establish. This issue will be addressed in future updates of the Plan.

The questionnaire also requires the jurisdiction to identify the process it will use to maintain their portion of the Plan.

LOCAL JURISDICTION DEVELOPMENT TRENDS QUESTIONNAIRE 2011

LAND USE ISSUES - COMPLETE THE INFORMATION BELOW

JURISDICTION:	**DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES NO**			
	2012 DATA	**2017 DATA**		**2022**
Current Population in Jurisdiction or Served			Projected Population in Jurisdiction or Served - in 2022	
Current Sq Miles in Jurisdiction or Served			Projected Sq Miles in Jurisdiction or Served - in 2022	
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?			If yes, please list ordinance or regulation number.	
What is the number one land issue your agency will face in the next five years				
Approximate Number of Homes/Apts/etc.			Projected Number of Homes/Apts/etc.- in 2022	
Approximate Total Residential Value			Projected Residential Total Value - in 2022	
Approximate Number of Commercial Businesses			Projected Number of Commercial Businesses - in 2022	
Approximate Percentage of Homes/Apts/etc in flood hazard zones			Approximate Percentage of Homes/Apts/etc in flood hazard zones - in 2022	
Approximate Percentage of Homes/Apts/etc in earthquake hazard zones			Approximate Percentage of Homes/Apts/etc in earthquake hazard zones - in 2022	
Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones			Approximate Percentage of Homes/Apts/etc in wildland fire hazard zones - in 2022	
Approximate Percentage of Commercial Businesses in flood hazard zones			Approximate Percentage of Commercial Businesses in flood hazard zones - in 2022	
Approximate Percentage of Commercial Businesses in earthquake hazard zones			Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2022	
Approximate Percentage of Commercial Businesses in wildland fire hazard zones			Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2022	
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones			Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2022	
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones			Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2022	
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.			Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2022	
Does your jurisdiction plan on participating in the County's on-going plan maintenance program every two years as described in Part I of the plan?			If not, how will your jurisdiction do plan maintenance?	
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?				Yes or No

SECTION 8. LOCAL MITIGATION PLAN REVIEW TOOL

The *Local Mitigation Plan Review Tool* demonstrates how the Local Mitigation Plan meets the regulation in 44 CFR §201.6 and offers States and FEMA Mitigation Planners an opportunity to provide feedback to the community.

- The Regulation Checklist provides a summary of FEMA's evaluation of whether the Plan has addressed all requirements.
- The Plan Assessment identifies the plan's strengths as well as documents areas for future improvement.
- The Multi-jurisdiction Summary Sheet is an optional worksheet that can be used to document how each jurisdiction met the requirements of each Element of the Plan (Planning Process; Hazard Identification and Risk Assessment; Mitigation Strategy; Plan Review, Evaluation, and Implementation; and Plan Adoption).

The FEMA Mitigation Planner must reference this *Local Mitigation Plan Review Guide* when completing the *Local Mitigation Plan Review Tool*.

Jurisdiction:	**Title of Plan:** **Local Hazard Mitigation Plan**	**Date of Plan:**
Local Point of Contact:	**Address:**	
Title:		
Agency:		
Phone Number:	**E-Mail:**	

State Reviewer:	**Title:**	**Date:**

FEMA Reviewer:	**Title:**	**Date:**
Date Received in FEMA Region ***(insert #)***		
Plan Not Approved		
Plan Approvable Pending Adoption		
Plan Approved		

SECTION 1:
REGULATION CHECKLIST

INSTRUCTIONS: The Regulation Checklist must be completed by FEMA. The purpose of the Checklist is to identify the location of relevant or applicable content in the Plan by Element/sub-element and to determine if each requirement has been 'Met' or 'Not Met.' The 'Required Revisions' summary at the bottom of each Element must be completed by FEMA to provide a clear explanation of the revisions that are required for plan approval. Required revisions must be explained for each plan sub-element that is 'Not Met.' Sub-elements should be referenced in each summary by using the appropriate numbers (A1, B3, etc.), where applicable. Requirements for each Element and sub-element are described in detail in this *Plan Review Guide* in Section 4, Regulation Checklist.

1. REGULATION CHECKLIST **Regulation** (44 CFR 201.6 Local Mitigation Plans)	**Location in Plan** (section and/or	**Met**	**Not Met**
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))			

1. REGULATION CHECKLIST **Regulation** (44 CFR 201.6 Local Mitigation Plans)	**Location in Plan** (section and/or	**Met**	**Not Met**
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))			
ELEMENT A: REQUIRED REVISIONS			
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)(i))			
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))			
ELEMENT B: REQUIRED REVISIONS			
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)(ii))			
C3. Does the Plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? (Requirement §201.6(c)(3)(i))			

1. REGULATION CHECKLIST **Regulation** (44 CFR 201.6 Local Mitigation Plans)	**Location in Plan** (section and/or	**Met**	**Not Met**
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))			
ELEMENT C: REQUIRED REVISIONS			
ELEMENT D. PLAN REVIEW, EVALUATION, AND IMPLEMENTATION (applicable to plan updates only)			
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))			
ELEMENT D: REQUIRED REVISIONS			
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))	Plan Adoption/ Resolution Page 4 all plans		
E2. For multi-jurisdictional plans, has each jurisdiction requesting approval of the plan documented formal plan adoption? (Requirement §201.6(c)(5))	Plan Adoption/ Resolution Page 4 all plans		

1. REGULATION CHECKLIST **Regulation** (44 CFR 201.6 Local Mitigation Plans)	**Location in Plan (section and/or**	**Met**	**Not Met**
ELEMENT E: REQUIRED REVISIONS			
ELEMENT F. ADDITIONAL STATE REQUIREMENTS (OPTIONAL FOR STATE REVIEWERS ONLY; NOT TO BE COMPLETED BY FEMA)			
F1.			
F2.			
ELEMENT F: REQUIRED REVISIONS			

SECTION 2:
PLAN ASSESSMENT

INSTRUCTIONS: The purpose of the Plan Assessment is to offer the local community more comprehensive feedback to the community on the quality and utility of the plan in a narrative format. The audience for the Plan Assessment is not only the plan developer/local community planner, but also elected officials, local departments and agencies, and others involved in implementing the Local Mitigation Plan. The Plan Assessment must be completed by FEMA. The Assessment is an opportunity for FEMA to provide feedback and information to the community on: 1) suggested improvements to the Plan; 2) specific sections in the Plan where the community has gone above and beyond minimum requirements; 3) recommendations for plan implementation; and 4) ongoing partnership(s) and information on other FEMA programs, specifically RiskMAP and Hazard Mitigation Assistance programs. The Plan Assessment is divided into two sections:

1. Plan Strengths and Opportunities for Improvement
2. Resources for Implementing Your Approved Plan

Plan Strengths and Opportunities for Improvement is organized according to the plan Elements listed in the Regulation Checklist. Each Element includes a series of italicized bulleted items that are suggested topics for consideration while evaluating plans, but it is not intended to be a comprehensive list. FEMA Mitigation Planners are not required to answer each bullet item and should use them as a guide to paraphrase their own written assessment (2-3 sentences) of each Element.

The Plan Assessment must not reiterate the required revisions from the Regulation Checklist or be regulatory in nature and should be open-ended and to provide the community with suggestions for improvements or recommended revisions. The recommended revisions are suggestions for improvement and are not required to be made for the Plan to meet Federal regulatory requirements. The italicized text should be deleted once FEMA has added comments regarding strengths of the plan and potential improvements for future plan revisions. It is recommended that the Plan Assessment be a short synopsis of the overall strengths and weaknesses of the Plan (no longer than two pages), rather than a complete recap section by section.

Resources for Implementing Your Approved Plan provides a place for FEMA to offer information, data sources and general suggestions on the overall plan implementation and maintenance process. Information on other possible sources of assistance including, but not limited to, existing publications, grant funding or training opportunities, can be provided. States may add state and local resources, if available.

A. Plan Strengths and Opportunities for Improvement

This section provides a discussion of the strengths of the plan document and identifies areas where these could be improved beyond minimum requirements.

Element A: Planning Process

How does the Plan go above and beyond minimum requirements to document the planning process with respect to:

- *Involvement of stakeholders (elected officials/decision makers, plan implementers, business owners, academic institutions, utility companies, water/sanitation districts, etc.).*
- *Involvement of Planning, Emergency Management, Public Works Departments or other planning agencies (i.e., regional planning councils);*
- *Diverse methods of participation (meetings, surveys, online, etc.); and*
- *Reflective of an open and inclusive public involvement process.*

Element B: Hazard Identification and Risk Assessment

In addition to the requirements listed in the Regulation Checklist, 44 CFR 201.6 Local Mitigation Plans identifies additional elements that should be included as part of a plan's risk assessment. The plan should describe vulnerability in terms of:

1) *A general description of land uses and future development trends within the community so that mitigation options can be considered in future land use decisions.*
2) *The types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas; and*
3) *A description of potential dollar losses to vulnerable structures, and a description of the methodology used to prepare the estimate.*

How does the Plan go above and beyond minimum requirements to document the Hazard Identification and Risk Assessment with respect to:

- *Use of best available data (flood maps, HAZUS, flood studies) to describe significant hazards;*
- *Communication of risk on people, property, and infrastructure to the public (through tables, charts, maps, photos, etc.);*
- *Incorporation of techniques and methodologies to estimate dollar losses to vulnerable structures;*
- *Incorporation of Risk MAP products (i.e., depth grids, Flood Risk Report, Changes Since Last FIRM, Areas of Mitigation Interest, etc.); and*
- *Identification of any data gaps that can be filled as new data became available.*

Element C: Mitigation Strategy

How does the Plan go above and beyond minimum requirements to document the Mitigation Strategy with respect to:

- *Key problems identified in, and linkages to, the vulnerability assessment;*
- *Serving as a blueprint for reducing potential losses identified in the Hazard Identification and Risk Assessment;*
- *Plan content flow from the risk assessment (problem identification) to goal setting to mitigation action development;*
- *An understanding of mitigation principles (diversity of actions that include structural projects, preventative measures, outreach activities, property protection measures, post-disaster actions, etc.);*
- *Specific mitigation actions for each participating jurisdictions that reflects their unique risks and capabilities;*
- *Integration of mitigation actions with existing local authorities, policies, programs, and resources; and*
- *Discussion of existing programs (including the NFIP), plans, and policies that could be used to implement mitigation, as well as document past projects.*

Element D: Plan Update, Evaluation, and Implementation (*Plan Updates Only*)

How does the Plan go above and beyond minimum requirements to document the 5-year Evaluation and Implementation measures with respect to:

- *Status of previously recommended mitigation actions;*
- *Identification of barriers or obstacles to successful implementation or completion of mitigation actions, along with possible solutions for overcoming risk;*
- *Documentation of annual reviews and committee involvement;*
- *Identification of a lead person to take ownership of, and champion the Plan;*
- *Reducing risks from natural hazards and serving as a guide for decisions makers as they commit resources to reducing the effects of natural hazards;*
- *An approach to evaluating future conditions (i.e., socio-economic, environmental, demographic, change in built environment etc.).*
- *Discussion of how changing conditions and opportunities could impact community resilience in the long term; and*
- *Discussion of how the mitigation goals and actions support the long-term community vision for increased resilience.*

B. Resources for Implementing Your Approved Plan

Ideas may be offered on moving the mitigation plan forward and continuing the relationship with key mitigation stakeholders such as the following:

- *What FEMA assistance (funding) programs are available (for example, Hazard Mitigation Assistance (HMA)) to the jurisdiction(s) to assist with implementing the mitigation actions?*
- *What other Federal programs (National Flood Insurance Program (NFIP), Community Rating System (CRS), Risk MAP, etc.) may provide assistance for mitigation activities?*
- *What publications, technical guidance or other resources are available to the jurisdiction(s) relevant to the identified mitigation actions?*
- *Are there upcoming trainings/workshops (Benefit-Cost Analysis (BCA), HMA, etc.) to assist the jurisdictions(s)?*
- *What mitigation actions can be funded by other Federal agencies (for example, U.S. Forest Service, National Oceanic and Atmospheric Administration (NOAA), Environmental Protection Agency (EPA) Smart Growth, Housing and Urban Development (HUD) Sustainable Communities, etc.) and/or state and local agencies?*

SECTION 3:
MULTI-JURISDICTION SUMMARY SHEET (OPTIONAL)

INSTRUCTIONS: For multi-jurisdictional plans, a Multi-jurisdiction Summary Spreadsheet may be completed by listing each participating jurisdiction, which required Elements for each jurisdiction were 'Met' or 'Not Met,' and when the adoption resolutions were received. This Summary sheet does not imply that a mini-plan be developed for each jurisdiction; it should be used as an optional worksheet to ensure that each jurisdiction participating in the Plan has been documented and has met the requirements for those Elements (A through E).

MULTI-JURISDICTION SUMMARY SHEET													
#	Jurisdiction Name	Jurisdiction Type (city/borough/ township/ village, etc.)	Plan POC	Mailing Address	Email	Phone	Requirements Met (Y/N)					
							A. Planning Process	B. Hazard Identification & Risk Assessment	C. Mitigation Strategy	D. Plan Review, Evaluation & Implementation	E. Plan Adoption	F. State Require-ments
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												

MULTI-JURISDICTION SUMMARY SHEET													
#	Jurisdiction Name	Jurisdiction Type (city/borough/ township/ village, etc.)	Plan POC	Mailing Address	Email	Phone	Requirements Met (Y/N)					
							A. Planning Process	B. Hazard Identification & Risk Assessment	C. Mitigation Strategy	D. Plan Review, Evaluation & Implementation	E. Plan Adoption	F. State Require-ments
13												
14												
15												
16												
17												
18												
19												
20												

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APPENDIX E – Critical Facilities

FACILITY TYPE	UNICORPORATED	INCORPORATED CITIES	TOTAL FACILITIES
Airports	4	12	16
Animal Shelters	3	7	10
CHP Stations	1	7	8
Communication Infrastructure	Facilities: 1 Server Sites: 8	Facilities: 60 Server Sites: 892	Facilities: 61 Server Sites: 900
Correctional Facilities (Jails/Prisons)	4	4	8
Dams/Debris Basins	12	59	71
Department Operations Centers	0	7	7
Educational Institutions	-	-	641
Emergency Operations Centers	2	54	56
Fairgrounds	1	2	3
Federal Military Installations	2	0	2
Fire Stations	41	94	135
Hazmat Facilities	1,872	6,117	7,989
Law enforcement Facilities	4	24	28
Medical Facilities	1	17	18
National Guard Armories	0	4	4
Public Utilities/Public Works	9	56	65
Rail Yards/Train Stations	1	8	9
Shelters (Mass Care)	-	-	~ 252

Note: The numbers reflected in each category may differ than total facilities listed on this page due to inclusion of some city owned facilities.

Shelter numbers are an estimate. May not include Red Cross shelters, Hospitals, Schools, or City operated facilities.

Airports

Name	Location
Banning Municipal Airport	Banning
Bermuda Dunes	Bermuda Dunes
Blythe Airport	Riverside
Chiriaco Summit Airport	Indio
Corona Municipal Airport (US Army of Corp Engineers)	Corona
Desert Center Airport	Desert Center
Flabob Airport	Riverside
French-Valley Airport	French Valley
Hemet-Ryan Airport	Hemet
Jacqueline Cochran Regional Airport	Thermal
March Air Reserve Base	Moreno Valley
Palm Springs International Airport	Palm Springs
Perris Valley Airport	Perris
Rice Army Airfield	Rice (Blythe Area)
Riverside Municipal Airport	Riverside
W.R. Bryon Airport (Closed)	Blythe

Animal Shelters

Name	Location
Animal Friends of the Valleys	Wildomar
Blythe Animal Shelter	Blythe
Coachella Valley Animal Campus	Thousand Palms
Corona Animal Shelter	Corona
Moreno Valley Animal Shelter	Moreno Valley
Norco Animal Control Shelter	Norco
Palm Springs Animal Shelter	Palm Springs
Ramona Humane Society	San Jacinto
San Jacinto Animal Campus	San Jacinto
Western Riverside County/City Animal Shelter	Jurupa Valley

CHP Stations

Name	Location
California Highway Patrol - Blythe	Blythe
California Highway Patrol - Banning	Banning
California Highway Patrol - Indio	Indio
California Highway Patrol - Beaumont	Beaumont
California Highway Patrol - Temecula	Temecula
California Highway Patrol - Riverside	Riverside
California Highway Patrol - Morongo Basin	Joshua Tree
California Highway Patrol - Temecula	Temecula

Communication Infrastructure

Name	Location
Alessandro	Riverside
Billy Goat	Aguanga
Box Canyon	Desert Center
Arlington	Riverside
Avocado Flats	Fallbrook
Banning	Banning
Big Maria	Blythe
Quail Mesa	Parker
Black Eagle	Desert Center
Black Jack	Desert Center
Black Rock	Blythe
Blue Mountain	Colton
Blythe	Blythe
Box Springs	Riverside
Brookside	Beaumont
Cactus City	Indio
Cajalco	Corona
Chuckawalla	Desert Center
Clinton Keith	Murrieta
Corn Springs	Desert Center
Corona	Corona
Corona\Buena Vista	Corona

Edom Hill	Desert Hot Springs
El Cariso	Lake Elsinore
Elsinore Peak	Lake Elsinore
Elsinore Peak	Lake Elsinore
Elsinore Peak Generator Building	Lake Elsinore
Estelle Mountain	Perris
Glen Avon	Riverside
Gold Crown (Pinto) Eliminated	Eliminated
Green River	Corona
Hemet	Hemet
Hidden Valley	Parker
Homeland	Homeland
Indio	Indio
Indio Hill	Indio
Iron Mountain	Earp
Joshua Tree	Joshua Tree
JTNP - Belle	Joshua Tree National Park
JTNP - Cottonwood Eliminated	Desert Center
JTNP - Lost Horse Eliminated	Eliminated
Lake Hemet	Mountain Center
Lake Matthews	Riverside
Lake Riverside	Aguanga
Leona	Perris
Line	Mecca
Margarita	Temecula
Marion Ridge	Idyllwild
Marshell	Perris
Mead Valley	Perris
Mecca Landfill	Desert Center
Menifee	Menifee
Morongo	Cabazon
Mt. David	Beaumont
North Mt.	San Jacinto
Palen McCoy	Desert Center
Palo Verde	Ripley

Paradise	Norco
Beacon Hill	Norco
Perris	Perris
Pleasants Peak ELIMINATED	Corona
Quail Valley	Quail Valley
Rancho Carillo/ Caspers Park	Lake Elsinore
Ranger Peak	Idyllwild
Red Mountain	Hemet
Redondo Mesa	Murrieta
Rice	Desert Center
Ridge Road	Lake Elsinore
Riverside CAC	Riverside
Road 62	Desert Center
Road 177	Desert Center
Santa Rosa Peak	Mountain Center
Santiago Peak	Corona
Snow Peak	Morongo Valley
Sunnyslope	Riverside
Temescal	Corona
Timoteo	Moreno Valley
Toro Peak	Mountain Center
Vaquero	Temecula
Vidal Junction	Earp
Whitewater	Banning

Riverside County Owned Repeaters		
Repeater	**Location**	**Lat/Long**
Strawberry Peak	San Bernardino National Forest	34°13'55.02"N
Carbon Canyon	Chino Hills State Park	33°51'45.84"N
Santiago Peak	Cleveland National Forest	33°42'37.07"N
El Cariso	Cleveland National Forest	33°40'33.28"N
Elsinore Peak	Cleveland National Forest	33°36'9.00"N
Pine Cove	San Bernardino National Forest	33°44'44.00"N
Red Mountain	Moreno valley	33°37'48.09"N
Red Mountain	Sage	33°37'48.02"N
Box Springs	Box Springs Mountain	33°57'42.06"N
Mt David	Beaumont	33°54'50.87"N
Mt Edna	San Bernardino National Forest	33°52'44.06"N
Whitewater	Whitewater	33°55'28.56"N
Thomas Mountain	San Bernardino National Forest	33°37'11.09"N
Santa Rosa Peak	San Bernardino National Forest	33°32'42.33"N
Cactus City	Cactus City	33°40'40.31"N
Oasis	Bureau of Land Management	33°37'7.58"N
Chuckawalla	Chuckawalla	33°36'19.76"N
Black Rock	Black Rock Mountain	33°36'37.09"N
Big Maria	Big Maria Mountains	33°52'4.00"N

RCIT Servers	
Department	**Location**
Agricultural Commissioner	Riverside
Animal Services	Jurupa Valley
Animal Services	Thousand Palms
Animal Services	San Jacinto
Auditor-Controller	Riverside
Auditor-Controller	Riverside
Auditor-Controller	Riverside
Auditor-Controller	Riverside
BOS/COB/AAB	Riverside
COB/AAB	Riverside
District 1 Field Office CAC	Riverside
District 1 Field Office Lake Elsinore	Lake Elsinore
District 2 Field Office CAC	Riverside
District 3 Field Office CAC	Riverside
District 3 Field Office French valley	Murrieta
District 3 Field Office Hemet	Hemet
District 4 Field Office CAC	Riverside
District 4 Field Office Palm Desert	Palm Desert
District 4 Field Office Mecca	Mecca
District 5 Field CAC	Riverside
District 5 Field MoVal	Moreno Valley
District 5 Field Perris	Perris
County Counsel	Riverside
County Counsel	Riverside
County Counsel	Riverside
EDA	Riverside
EDA	Riverside
EDA	Riverside
EDA	Indio
EDA	Riverside
EDA	Riverside
EDA	Riverside
Emergency Management Department	Riverside

Emergency Management Department	Riverside
Emergency Management Department	Riverside
Environmental Health	Riverside
Environmental Health	Blythe
Environmental Health	Corona
Environmental Health	Hemet
Environmental Health	Indio
Environmental Health	Murrieta
Environmental Health	Palm Springs
Environmental Health	Riverside
Executive Office	Riverside
Fleet Services	Riverside
Human Resources	Riverside
Human Resources	Riverside
Human Resources	Riverside
Flood	Riverside
Office on Aging	Riverside
Parks	Riverside
Parks	Riverside
Probation	Riverside
Probation	Riverside
Probation	Riverside
Probation	Riverside
Probation	Riverside
Probation	Riverside
Probation	Riverside
Probation	Corona
Probation	San Jacinto
Probation	Murrieta
Probation	Murrieta
Probation	Perris
Probation	Banning
Probation	Palm Springs
Probation	Indio
Probation	Indio
Probation	Blythe
Probation	
Public Defender	

Public Defender	
Public Defender	Riverside
Public Defender	Indio
Purchasing	Riverside
Purchasing	Riverside
RCA	Riverside
RCA	Riverside
RCA	Riverside
RCIT - CAC 10th Floor	Riverside
RCIT - RC3	Riverside
RCIT - RCIC	Riverside
RCIT - Alessandro	Riverside
RCIT - Moreno Valley	Moreno Valley
RCIT - CAC Basement	Riverside
RCIT - Blythe	Blythe
RCIT - SWJC	Murrieta
RCIT - Hemet	Hemet
RCIT - Indio	Indio
RCIT - Perris	Perris
RCIT - RCRMC	Moreno Valley
RCIT - Elsinore	Lake Elsinore
RCIT - County Circle	Riverside
RCIT - Cabazon	Cabazon
Registrar of Voters (ROV)	Riverside
TLMA CAC	Riverside
TLMA CAC 12th floor	Riverside
TLMA CAC 14th floor	Riverside
TLMA CAC 8th floor	Riverside
TLMA CAC 9th floor	Riverside
TLMA Beaumont RY	Beaumont
TLMA Blythe RY	Blythe
TLMA Cajalco Code	Perris
TLMA Corona RY	Corona
TLMA French Valley Code	Murrieta
TLMA Hemet RY	Hemet
TLMA Idyllwild RY	Idyllwild
TLMA Murrieta RY	Murrieta

TLMA Palm Desert Permits	Palm Desert
TLMA Perris RY	Perris
TLMA Perris Chamber Code	Perris
TLMA San Jacinto Code	San Jacinto
TLMA Sky Valley RY	Desert Hot Springs
TLMA Thermal RY	Thermal
TLMA Trans Annex	Riverside
TLMA Washington Street	Riverside
Veteran Services	Riverside
Waste Management	Moreno Valley

Correctional Facilities

Name	City
California Rehabilitation Center	Norco
Chuckawalla Valley State Prison and Ironwood	Blythe
Ironwood State Prison	Blythe
Robert Presley Detention Center	Riverside
Larry D. Smith Correctional Facility	Banning
Indio Jail	Indio
Southwest Detention Center	Murrieta
Blythe Jail	Blythe

Dams and Debris Basins

Name	City
Alessandro	Riverside
Avenida Bermuda Detention Basin	La Quinta
Beaumont Mdp Det Bsn Stg.1	Beaumont
Belltown Market St. Sd Stg.1	Jurupa Valley
Box Springs	Riverside
Box Springs Dr Stg.3	Riverside
Buena Vista Ret Bsn Stg.1	San Jacinto
Cajalco Creek	Temescal Valley
Calle Tecate Detention Basin	La Quinta
Cat Creek Detention Basin	Palm Desert
Carrizo Creek Detention Basin	Palm Desert
Declez Retention	Glen Avon Heights
Diamond Valley Lake	Winchester
Diamond Valley Lake Fb	Winchester
Dunn Ranch	Anza
Eagle Canyon Debris Basin	Cathedral City
East Side Detention Dike No. 1	Thermal
East Side Detention Dike No. 2	Thermal
Eastside	
El Casco	Redlands
Fairmount Park	Riverside
Farrell Basin	Palm Springs
Foster	Idyllwild
Goodhart Can Dtn Bn	Winchester

Goodhart Can Dtn Bn	Hemet
Harrison Street	Riverside
Henry J Mills # 2	
Henry J Mills Res	Riverside
Hj Mills Reclam	
Indian Canyon Dbr Basin	Banning
Jurupa Basin	Ennis
Kayne St Sd And Basin	Jurupa Valley
Lake Hemet	Valle Vista
Lakeview	Juniper Flats/Nuevo
Lee Lake	Corona
Little Lake Mdp Basin	Hemet
Lowe Living Desert Detention Basin	Indian Wells
Mabey Canyon	Corona
Mary Street	Casa Blanca
Mathews	Corona
Mcvicker Canyon Basin	Lake Elsinore
Menifee Vy Palomar Basin B	Menifee
Metz Road Db	Perris
Mockingbird Can	Riverside
Montecito Ranch Brown Canyon Dbr Basin	Corona
Montecito Ranch Hunt Canyon Basin	Corona
Murrieta Vy I-215 Basin	Murrieta
Oak Street	Corona
Perris	Perris
Pigeon Pass	Sunnymead
Prado Dam	Orange
Prenda	Riverside
Quail Valley	Lake Elsinore
Railroad Canyon	Lake Elsinore
Robert A Skinner	Temecula
Rubidoux Retention Basin	Jurupa Valley
Skinner Clearwell	Temecula
Stewart Pk Retention Basin	Beaumont
Sunnymead Ranch	Sunnymead
Sycamore	Riverside
Tahchevah	Palm Springs
Tahquitz Cr Debris	Agua Caliente Reserv
Upper Bear Creek Detention Basin	La Quinta

Upper Living Desert Detention Basin	Indian Wells
Vail	Temecula
West Magnesia Debris Basin	Rancho Mirage
West Side Detention Dike No. 2	None
West Side Detention Dike No. 3	None
West Side Detention Dike No. 4	None
Wide Canyon	Fun Valley
Woodcrest	Riverside

Educational Institutions

Name	City
Cottonwood School	Aguanga
Hamilton High School	Anza
Anza Valley Christian School	Anza
Emmanuel Christian School	Anza
Banning High School	Banning
Central Elementary School	Banning
District Administration	Banning
Hemmerling Elementary School	Banning
Hoffer Elementary School	Banning
Maintenance, Operations & Transp.	Banning
Nicolet Middle School	Banning
Nicolet Middle School Athletic Fac.	Banning
Susan B. Coombs Intermediate School	Banning
Banning Rop	Banning
Milo P. Johnson Center (Hst)	Banning
Banning High School	Banning
Desert Edge High School	Banning
Twin Pines High School	Banning
Calvary Christian	Banning
Precious Blood School	Banning
Adult Education	Beaumont
Brookside Elementary School	Beaumont
Chavez Elementary School	Beaumont
Child Nutrition Services	Beaumont
District Office	Beaumont
El Paseo Alternate Learning Center	Beaumont
Glen View High School	Beaumont

Interim Site (Enrollment & Technology	Beaumont
Maintenance Yard and Operations	Beaumont
Mountain View Middle School	Beaumont
New Elementary (Anna Hause)	Beaumont
Palm Elementary School	Beaumont
San Gorgonio Athletic Field	Beaumont
San Gorgonio Middle School	Beaumont
Sundance Elementary School	Beaumont
Three Rings Ranch Elementary School	Beaumont
Tournament Hills Elementary School	Beaumont
Transportation Department	Beaumont
Wellwood Center	Beaumont
Beaumont Early Head Start State Presch.	Beaumont
Beaumont Head Start	Beaumont
Beaumont High School	Beaumont
Palm North Elementary	Beaumont
Childhelp School Of Village West	Beaumont
Blythe Middle School	Blythe
District Office	Blythe
Felix Appleby Elementary	Blythe
Head Start	Blythe
Maintenance & Transportation Facilities	Blythe
Margaret White Elementary School	Blythe
Palo Verde High School	Blythe
Ruth Brown Elementary School	Blythe
Twin Palms Alternative Education School	Blythe
Blythe Community School	Blythe
Palo Verde High School	Blythe
Ripley Center	Blythe
Adult Basic Education Center	Blythe
Child Development	Blythe
New Mesa Campus	Blythe
Temporary Needles Campus	Blythe
Vocational Facility-Welding Program	Blythe
Escuela De La Raza Unida	Blythe
New Cabazon Elementary School	Cabazon
Old Cabazon Elementary School	Cabazon
Mesa View Middle School	Calimesa
Hope Learning Academy	Canyon Lake

Agua Caliente Elementary School	Cathedral City
Cathedral City Elementary School	Cathedral City
Cathedral City High School	Cathedral City
James Workman Middle School	Cathedral City
Landau Elementary School	Cathedral City
Mount San Jacinto High School	Cathedral City
Nellie N. Coffman Middle School	Cathedral City
Rio Vista Elementary School	Cathedral City
Sunny Sands Elementary School	Cathedral City
Cathedral City High School	Cathedral City
Mt. San Jacinto Cont. High School	Cathedral City
Sunny Sands Elementary	Cathedral City
Calvary Christian School	Cathedral City
Beaumont High School	Cherry Valley
Cherry Valley Brethren Schools	Cherry Valley
Mountain View Academy	Cherry Valley
Cahuilla Desert Academy	Coachella
Ceaser Chavez Elementary School	Coachella
Coachella Adult Education	Coachella
Coral Mountain Academy	Coachella
District Storage Facility	Coachella
La Casas Day Care	Coachella
Palm View Elementary School	Coachella
Peter Pendleton Elementary School	Coachella
Tlaquepaque Head Start	Coachella
Valle Del Sol Elementary School	Coachella
Valley View Elementary School	Coachella
Coachella Community School	Coachella
Promenade Elementary School	Corona
Orange Grove High School	Corona
Buena Vista High School	Corona
Corona High School	Corona
Corona Regional Medical Center	Corona
Garretson Elementary	Corona
Jefferson Elementary	Corona
Home Gardens Elementary	Corona
Buena Vista High School	Corona
Centennial High School	Corona
Santiago High School	Corona

Luiseno Elementary	Corona
Raney Intermediate School	Corona
Jefferson Elementary School	Corona
Lincoln Alternative School	Corona
Chavez Elementary School	Corona
Corona High School	Corona
Corona High School	Corona
Auburndale Intermediate	Corona
Home Gardens Elementary	Corona
Santiago High School	Corona
Garretson Elementary	Corona
Wilson Elementary	Corona
Coronita Elementary	Corona
Centennial High School	Corona
Centennial High School	Corona
Centennial High School	Corona
Centennial High School	Corona
Centennial High School	Corona
Centennial High School	Corona
Centennial High School	Corona
Centennial High School	Corona
Stallings Elementary	Corona
Vincentia Elementary	Corona
Mckinley Elementary	Corona
Adams Elementary	Corona
Foothill Elementary	Corona
Franklin Elementary	Corona
Anthony Elementary	Corona
Orange Grove High School	Corona
Citrus Hills Intermediate	Corona
Parkridge School of the Arts	Corona
El Cerrito Middle School	Corona
Corona Fundamental	Corona
Barton Elementary	Corona
Orange Elementary	Corona
Temescal Valley Elementary	Corona
Corona Ranch Elementary	Corona
Coc - Rosa Parks Elementary School	Corona
Eisenhower Elementary School District	Corona

Harada Elementary School	Corona
Prado View Elementary School	Corona
Roosevelt High School	Corona
Coc - Roosevelt High School	Corona
Buena Vista High School	Corona
Riverheights Intermediate	Corona
Coc - Todd Elementary	Corona
Eastvale Elementary	Corona
Calvary Chapel Christian Academy	Corona
Children's Montessori Center	Corona
Christian Heritage	Corona
Corona Christian	Corona
Crossroads Christian Schools	Corona
Lisa Powell Ministries International	Corona
Magnolia Preschool & Kindergarten	Corona
Montessori School Of Corona	Corona
Olive Branch Christian Academy	Corona
St. Edward School	Corona
Eagle Mountain High School	Desert Center
Kaiser Intermediate School	Desert Center
Bubbling Wells Elementary School	Desert Hot Springs
C School Desert Hot Springs	Desert Hot Springs
Desert Hot Springs High School	Desert Hot Springs
Desert Springs Middle School	Desert Hot Springs
Edward L. Wenzlaff Elementary School	Desert Hot Springs
Julius Corsini Elementary School	Desert Hot Springs
Keystone School	Desert Hot Springs
Two Bunch Palms Elementary School	Desert Hot Springs
Community Children's Center	Desert Hot Springs
Acacia Middle School	Hemet
Bautista Creek Elementary	Hemet
Hemet Cal-Safe	Hemet
Hemet Comm School	Hemet
Hemet High School	Hemet
Image School Of Cosmetology	Hemet
Little Lake Elementary	Hemet
Santa Fe Middle School	Hemet
West Valley High School	Hemet
Valley Elem Comm Sch/Ca Family Life Ctr	Hemet

Bautista Creek Elementary School	Hemet
Cawston Elementary School	Hemet
Fruitvale Elementary School	Hemet
Harmony Elementary School	Hemet
Hemet Elementary School	Hemet
Jacob Wiens Elementary School	Hemet
Little Lake Elementary School	Hemet
Mcsweeny Elementary School	Hemet
Ramona Elementary School	Hemet
Valle Vista Elementary School	Hemet
Whittier Elementary School	Hemet
Winchester School	Hemet
Dartmouth Middle School	Hemet
Diamond Valley Middle School	Hemet
Santa Fe Middle School	Hemet
Hemet High School	Hemet
West Valley High School	Hemet
Alessandro High School	Hemet
Helen Hunt Jackson School	Hemet
H.E.L.P. School	Hemet
Tahquitz High School	Hemet
District Office	Hemet
Nutrition Center	Hemet
Professional Development Building	Hemet
Baptist Christian School	Hemet
Community Christian	Hemet
Crossroads New Life Educ. Ministries	Hemet
Fleet Adventure School	Hemet
Hemet Adventist Christian School	Hemet
Red Mountain Christian	Hemet
St. John's Lutheran	Hemet
Truth Christian Academy	Hemet
Idyllwild School	Idyllwild
Idyllwild Arts Academy	Idyllwild
Gerald Ford School	Indian Wells
Mountain Vista Elementary School	Indio
Amelia Earhart Elementary School	Indio
Amistad Continuation High School	Indio
Andrew Jackson Elementary School	Indio

Carrillo Ranch Elementary School	Indio
Dr. Carreon, Jr. Academy	Indio
Eisenhower Elementary School	Indio
Hoover Elementary School	Indio
Indio High School	Indio
Indio Middle School	Indio
James Monroe Elementary School	Indio
John Glenn Middle School	Indio
Johnson Elementary School	Indio
Kennedy Elementary School	Indio
Madison Elementary School	Indio
Martin Van Buren Elementary School	Indio
Roosevelt Elementary School	Indio
Thomas Jefferson Middle School	Indio
Woodrow Wilson Middle School	Indio
Amelia Earhart Elementary School	Indio
Indio Comm School/Day Treatment	Indio
Lyndon Johnson Elementary	Indio
Madison Elementary Mtu	Indio
Don F. Kenney Center	Indio
John Glenn Middle School	Indio
Lawrence F. Smith	Indio
Fountain Christian Academy	Indio
Grace Academy	Indio
Indio Christian Center Academy	Indio
Our Lady of Perpetual Help	Indio
Tom Plonski Christian School	Indio
Benjamin Franklin Elementary School	La Quinta
Colonel Mitchell Paige Middle School	La Quinta
District Education Center	La Quinta
Harry S. Truman Elementary School	La Quinta
John Adams Elementary School	La Quinta
La Quinta High School	La Quinta
La Quinta Middle School	La Quinta
Indio Juvenile Hall	La Quinta
La Quinta High School	La Quinta
La Quinta Christian Fellowship School	La Quinta
A Small World for Little People	Lake Elsinore
Ortega Cal Safe	Lake Elsinore

Temescal Canyon High School	Lake Elsinore
Alternative Education	Lake Elsinore
Butterfield Elementary	Lake Elsinore
Canyon Lake Middle School	Lake Elsinore
Cottonwood Canyon Elementary	Lake Elsinore
District Administrative Offices	Lake Elsinore
Earl Warren Elementary	Lake Elsinore
Elsinore Elementary	Lake Elsinore
Elsinore Middle	Lake Elsinore
Food Services & Warehouse	Lake Elsinore
Lakeland Village Middle School	Lake Elsinore
Lakeside High School	Lake Elsinore
Machado Elementary	Lake Elsinore
Maintenance & Operations	Lake Elsinore
Ortega High (Cont.)	Lake Elsinore
Railroad Canyon Elementary	Lake Elsinore
Rice Canyon Elementary	Lake Elsinore
Ronald Reagan Elementary School	Lake Elsinore
Temescal Canyon High	Lake Elsinore
Terra Cotta Middle	Lake Elsinore
Tuscany Hills Elementary	Lake Elsinore
Withrow Elementary	Lake Elsinore
Canyon Academy	Lake Elsinore
Lakeland Children's Center, Inc.	Lake Elsinore
Mecca School	Mecca
Nueva Vista Day Care	Mecca
Pie De La Cuesta Day Care	Mecca
Saul Martinez Elementary School	Mecca
Mecca Migrant Headstart Center	Mecca
Bell Mountain Middle School	Menifee
Callie Kirkpatrick Elementary School	Menifee
Chester W. Morrison Elementary School	Menifee
Maintenance, Operations & Transp.	Menifee
District Offices	Menifee
Evans Ranch Elementary	Menifee
Freedom Crest Elementary School	Menifee
Menifee District Preschool	Menifee
Menifee Elementary School	Menifee
Menifee Valley Middle School	Menifee

Ridgemoor Elementary School	Menifee
Wheatfield Park Gymnasium	Menifee
Paloma Valley High School	Menifee
Menifee Valley Middle School	Menifee
San Jacinto College - La Piedra Road	Menifee
Menifee Valley Campus	Menifee
Good Shepherd Lutheran	Menifee
On Track Distance Learning	Menifee
Revival Christian Academy	Menifee
Moreno Valley Community Hospital	Moreno Valley
Canyon Springs High School	Moreno Valley
March Mountain High School	Moreno Valley
Moreno Valley Comm School	Moreno Valley
Moreno Valley High	Moreno Valley
R.C.C. Moreno Valley Headstart	Moreno Valley
Valley View High School	Moreno Valley
Val Verde High School Cal-Safe	Moreno Valley
Victoriana	Moreno Valley
Red Maple Elementary	Moreno Valley
Vista Verde Middle School	Moreno Valley
Rancho Verde High School	Moreno Valley
El Potrero Elementary School	Moreno Valley
Lasselle Elementary School	Moreno Valley
March Middle School	Moreno Valley
Mary Mcleod Bethune Elementary School	Moreno Valley
Rainbow Ridge Elementary School	Moreno Valley
Rancho Verde High School	Moreno Valley
Red Maple Elementary School	Moreno Valley
Victoriano Elementary School	Moreno Valley
Vista Verde Middle School	Moreno Valley
Moreno Valley Campus	Moreno Valley
Moreno Valley District Office	Moreno Valley
Perris Operation Center	Moreno Valley
Arnold Heights Special School	Moreno Valley
Edgemont Elementary School	Moreno Valley
Midland Elementary School	Moreno Valley
Moreno Elementary School	Moreno Valley
Armada Elementary School	Moreno Valley
Sunnymead Elementary School	Moreno Valley

North Ridge Elementary School	Moreno Valley
Bear Valley Elementary School	Moreno Valley
Sunnymeadows Elementary School	Moreno Valley
Honey Hollow Elementary School	Moreno Valley
Registration Ctr/Facility Plan.	Moreno Valley
Butterfield Elementary School	Moreno Valley
Hendrick Ranch Elementary School	Moreno Valley
Serrano Elementary School	Moreno Valley
Cloverdale Elementary School	Moreno Valley
Sugar Hill Elementary School	Moreno Valley
Seneca Elementary School	Moreno Valley
Vista Heights Middle School	Moreno Valley
Creekside Elementary School	Moreno Valley
Hidden Springs Elementary School	Moreno Valley
Box Springs Elementary School	Moreno Valley
Mountain View Middle School	Moreno Valley
Rainbow Springs/Moreno Valley Us	Moreno Valley
Badger Springs Middle School	Moreno Valley
Sunnymead Middle School	Moreno Valley
Towngate Elementary School	Moreno Valley
Ridge Crest Elementary School	Moreno Valley
Landmark Middle School	Moreno Valley
Palm Middle School	Moreno Valley
Canyon Springs High School	Moreno Valley
Moreno Valley High School	Moreno Valley
Vista Del Lago High School	Moreno Valley
March Valley High Special School	Moreno Valley
Calvary Chapel Christian	Moreno Valley
Cornerstone Fellowship Academy	Moreno Valley
Country Day School	Moreno Valley
Kings Chapel Christian Academy	Moreno Valley
Monarch Academy	Moreno Valley
Moreno Valley Christian	Moreno Valley
Morning Dove Christian	Moreno Valley
Valley Adventist Christian	Moreno Valley
Valley Christian Academy	Moreno Valley
Morning Sky Residential	Mountain Center
Oak Meadows Elementary School	Murrieta
Alta Murrieta Elementary School	Murrieta

Antelope Hill Elementary School	Murrieta
Avaxat Elementary School	Murrieta
Cole Canyon Elementary School	Murrieta
Creekside Alternative High School	Murrieta
Daniel N Buchanan Elementary School	Murrieta
District Support Facility	Murrieta
E Hale Curran Elementary School	Murrieta
Lisa J. Mails Elementary	Murrieta
Monte Vist Elementary School	Murrieta
Murrieta Elementary School	Murrieta
Murrieta Valley High School	Murrieta
Rail Ranch Elementary School	Murrieta
Shivela Middle School	Murrieta
Tovashal Elementary School	Murrieta
Vista Murrieta High School	Murrieta
Warm Springs Middle School	Murrieta
Murrieta Valley High School	Murrieta
Warm Spring Middle School	Murrieta
Riverside Coe - South County Building	Murrieta
Southwest Juvenile Hall	Murrieta
Alamos Elementary School	Murrieta
Bella Vista Middle School	Murrieta
Calvary Chapel Christian Schools	Murrieta
Las Brisas Christian Academy	Murrieta
Morningstar Christian Academy	Murrieta
Murrieta Springs Adventist Christian	Murrieta
Murrieta Valley Christian Academy	Murrieta
Murrieta Valley Christian School	Murrieta
Oak Grove Institute-Jack Weaver	Murrieta
Sierra Springs Christian	Murrieta
Corona Norco Usd-Rcc	Norco
Norco High School	Norco
Norco Campus	Norco
Washington Elementary School	Norco
Victress Bower School	Norco
Norco Elementary	Norco
Norco High School	Norco
Highland Elementary	Norco
Norco Intermediate	Norco

Sierra Vista Elementary	Norco
Riverview Elementary	Norco
Administration Building	Norco
John F. Kennedy High School	Norco
Church on the Hill Christian Kindergart.	Norco
New Life Christian School	Norco
Precious Cargo Christian Academy	Norco
Town And Country Day School	Norco
District Office	Nuevo
Mountain Shadows Middle School	Nuevo
Nuview Bridge Early College High School	Nuevo
Nuview Elementary School	Nuevo
Valley View Elementary School	Nuevo
Nuview Elementary	Nuevo
Grace Preparatory	Nuevo
Carter Elementary School	Palm Desert
Country Club	Palm Desert
Lincoln Elementary School	Palm Desert
Palm Desert High School	Palm Desert
Palm Desert Middle School	Palm Desert
Wallaroo Children's Center	Palm Desert
Washington Charter Elementary School	Palm Desert
College of the Desert	Palm Desert
Gerald Ford Elementary	Palm Desert
James Carter Elementary	Palm Desert
Lincoln Elementary	Palm Desert
Palm Desert High	Palm Desert
San Cayetano Community School	Palm Desert
College of the Desert	Palm Desert
Desert Adventist School	Palm Desert
Jewish Community School of the Desert	Palm Desert
Montessori School of the Desert	Palm Desert
Montessori School of the Valley	Palm Desert
Oasis Preparatory School, The	Palm Desert
Palm Desert Learning Tree Center	Palm Desert
Sacred Heart	Palm Desert
St. Margaret's Episcopal	Palm Desert
Baristo Site	Palm Springs
Cahuilla Elementary School	Palm Springs

Cielo Vista Elementary	Palm Springs
District Office	Palm Springs
District Office Annex	Palm Springs
Katherine Finchy Elementary School	Palm Springs
Palm Springs Adult School	Palm Springs
Palm Springs High School	Palm Springs
Ramon Academy	Palm Springs
Raymond Cree Middle School	Palm Springs
Service Center	Palm Springs
Vista Del Monte Elementary School	Palm Springs
Champion Institute	Palm Springs
Desert Highland Park	Palm Springs
Katherine Finchy Elementary School	Palm Springs
Palm Springs Comm School	Palm Springs
Palm Springs High School	Palm Springs
Desert Chapel Christian	Palm Springs
King's Schools of The Desert	Palm Springs
Montessori Elem. School of Palm Springs	Palm Springs
Montessori School of Palm Springs	Palm Springs
St. Theresa	Palm Springs
District Office	Perris
Enchanted Hills Elementary School	Perris
Food Services	Perris
Good Hope Elementary School	Perris
Maintenance and Operations (Warehouse)	Perris
Nan Sanders Elementary School	Perris
Palms Elementary School	Perris
Park Avenue Elementary School	Perris
Perris Elementary School	Perris
Railway Elementary School	Perris
Reiner Children & Families Dev. Center	Perris
Skyview Elementary School	Perris
A Street Educational Complex	Perris
Choice 2000	Perris
Cmi/The Learning Skills Center	Perris
District Office	Perris
Maintenance	Perris
Old Administration Site - Leased By Co.	Perris
Perris High School	Perris

Perris Lake High School	Perris
Pinacate Middle School	Perris
The Academy	Perris
Reiner Children & Families Dev. Center	Perris
Perris Cal-Safe	Perris
Perris High School	Perris
Enchanted Hills Elementary	Perris
Nan Sanders Elementary School	Perris
Palms Elementary School	Perris
Perris Head Start	Perris
Val Verde Regional Learning Center	Perris
Citrus Hills High School	Perris
Val Verde High School Cal-Safe	Perris
Avalon Elementary School	Perris
Citrus Hill High School	Perris
Columbia Elementary School	Perris
District Office	Perris
Education Center	Perris
Glen View Pre-School	Perris
Lakeside Middle School	Perris
Manuel Real Elementary School	Perris
Mead Elementary School	Perris
Old Val Verde High School Site	Perris
Sierra Vista Elementary School	Perris
Student Success Academy Site	Perris
Tomas Rivera Middle School	Perris
Triple Crown Elementary School	Perris
Val Verde Elementary School	Perris
Val Verde High School	Perris
California Ranch	Perris
Gb Learning Center	Perris
Lighthouse Christian Academy	Perris
Oak Grove at The Ranch	Perris
Praise Fellowship Christian Academy	Perris
St. James Catholic School	Perris
Temple Christian Schools	Perris
Rancho Mirage Elementary School	Rancho Mirage
Marywood-Palm Valley School	Rancho Mirage
Alvord High School	Riverside

Arizona Middle School	Riverside
Arlanza Elementary School	Riverside
Child Nutrition Center	Riverside
CHRISTA Mcauliff ELEMENTARY SCHOOL	Riverside
Collett Elementary School	Riverside
District Office	Riverside
Food Service Center	Riverside
Foothill Elementary School	Riverside
Instructional Support Service	Riverside
La Granada Elementary School	Riverside
La Sierra High School	Riverside
Lake Hills Elementary School	Riverside
Loma Vista Middle School	Riverside
Myra Elementary School	Riverside
Norte Vista High School	Riverside
Orrenmaa Elementary School	Riverside
Philip M. Stokoe Elementary School	Riverside
Rosemary Kennedy Elementary School	Riverside
Student Service Center	Riverside
Terrace Elementary School	Riverside
Twinhill Elementary School	Riverside
Valley View Elementary School	Riverside
Villegas Middle School	Riverside
Wells Middle School	Riverside
Camino Real Elementary School	Riverside
District Offices	Riverside
Glen Avon Elementary School	Riverside
Granite Hill Elementary School	Riverside
Ina Arbuckle Elementary School	Riverside
Indian Hills Elementary School	Riverside
Jurupa Middle School	Riverside
Jurupa Valley High School	Riverside
Learning Center	Riverside
Maintenance And Bus Garage	Riverside
Mira Loma Middle School	Riverside
Mission Bell Elementary School	Riverside
Mission Middle School	Riverside
Nueva Vista Continuation High School	Riverside
Pacific Avenue Elementary School	Riverside

Patriot High School	Riverside
Pedley Elementary School	Riverside
Peralta Elementary School	Riverside
Rio Vista Continuation High School	Riverside
Rubidoux High School	Riverside
Rustic Lane Elementary School	Riverside
Sky Country Elementary School	Riverside
Stone Avenue Elementary School	Riverside
Sunnyslope Elementary School	Riverside
Training And Support Services Center	Riverside
Training And Support Services South	Riverside
Troth Street Elementary School	Riverside
Van Buren Elementary School	Riverside
West Riverside Elementary School	Riverside
Thompson Middle School	Riverside
Arlanza Elementary	Riverside
Collett Elementary	Riverside
F.H. Butterfield School	Riverside
Foothill Elementary	Riverside
La Granada/Rosemary Kennedy Elementary	Riverside
La Sierra Community School	Riverside
La Sierra High School	Riverside
Norte Vista High	Riverside
Ysmael Villages	Riverside
Arlington Regional Learning Center	Riverside
Bryant Park	Riverside
Casa Blanca Head Start	Riverside
Digital Production Services	Riverside
Grindstaff Center	Riverside
Jurupa Community School	Riverside
Glen Avon Elementary	Riverside
Ina Arbuckle - East	Riverside
Jurupa Middle School	Riverside
Nueva Vista Cal-Safe	Riverside
Rubidoux High School	Riverside
Market Street Property	Riverside
Rcoe/District Administration Facilities	Riverside
Rcoe/Maintenance & Warehouse	Riverside
Recovery Opportunity Center	Riverside

Riverside Cal-Safe	Riverside
Riverside Community School	Riverside
Riverside Day Treatment	Riverside
Arlington High School	Riverside
Bobby Bonds Center	Riverside
Educational Op Center	Riverside
Grant Elementary School	Riverside
North High School	Riverside
Polytechnic High School	Riverside
Ramona High School	Riverside
Riverside Culinary Arts Academy	Riverside
Robert Presley Detention Center	Riverside
Robert Presley Detention Center	Riverside
Safehouse Community School	Riverside
Sherman Indian High School	Riverside
Van Horn Youth Center	Riverside
Vi Library	Riverside
West County Elem Community School	Riverside
Adams Elementary School	Riverside
Alcott Elementary School	Riverside
Amelia Earhart Middle School	Riverside
Bryant Elementary School	Riverside
Castleview Elementary School	Riverside
Central Middle School	Riverside
Chemawa Middle School	Riverside
District Administration	Riverside
Educational Options Center	Riverside
Emerson Elementary School	Riverside
Franklin Elementary School	Riverside
Fremont Elementary School	Riverside
Grant Elementary School	Riverside
Harrison Elementary School	Riverside
Hawthorne Elementary School	Riverside
Highgrove Elementary School	Riverside
Highland Elementary School	Riverside
Hyatt Elementary School	Riverside
Jackson Elementary School	Riverside
Jefferson Elementary School	Riverside
Kennedy Elementary School	Riverside

Lake Matthews Elementary	Riverside
Liberty Elementary School	Riverside
Lincoln Continuation High School	Riverside
Longfellow Elementary School	Riverside
Madison Elementary School	Riverside
Magnolia Elementary School	Riverside
Maintenance & Operation Facility	Riverside
Martin Luther King High School	Riverside
Matthew Gage Middle School	Riverside
Monroe Elementary School	Riverside
Mountain View Elementary School	Riverside
Nutrition Center	Riverside
Pachappa Elementary School	Riverside
Poly High School	Riverside
Ramona High School	Riverside
Riverside Adult School	Riverside
Sierra Middle School	Riverside
Sunshine School/Project Team	Riverside
Taft Elementary School	Riverside
Tomas Rivera Elementary School	Riverside
University Middle School	Riverside
Victoria Elementary School	Riverside
Washington Elementary School	Riverside
Woodcrest Elementary School	Riverside
Alumni House	Riverside
Riverside City Campus	Riverside
All Saints' Carden Academy	Riverside
Bethel Christian Schools	Riverside
Big Springs	Riverside
Calvary Chapel Jurupa Valley Christian	Riverside
Cottonwood Montessori	Riverside
Growing Place	Riverside
Harvest Christian	Riverside
Hawarden Hills Academy	Riverside
Immanuel Baptist School	Riverside
Immanuel Lutheran Elementary	Riverside
Islamic Academy of Riverside	Riverside
La Sierra Academy	Riverside
Mira Loma Christian School	Riverside

Montessori Academy	Riverside
Montessori Children's House	Riverside
Mt. Zion Academy	Riverside
Notre Dame High	Riverside
Olive Tree Christian	Riverside
Our Lady of Perpetual Help	Riverside
Riverside Christian Day	Riverside
Riverside Christian Schools	Riverside
Riverside Montessori Academy	Riverside
Riverside Preparatory Academy	Riverside
Saint Catherine of Alexandria School	Riverside
Somerset Academy	Riverside
Somerset Educational Services	Riverside
St. Francis De Sales School	Riverside
St. Joseph's	Riverside
St. Paul Lutheran	Riverside
St. Thomas the Apostle School	Riverside
Temple Beth El Child Development Center	Riverside
Vineyard Christian	Riverside
Woodcrest Christian	Riverside
Woodcrest Montessori Education Center, I	Riverside
Heritage High School	Romoland
Boulder Ridge Elementary School	Romoland
Harvest Valley Elementary School	Romoland
Romoland Elementary School	Romoland
Mt San Jacinto Learning Center	San Jacinto
San Jacinto College - State Street	San Jacinto
San Jacinto Elementary	San Jacinto
San Jacinto High School	San Jacinto
Valley Community School	San Jacinto
De Anza Elementary School	San Jacinto
District Office	San Jacinto
Estudillo Elementary School	San Jacinto
Food Services	San Jacinto
Headstart/Preschool	San Jacinto
Hyatt Elementary School	San Jacinto
Monte Vista Middle School	San Jacinto
Mot Facility	San Jacinto
Mountain View High School	San Jacinto

North Mountain Middle School	San Jacinto
Old District Office	San Jacinto
Old Mot Site	San Jacinto
Park Hill Elementary School	San Jacinto
Record Elementary School	San Jacinto
San Jacinto Elementary School	San Jacinto
San Jacinto Campus	San Jacinto
San Jacinto Valley Academy	San Jacinto
Alpha Omega Christian	San Jacinto
Calvary Chapel San Jacinto Christian	San Jacinto
Noli Indian School	San Jacinto
St. Hyacinth Academy	San Jacinto
St. Jude School	San Jacinto
Extended Learning Center	Sun City
His Light Christian Academy	Sun City
Master's Hands Christian School	Sun City
Oliver Christian School Center	Sun City
Temecula Community School	Temecula
French Valley Elementary	Temecula
Temecula Elementary	Temecula
Ysabel Barnett Elementary School	Temecula
Earl Gardner Middle School	Temecula
Nicholas Valley Elementary	Temecula
Royale College Of Beauty	Temecula
Vail Ranch Middle School	Temecula
Chapparral High School	Temecula
Paloma Elementary	Temecula
Temecula Valley High School	Temecula
Abby Reinke Elementary School	Temecula
Chaparral High School	Temecula
Crowne Hill Elementary School	Temecula
District Facilities	Temecula
District Maintenance & Transp. Facility	Temecula
Erle Stanley Gardner Middle School	Temecula
Great Oak High School	Temecula
Helen Hunt Jackson Elementary	Temecula
James L. Day Middle School	Temecula
Joan F. Sparkman Elementary School	Temecula
Margarita Middle School	Temecula

Nicolas Valley Elementary School	Temecula
Paloma Elementary School	Temecula
Pauba Valley Elementary School	Temecula
Rancho Elementary School	Temecula
Rancho Vista High School	Temecula
Red Hawk Elementary School	Temecula
Temecula Elementary School	Temecula
Temecula Luiseno Elementary School	Temecula
Temecula Middle School	Temecula
Temecula Valley High School	Temecula
Tony Tobin Elementary School	Temecula
Vail Elementary School	Temecula
Vintage Hills Elementary	Temecula
Ysabel Barnett Elementary School	Temecula
Discovery Isle Child Development Center	Temecula
Faith Christian Academy	Temecula
Hillcrest Academy	Temecula
La Petite Academy	Temecula
Liberty High	Temecula
Linfield Christian School	Temecula
Mountain View Christian School	Temecula
Mulberry Child Care & Preschool	Temecula
Pechanga School	Temecula
Rancho Community Christian	Temecula
Saint Jeanne De Lestonnac	Temecula
Temecula Christian School	Temecula
Temecula Montessori Academy	Temecula
Van Avery Prep	Temecula
John Kelley Elementary	Thermal
La Familia Continuation High	Thermal
Coachella Valley High School Ag. Farm	Thermal
Coachella Valley High School Athletic	Thermal
Coachella Valley High School	Thermal
Desert Mirage High School	Thermal
District Administration	Thermal
District M.O.T.	Thermal
John Kelley Elementary School	Thermal
John Kelley West	Thermal
La Familia Continuation High School	Thermal

Las Palmitas Elementary School	Thermal
Oasis Elementary School	Thermal
Toro Canyon Middle School	Thermal
Coachella Valley Hs Transportation	Thermal
Westside Elementary School	Thermal
Desert Mirage High School	Thermal
Coachella Valley High School	Thermal
John Kelley Middle School	Thermal
Toro Canyon Middle School	Thermal
Della S. Lindley Elementary	Thousand Palms
Xavier College Preparatory High School	Thousand Palms
Advanced Educ. Services-Whitewater High	Whitewater
Grace Christian Learning Center	Whitewater
Brown (David A.) Middle School	Wildomar
Graham (Donald) Elementary	Wildomar
Elsinore High School	Wildomar
Hayman (Jean) Elementary	Wildomar
Wildomar Elementary	Wildomar
Collier (William C.) Elementary	Wildomar
Brown (David A.) Middle	Wildomar
Collier (William C.) Elementary	Wildomar
Elsinore High	Wildomar
Graham (Donald) Elementary	Wildomar
Hayman (Jean) Elementary	Wildomar
Transportation Center	Wildomar
Anne Sullivan Nursery and Kindergarten	Wildomar
Bundy Canyon Christian	Wildomar
California Lutheran High	Wildomar
Cornerstone Christian	Wildomar
Faith Baptist Academy	Wildomar

Emergency Operations Centers

Name	City
City Of Banning City Hall	Banning
City Of Banning EOC	Banning
City Of Banning Alt EOC	Banning
City Of Beaumont EOC (Police Dept)	Beaumont
City Of Beaumont Alt EOC (City Hall)	Beaumont
City Of Blythe Alt EOC (Public Works)	Blythe
City Of Blythe EOC (Blythe City Hall)	Blythe
City Of Calimesa EOC - Main EOC	Calimesa
City Of Calimesa EOC - EOC Annex	Calimesa
City Of Canyon Lake Alt EOC (City Hall)	Canyon Lake
City Of Canyon Lake EOC (Fs #60)	Canyon Lake
City Of Cathedral City EOC (Fs #412)	Cathedral City
City Of Corona EOC	Corona
City Of Corona Alt EOC (City Hall)	Corona
City Of Desert Hot Springs EOC (Police)	Desert Hot Springs
City Of Hemet EOC (Pw/Fire Admin Bldg)	Hemet
City Of Hemet Alt EOC (Simpson Center)	Hemet
City Of Indian Wells Alt EOC (City Hall)	Indian Wells
City Of Indian Wells EOC	Indian Wells
County Of RIVERSIDE ALT EOC (INDIO)	Indio
City Of Indio EOC (Indio Senior Center)	Indio
City Of La Quinta EOC (City Hall)	La Quinta
City Of Lake Elsinore EOC (Sheriff Dept)	Lake Elsinore
City Of Lake Elsinore Alt EOC (Fs #85)	Lake Elsinore
City Of Lake Elsinore Alt EOC(City Hall)	Lake Elsinore
City Of Moreno Valley EOC (Police Bldg)	Moreno Valley
City Of Moreno Valley Alt EOC(City Hall)	Moreno Valley
City Of Murrieta Alt EOC (Fs #1)	Murrieta
City Of Murrieta EOC (Police Dept)	Murrieta
City Of Norco EOC (Norco Fd Hq)	Norco
City Of Palm Desert Alt EOC (Corp Yard)	Palm Desert
City Of Palm Desert EOC (Civic Ctr Pw)	Palm Desert
City Of Palm Springs EOC (City Hall)	Palm Springs
City Of Perris Alt EOC (Glass Gymnasium)	Perris
City Of Perris EOC (Perris Senior Ctr)	Perris
City Of Rancho Mirage EOC	Rancho Mirage

County Of RIVERSIDE EOC	Riverside
City Of Riverside EOC	Riverside
City Of San Jacinto EOC (Police Dept)	San Jacinto
City Of Temecula City Hall	Temecula
City Of Temecula Alt EOC (Comm Rec Ctr)	Temecula
City Of Temecula EOC (Fs #84)	Temecula

Fairgrounds

Name	City
Lake Perris Fairgrounds	Perris, CA 92571
Riverside County Fairgrounds	Indio, CA 92201
Colorado River Fairgrounds	Blythe, CA 92225

Federal Military Installations

Name	City
March Air Reserve Base	Moreno Valley
Naval Warfare Assessment Station	Norco
Navy Marine Corp Reserve Center	Riverside

Fire Stations

Name	City
77 - LAKE RIVERSIDE FS RVC	Aguanga
USFS - CNF - Dripping Springs Station 37	Aguanga
29 - ANZA FS CAL FIRE\RVC	Anza
USFS - BDF - Tripp Flats Station 53	Anza
278 - MORONGO STN 278	Banning
63 - POPPET FLATS FS RVC	Banning
89 - BANNING CITY FS RVC	Banning
USFS - BDF - Banning Station 35	Banning
20 – BEAUMONT\West Banning FS RVC	Beaumont
66 - BEAUMONT CITY FS RVC	Beaumont
Blythe Fire Department	Blythe
43 – Blythe FS RVC	Blythe
45 - Blythe Air Base FS RVC	Blythe
46 - River Bend FS RVC	Blythe
24 - CABAZON FS RVC	Cabazon

USFS - BDF - Cabazon Station 50	Cabazon
21- Calimesa RVC	Calimesa
60 – Canyon Lake RVC	Canyon Lake
CATHEDRAL CITY FS # 1 (#411)	Cathedral City
CATHEDRAL CITY FS # 2 (#412)	Cathedral City
CATHEDRAL CITY FS # 3 (#413)	Cathedral City
22 - CHERRY VALLEY FS RVC	Cherry Valley
79 – Coachella RVC	Coachella
CORONA FS#7 (Temescal Public Safety Fac)	Corona
13 - HOME GARDENS FS RVC	Corona
64 - SYCAMORE CREEK FS RVC	Corona
CORONA CITY FS # 1	Corona
CORONA CITY FS # 2	Corona
CORONA CITY FS # 3	Corona
CORONA CITY FS # 4	Corona
CORONA CITY FS # 5	Corona
CORONA CITY FS # 6	Corona
USFS - CNF - Corona Station 21	Corona
USFS - CNF - Temescal Station 22	Corona
49 - LAKE TAMARISK FS RVC	Desert Center
37 - DESERT HOT SPRINGS FS RVC	Desert Hot Springs
56 - SKY VALLEY FS RVC	Desert Hot Springs
36- Skyborne RVC	Desert Hot Springs
27 - EAST VAIL FS RVC	Eastvale
31-Chandler RVC	Eastvale
Helitack/Air Attack Base - Ryan Field CAL FIRE	Hemet
HEMET CITY FS # 1	Hemet
HEMET CITY FS # 2	Hemet
HEMET CITY FS # 3	Hemet
HEMET CITY FS # 4	Hemet
HEMET CITY FS # 5	Hemet
26 - LITTLE LAKE FS RVC	Hemet
28 - SAGE FS CAL FIRE\RVC	Hemet
72 - VALLE VISTA FS RVC	Hemet
USFS - BDF – Cranston Station 54	Hemet
23 - PINE COVE FS RVC	Idyllwild
621 - IDYLLWILD FPD STN 621	Idyllwild
55 - INDIAN WELLS FS RVC	Indian Wells
80 - SHADOW HILLS (INDIO STN 4) FS RVC	Indio

86 - INDIO # 1 FS RVC	Indio
87 - INDIO # 2 FS Terra Lago RVC	Indio
88 - INDIO # 3 FS West Indio RVC	Indio
16 - PEDLEY FS RVC	Jurupa Valley
17 – Glen Avon RVC	Jurupa Valley
18 - WEST RIVERSIDE FS CAL FIRE RVC	Jurupa Valley
32 - LA QUINTA FS RVC	La Quinta
70 - LA QUINTA SOUTH FS RVC	La Quinta
93 - LA QUINTA NORTH FS RVC	La Quinta
10 - ELSINORE FS CAL FIRE	Lake Elsinore
11 - LAKELAND VILLAGE FS RVC	Lake Elsinore
51 - EL CARISO FS RVC	Lake Elsinore
74 - RANCHO CAPISTRANO FS RVC	Lake Elsinore
85 - MCVICKER PARK FS RVC	Lake Elsinore
94 - CANYON HILLS FS RVC	Lake Elsinore
97 – Rosetta Canyon RVC	Lake Elsinore
USFS - CNF - El Cariso Station 23	Lake Elsinore
40 - MECCA FS RVC	Mecca
68 - MENIFEE FS RVC	Menifee
76 - MENIFEE LAKES FS RVC	Menifee
5 - Quail Valley RVC	Menifee
7 – Sun City RVC (Opening in Fall of 2017)	Menifee
02 - SUNNYMEAD FS RVC	Moreno Valley
06 - EDGEMONT FS RVC	Moreno Valley
48 - SUNNYMEAD RANCH FS RVC	Moreno Valley
58 - MORENO FS (NEW) RVC	Moreno Valley
65 - KENNEDY PARK FS RVC	Moreno Valley
91 - COLLEGE PARK FS RVC	Moreno Valley
99 – Morrison RVC	Moreno Valley
30 - PINYON FS RVC	Mountain Center
53 - GARNER VALLEY FS RVC	Mountain Center
USFS - BDF - Kenworthy Station 52	Mountain Center
USFS - BDF -Keenwild Station 56/Helibase	Mountain Center
MURRIETA CITY FS # 1	Murrieta
MURRIETA CITY FS # 2	Murrieta
MURRIETA CITY FS # 3	Murrieta
MURRIETA CITY FS # 4	Murrieta
75 - BEAR CREEK FS RVC	Murrieta
USFS - CNF – Bear Creek Station	Murrieta

83 - FRENCH VALLEY FS RVC	Murrieta
NAVAL WEAPONS CENTER FS # 1	Norco
57 – Corydon RVC	Norco
47 - NORCO RVC	Norco
14 - CORONA FS CAL FIRE	Norco
41 - NORTH SHORE FS RVC	North Shore
03 - NUVIEW FS RVC	Nuevo
33 - PALM DESERT FS RVC	Palm Desert
67 - MESA VIEW FS RVC	Palm Desert
71 - PALM DESERT NORTH FS RVC	Palm Desert
81 - NORTH BERMUDA DUNES FS RVC	Palm Desert
PALM SPRINGS FS # 1 (441)	Palm Springs
PALM SPRINGS FS # 2 (442) & Admin Office	Palm Springs
PALM SPRINGS FS # 3 (443)	Palm Springs
PALM SPRINGS FS # 4 (444)	Palm Springs
PALM SPRINGS FS # 5 (445)	Palm Springs
01 - PERRIS FS CAL FIRE	Perris
04 - CAJALCO FS RVC	Perris
09 - GOODMEADOW FS RVC	Perris
59 - MEAD VALLEY FS RVC	Perris
90 - NORTH PERRIS FS RVC	Perris
101 – Perris City RVC	Perris
USFS - BDF - Alandale Station 57	Pine Cove
USFS - BDF-Vista Grande Sta 51/Hotshots	Pine Cove
62 - RANCHO CARRILLO FS RVC	Rancho Carrillo
50 - SOUTH RANCHO MIRAGE FS RVC	Rancho Mirage
69 - RANCHO MIRAGE NORTH FS RVC	Rancho Mirage
44 - RIPLEY FS RVC	Ripley
08 - WOODCREST FS RVC	Riverside
38 - RUBIDOUX FS RVC	Riverside
82 - LAKE HILLS FS RVC	Riverside
19 - Highgrove FS RVC	Riverside
Riverside City FD - FS10 Generator Bldg	Riverside
Riverside City Fire Dept Headquarters	Riverside
Riverside City Fire Dept Maint. Bldg	Riverside
RIVERSIDE CITY FS # 1	Riverside
RIVERSIDE CITY FS # 2	Riverside
RIVERSIDE CITY FS # 3	Riverside
RIVERSIDE CITY FS # 4	Riverside
RIVERSIDE CITY FS # 5	Riverside

RIVERSIDE CITY FS # 6	Riverside
RIVERSIDE CITY FS # 7	Riverside
RIVERSIDE CITY FS # 8	Riverside
RIVERSIDE CITY FS # 9	Riverside
RIVERSIDE CITY FS # 10	Riverside
RIVERSIDE CITY FS # 11	Riverside
RIVERSIDE CITY FS # 12	Riverside
RIVERSIDE CITY FS # 13	Riverside
RIVERSIDE CITY FS # 14	Riverside
25 - SAN JACINTO FS CAL FIRE RVC	San Jacinto
78 - West SAN JACINTO FS RVC	San Jacinto
Soboba Reservation Fire	San Jacinto
12 - TEMECULA FS CAL FIRE RVC	Temecula
177 - PECHANGA STN 177	Temecula
277 - PECHANGA STN 277	Temecula
73 - RANCHO CALIFORNIA FS RVC	Temecula
84 - PARKVIEW FS RVC	Temecula
92 - WOLF CREEK FS RVC	Temecula
95 - RORIPAUGH FS RVC (Opening in 2018)	Temecula
96 – Glen Oaks FS RVC	Temecula
39 - THERMAL FS RVC	Thermal
35 - THOUSAND PALMS FS RVC	Thousand Palms
61 - WILDOMAR FS RVC	Wildomar
34 - WINCHESTER FS RVC	Winchester
54 – Homeland FS RVC	Winchester

HazMat Facilities

Name	Number
5201 0-10 Generator 1	1
5202 11-25 Generator 1	1
5201 0-10 Generator 1,105	1105
5202 11-25 Generator 136	136
5203 26-50 Generator 66	66
5204 51-100 Generator 36	36
5205 101-200 Generator 28	28
5206 201-300 Generator 7	7
5207 301-500 Generator 3	3
5208 501 or more Generator 4	4

5271 0-10 Generator 1	1
5272 11-25 Generator 4	4
5273 26-50 Generator 5	5
5274 51-100 Generator 3	3
5275 101-200 Generator 9	9
5276 201-300 Generator 5	5
5277 301-500 Generator 2	2
5278 501 or more Generator 3	3
5291 Tiered Permitting - PBR 4	4
5292 Tiered Permitting - CA 3	3
5293 Tiered Permitting - CEL 3	3
5294 Tiered Permitting - CECL 2	2
5295 Tiered Permitting - CESW 3	3
5296 Tiered Permitting - CESQT 17	17
5300 Underground Storage Tanks 257	257
5297 Household Hazardous Waste 6	6
5298 ABOP 2	2
5201 0-10 Generator 1,004	1004
5202 11-25 Generator 73	73
5203 26-50 Generator 34	34
5204 51-100 Generator 21	21
5205 101-200 Generator 19	19
5206 201-300 Generator 4	4
5207 301-500 Generator 3	3
5211 0-10 Generator - Exempt 2	2
5271 0-10 Generator 1	1
5272 11-25 Generator 2	2
5273 26-50 Generator 2	2
5274 51-100 Generator 3	3
5275 101-200 Generator 1	1
5276 201-300 Generator 1	1
5278 501 or more Generator 2	2
5291 Tiered Permitting - PBR 4	4
5292 Tiered Permitting - CA 1	1
5295 Tiered Permitting - CESW 4	4
5296 Tiered Permitting - CESQT 15	15
5300 Underground Storage Tanks 228	228
5297 Household Hazardous Waste 12	12
5298 ABOP 1	1

5201 0-10 Generator 785	785
5202 11-25 Generator 98	98
5203 26-50 Generator 50	50
5204 51-100 Generator 17	17
5205 101-200 Generator 6	6
5206 201-300 Generator 1	1
5207 301-500 Generator 3	3
5208 501 or more Generator 2	2
5211 0-10 Generator - Exempt 2	2
5271 0-10 Generator 3	3
5272 11-25 Generator 2	2
5273 26-50 Generator 1	1
5276 201-300 Generator 1	1
5292 Tiered Permitting - CA 3	3
5293 Tiered Permitting - CEL 1	1
5295 Tiered Permitting - CESW 1	1
5296 Tiered Permitting - CESQT 8	8
5300 Underground Storage Tanks 166	166
5201 0-10 Generator 1	1
5300 Underground Storage Tanks 1	1

Law Enforcement Facilities

Name	City
Special Enforcement Bureau	Banning
Banning Police Dept. (West)	Banning
Banning Police Dept. (Central)	Banning
Larry D. Smith Correctional Facility	Banning
Beaumont Police Department (& EOC)	Beaumont
Colorado River Station - Riv Co. Sheriff	Blythe
Blythe Police Department	Blythe
Blythe Jail	Blythe
Cabazon Station - Riverside Co. Sheriff	Cabazon
Cathedral City Police Dept (& City Hall)	Cathedral City
Coachella Store Front - Riv. Co. Sheriff	Coachella
Coachella Sub Station - Riv. Co. Sheriff	Coachella
Corona PD/FD-Temescal Public Safety Fac.	Corona
Corona Police Main Station	Corona
Desert Hot Springs Police (& EOC)	Desert Hot Springs
Special Investigations Bureau - Aviation	Hemet

Hemet Station - Riverside Co. Sheriff	Hemet
Hemet Police Department	Hemet
Indio Station - Riverside Co. Sheriff	Indio
Indio Police Department	Indio
Indio Jail	Indio
Sheriff Coroner Forensic Center East	Indio
Sheriff's Court Services - East	Indio
Community Policing Office-Riv Co Sheriff	La Quinta
Lake Elsinore Sheriff's Station (& EOC)	Lake Elsinore
Mecca Sub Station - Riv. Co. Sheriff	Mecca
Moreno Valley Police Building (& EOC)	Moreno Valley
Southwest Sheriff Sta./Temecula Police	Murrieta
Murrieta Police Dept (& EOC)	Murrieta
Riverside Co Sheriff SW Detention Center	Murrieta
Riverside Co Sheriff SW Justice Center	Murrieta
Palm Desert Station & Sheriff's Dispatch	Palm Desert
Palm Springs Police Department	Palm Springs
Sheriff's Communication Center	Riverside
Robert Presley Detention Center	Riverside
Riverside Police Dept Lincoln Maint Bldg	Riverside
Riverside Police Dept - Arlanza	Riverside
Riverside Police Dept - La Sierra	Riverside
Riverside Police Dept-Magnolia	Riverside
Riverside Police Dept	Riverside
Riverside Police Dept - UNET	Riverside
Riverside Police Dept	Riverside
Riverside Police Dept Headquarters	Riverside
Riverside Police Dept - Lincoln Station	Riverside
Jurupa Valley Station - Riv. Co Sheriff	Riverside
CAL ID & Technical Services Bureau	Riverside
Ben Clark Training Center	Riverside
Criminal Justice Building	Riverside
Bureau of ATF	Riverside
U.S. Secret Service	Riverside
U.S. Customs and Border	Palm Springs
CA Bureau of Narcotic Enforcement	Riverside
UCR Police Department	Riverside

Medical Facilities

Name	City
Corona Regional Med Ctr-Original Const.	Corona
Corona Regional Med Ctr-1974 Addition	Corona
Corona Regional Med Ctr-1989 Addition	Corona
Desert Regional Med Ctr-New Entrance	Palm Springs
Desert Regional Med Ctr-East Tower	Palm Springs
Desert Reg Med Ctr-Women & Infants Ctr	Palm Springs
Desert Regional Med Ctr-North Wing	Palm Springs
Desert Regional Med Ctr-Original Main	Palm Springs
Desert Regional Med Ctr-Rehab Gym	Palm Springs
Desert Regional Med Ctr-Surgery Wing	Palm Springs
Desert Regional Med Ctr-Sinatra Tower	Palm Springs
Desert Regional Med Ctr-Elevator Tower	Palm Springs
Desert Regional Med Ctr-Medical Records	Palm Springs
Desert Regional Med Ctr-Acute Rehab	Palm Springs
Desert Reg Med Ctr-Shore Waitingarea/ICU	Palm Springs
Eisenhower Med Ctr-Central Plant	Rancho Mirage
Eisenhower Med Ctr-Eisenhower Hosp.	Rancho Mirage
Eisenhower Med Ctr-Tennity Emerg. Dept.	Rancho Mirage
Eisenhower Med Ctr-Allen Surgical Pav.	Rancho Mirage
Eisenhower Med Ctr-Hope Outpatient Ctr	Rancho Mirage
Eisenhower Med Ctr-Probst Bldg	Rancho Mirage
Eisenhower Med Ctr-Kiewit Bldg	Rancho Mirage
Eisenhower Med Ctr-Wright Bldg	Rancho Mirage
Eisenhower Med Ctr-Annenberg Ctr	Rancho Mirage
Eisenhower Med Ctr-Hal B Wallis Bldg	Rancho Mirage
Eisenhower Med Ctr-Rinker Bldg	Rancho Mirage
Eisenhower Med Ctr-Uihlein Bldg	Rancho Mirage
Eisenhower Med Ctr-Bannan Bldg	Rancho Mirage
Hemet Valley Med Ctr-Tower One	Hemet
Hemet Valley Med Ctr-Tower Two	Hemet
Hemet Valley Med Ctr-Building A	Hemet
Hemet Valley Med Ctr-Building B	Hemet
Hemet Valley Med Ctr-Building C	Hemet
Hemet Valley Med Ctr-Building D	Hemet
Hemet Valley Med Ctr-Building E	Hemet
Hemet Valley Med Ctr-Building H	Hemet
Hemet Valley Med Ctr-Building F-Mri	Hemet

Hemet Valley Med Ctr-Building K	Hemet
Inland Valley Medical Center	Wildomar
John F Kennedy Mem Hospital-Orig Bldg	Indio
John F Kennedy Mem Hospital-"Bldg C"	Indio
John F Kennedy Mem Hospital-"Bldg D"	Indio
John F Kennedy Mem Hospital-"Bldg E"	Indio
John F Kennedy Mem Hospital-"Bldg F"	Indio
John F Kennedy Mem Hosp-Central Plant	Indio
Kaiser Permanente Riverside-"Bldg A"	Riverside
Kaiser Permanente Riverside-"Bldg B"	Riverside
Loma Linda University Medical Center Murrieta	Murrieta
Menifee Valley Med Ctr-Building One	Menifee
Moreno Valley Community Hospital	Moreno Valley
Parkview Comm Hosp-"Bldg C"	Riverside
Parkview Comm Hosp-Tower	Riverside
Parkview Comm Hosp-Original Hospital	Riverside
Rancho Springs Med Ctr-Building A	Murrieta
Rancho Springs Med Ctr-Building B	Murrieta
Rancho Springs Med Ctr-Building C	Murrieta
Riverside Community Hospital-Bldg A	Riverside
Riverside Community Hospital-Bldg B	Riverside
Riverside Community Hospital-Bldg C	Riverside
Riverside Community Hospital-Bldg D	Riverside
Riverside Community Hospital-Bldg E	Riverside
Riverside County Regional Med Ctr	Moreno Valley
San Gorgonio Memorial Hosp-"Bldg A"	Banning
San Gorgonio Memorial Hosp-"Bldg B"	Banning
San Gorgonio Memorial Hosp-"Bldg C"	Banning
San Gorgonio Memorial Hosp-Women's Ctr	Banning
Palo Verde Hospital Building A	Blythe
Palo Verde Hospital Building B	Blythe
Palo Verde Hospital Building C	Blythe
Palo Verde Hospital Building D	Blythe
Palo Verde Hospital Building E	Blythe
Hemet Valley Healthcare Ctr-Bldg One	Hemet
Temecula Valley Hospital	Temecula
Palo Verde Hospital	Blythe

National Guard Armories

Name	City
Indio Armory (closed)	Indio
Banning Armory	Banning
Riverside Armory	Riverside
Corona Armory	Corona

Public Works Utilities

Name	City
Beaumont-Cherry Valley Water District	Beaumont
Cabazon County Water District	Cabazon
Chiriaco Summit County Water District	Chiriaco Summit
Coachella Valley Water District	Coachella
CR&R Waste Management	
Desert Water Agency	Palm Springs
Eastern Municipal Water District	Perris
Edison - Eastern Region (Menifee)	Romoland
Edison - Eastern Region (Palm Springs - #79)	Cathedral City
Edison - Eastern Region (Wildomar - Cny. Lake, Mu)	Wildomar
Edison - Eastern Region (Wildomar - Corona, Norco	Wildomar
Elsinore Valley Municipal Water District	Lake Elsinore
Fern Valley Water District	Idyllwild
High Valley Water District	Banning
Home Gardens County Water District	Corona
Home Gardens Sanitary District	Corona
Idyllwild County Water District	Idyllwild
Imperial Irrigation District	Imperial
Lake Hemet Valley Water District	Hemet
Lee Lake Water District	Corona
Metropolitan Water District	Riverside
Mission Springs Water District	Desert Hot Springs
Palo Verde Irrigation District	Blythe
Pine Cove County Water District	Idyllwild
Pinyon Pines County Water District	Mountain Center
Rancho California Water District	Temecula
Riverside Public Utilities	Riverside
San Gorgonio Pass Water Agency	Beaumont

Valley Sanitary District	Indio
Waste Management of Inland Empire	Corona
West Valley Water District	Rialto
Western Municipal Water District	Riverside
Western Municipal Water District	Riverside
Yucaipa Valley Water District	Yucaipa
Engineering	Banning
Airport	Banning
City Yard	Banning
Parks/Str Maintenance	Banning
Transit	Banning
All Public Works Dept	Beaumont
All Public Works Dept	Blythe
All Public Works Dept	Calimesa
Public Works Dept	Canyon Lake
All Public Works Dept	Cathedral City
All Public Works Dept	Coachella
All Public Works Dept	Corona
All Public Works Dept	Desert Hot Springs
All Public Works Dept	Eastvale
Engineering	Hemet
Public Works Dept	Indian Wells
Public Works Dept	Indio
Public Works Dept	Jurupa Valley
Public Works Dept	La Quinta
Public Works Dept	Lake Elsinore
Public Works Dept	Menifee
Public Works Dept	Norco
Public Works Dept	Palm Desert
Public Works Dept	Palm Springs
Public Works Yard	Perris
Public Works/City Hall	Perris
Public Works Dept	Rancho Mirage
Public Works Dept	Riverside
Public Works Dept	San Jacinto
Public Works Dept	Temecula
Public Works Dept	Wildomar

Rail Yards – Train Stations

Name	Location
Jurupa Valley / Pedley Station	Riverside
Riverside - Downtown Station	Riverside
Riverside - Hunter Park / UCR Station	Riverside
Riverside - La Sierra Station	Riverside
Perris - South Station	Perris
Perris - Downtown Station	Perris
Moreno Valley / March Field Station	Riverside
Corona - West Station	Corona
Corona - North Main Station	Corona

Shelters

Name	City
Hamilton High School	Anza
Banning High School	Banning
Nicolet Middle School	Banning
Our Savior's Lutheran Church	Banning
Beaumont High School	Beaumont
Fellowship In the Pass Church	Beaumont
Mountain View Middle School	Beaumont
San Gorgonio Catholic Church	Beaumont
San Gorgonio Middle School	Beaumont
Colorado River Fairgrounds	Blythe
Colorado River Senior and Community Center	Blythe
Palo Verde High School	Blythe
Calimesa Seventh-Day Adventist Church	Calimesa
Mesa Grande Academy	Calimesa
Aqua Caliente Elementary School	Cathedral City
Cathedral City Elementary School	Cathedral City
Cathedral City High School	Cathedral City
James Workman Middle School	Cathedral City
Landau Elementary School	Cathedral City
Mount San Jacinto Continuation High School	Cathedral City
Nellie Coffman Middle School	Cathedral City
Rio Vista Elementary School	Cathedral City
Sunny Sands Elementary School	Cathedral City
Cahuilla Desert Academy	Coachella
Our Lady of Soledad	Coachella

Auburndale Intermediate School	Corona
Calvary Chapel	Corona
Centennial High School	Corona
Corona High School	Corona
Corona Seventh Day Adventist Church	Corona
Crossroads Christian Church	Corona
El Cerrito Middle School	Corona
Lee Pollard High School	Corona
Raney Intermediate School	Corona
River Heights Intermediate	Corona
Roosevelt High School	Corona
Santiago High School	Corona
West Community Friends Church	Corona
Bubbling Wells Elementary School	Desert Hot Springs
Desert Hot Springs High School	Desert Hot Springs
Desert Hot Springs Multi-Purpose	Desert Hot Springs
Desert Springs Middle School	Desert Hot Springs
Edward L Wenzlaff Elementary School	Desert Hot Springs
Julius Corsini Elementary School	Desert Hot Springs
Saint Elizabeth Church	Desert Hot Springs
Two Bunch Palms Elementary School	Desert Hot Springs
Dartmouth Middle School	Hemet
Diamond Valley Middle School	Hemet
Hemet High School	Hemet
Our Lady of The Valley Parish Center	Hemet
Santa Fe Middle School	Hemet
Seventh Day Adventist Church	Hemet
Tahquitz High School	Hemet
Valle Vista Assembly of God Church	Hemet
West Valley High School	Hemet
Camp Alandale	Idyllwild
Community Presbyterian Church	Idyllwild
Idyllwild Pines Camp	Idyllwild
Idyllwild School	Idyllwild
Town Hall Recreation	Idyllwild
Eisenhower School Of Performing Arts	Indio
Indio Fairgrounds	Indio
Indio High School	Indio
Indio Middle School	Indio
Theodore Roosevelt School	Indio
Thomas Jefferson Middle School Of V&P Arts	Indio
Woodrow Wilson Middle School	Indio
La Quinta High School	La Quinta

La Quinta Middle School	La Quinta
Canyon Lake Middle School	Lake Elsinore
Elsinore Middle School	Lake Elsinore
Lakeland Village Middle School	Lake Elsinore
Ortega High School	Lake Elsinore
Temescal Canyon High School	Lake Elsinore
Terra Cotta Middle School	Lake Elsinore
Mecca Family and Farmworker's Service Center	Mecca
Bell Mountain Middle School	Menifee
Menifee Valley Middle School	Menifee
Paloma Valley High School	Menifee
Jurupa Valley High School	Mira Loma
Badger Springs Middle School	Moreno Valley
Calvary Chapel Of Moreno Valley	Moreno Valley
Canyon Springs High School	Moreno Valley
Landmark Middle School	Moreno Valley
March Mountain High School	Moreno Valley
Moreno Valley Christian Fellowship Delete	Moreno Valley
Moreno Valley High School	Moreno Valley
Moreno Valley Senior Center	Moreno Valley
Moreno Valley United Methodist Church	Moreno Valley
Mountain View Middle School	Moreno Valley
Palm Middle School	Moreno Valley
Rancho Verde High School	Moreno Valley
Shepherd of the Valley Lutheran Church	Moreno Valley
Sunnymead Middle School	Moreno Valley
Valley View High School	Moreno Valley
Vista Del Lago High School	Moreno Valley
Vista Heights Middle School	Moreno Valley
Vista Verde Middle School	Moreno Valley
Indio Elks Lodge	Mountain Center
Pathfinder Ranch	Mountain Center
Alamos Elementary School	Murrieta
Bella Vista Middle School	Murrieta
Calvary Chapel Murrieta	Murrieta
Murrieta Valley High School	Murrieta
Shivela Middle School	Murrieta
Vista Murrieta High School	Murrieta
Warm Springs Middle School	Murrieta
Church on the Hill	Norco
Nellie Weaver Hall	Norco
Norco Church of Christ	Norco
Norco High School	Norco

Norco Intermediate School	Norco
Riley Gymnasium	Norco
Mountain Shadows Middle School	Nuevo
Palm Desert High School	Palm Desert
Palm Desert Middle School	Palm Desert
Saint Margaret Episcopal Church	Palm Desert
Washington Charter	Palm Desert
Cahuilla Elementary School	Palm Springs
Cielo Vista Elementary School	Palm Springs
Katherine Finchy Elementary School	Palm Springs
Palm Springs High School	Palm Springs
Ramon Alternative Center	Palm Springs
Raymond Cree Middle School	Palm Springs
Vista Del Monte Elementary School	Palm Springs
American Legion Perris Post 595	Perris
Citrus Hill High School	Perris
Lake Perris State Recreation Area	Perris
Lake Skinner Rv Park	Perris
Lakeside Middle School	Perris
Perris Fairgrounds	Perris
Perris High School	Perris
Pinacate Middle School	Perris
Temple Baptist Church and School	Perris
Tomas Rivers Middle School	Perris
Val Verde High School	Perris
Rancho Mirage Elementary School	Rancho Mirage
All Saints Episcopal Church	Riverside
American Legion Post 79	Riverside
Arizona Middle School	Riverside
Arlanza Community Center	Riverside
Arlington High School	Riverside
Bethel Chapel	Riverside
Central Middle School	Riverside
Cesar Chavez Community Center	Riverside
Chemawa Middle School	Riverside
Dales Center/White Park	Riverside
Earhart Middle School	Riverside
First United Methodist Church	Riverside
Foothill Elementary School	Riverside
Gage Middle School	Riverside
Grace United Methodist Church	Riverside
Ismael Villegas Center	Riverside
Joyce Jackson Community Center	Riverside

Jurupa Middle School	Riverside
La Sierra Center	Riverside
La Sierra First Southern Baptist Church	Riverside
La Sierra High School	Riverside
Lincoln Continuation School	Riverside
Loma Vista Middle School	Riverside
Martin Luther King High School	Riverside
Memorial Hall	Riverside
Mira Loma Middle School	Riverside
Mission Middle School	Riverside
Montgomery-Waller Park	Riverside
Norte Vista High School	Riverside
North High School	Riverside
Nueva Vista High School	Riverside
Patriot High School	Riverside
Poly High School	Riverside
Ramona High School	Riverside
Rench Center/Hunt Park	Riverside
Riverside Christian Reformed Church	Riverside
Rubidoux High School	Riverside
Ruth H Lewis Center/Reid Park	Riverside
Saint John's The Evangelist Church	Riverside
Sierra Middle School	Riverside
Stratton Community Center	Riverside
University Middle School	Riverside
Victoria Presbyterian Church	Riverside
Villegas Middle School	Riverside
Wells Middle School	Riverside
Monte Vista Middle School	San Jacinto
North Mountain Middle School	San Jacinto
San Jacinto Community Senior Center	San Jacinto
San Jacinto High School	San Jacinto
Canyon Lake Community Church	Sun City
Fellowship Hall of The United Church of Sun City	Sun City
Harvest Valley School	Sun City
Heritage High School	Sun City
Kay Ceniceros Senior Center	Sun City
Menifee Valley Masonic Lodge 289	Sun City
Romoland Elementary School	Sun City
Saint Vincent Ferrer Catholic Church	Sun City
Sun City Civic Association/North Town Hall	Sun City
Sun City Civic Association/Webb Hall	Sun City
Sun City United Methodist Church	Sun City

Chaparral High School	Temecula
Erle South Gardner Middle School	Temecula
Great Oak High School	Temecula
Hope Lutheran Church	Temecula
James L Day Middle School	Temecula
Margarita Middle School	Temecula
Mary Phillips Senior Center	Temecula
Pechanga Casino	Temecula
Temecula Community Recreation Center	Temecula
Temecula Middle School	Temecula
Temecula Valley High School	Temecula
Vail Elementary School	Temecula
Vail Ranch Middle School	Temecula
Coachella Valley High School	Thermal
Desert Mirage High School	Thermal
Jerry Rummonds Senior Center	Thermal
Valley View Middle School	Thermal
Della South Lindley Elementary School	Thousand Palms
David A Brown Middle School	Wildomar
Elsinore High School	Wildomar

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APPENDIX F – Historical Landmarks

Continue to Next Page.

Name (Landmark Plaque Number)	National Register	California State Historical Landmar	California Register of	Point of Interest	Date Listed	City (County)
ADMINISTRATION BUILDING, SHERMAN INSTITUTE (N851)	Yes				1/9/1980	Riverside (Riverside)
AGENTS HOME (P231)				Yes	10/5/1971	Thermal (Riverside)
ALL SOULS UNIVERSALIST CHURCH (N666)	Yes				9/18/1978	Riverside (Riverside)
ANDREAS CANYON (N201)	Yes				1/8/1973	Palm Springs (Riverside)
ARCHEOLOGICAL SITES CA-RIV-504 AND CA-RIV 773 (N2195)	Yes				3/12/2003	Blythe (Riverside)
ARLINGTON BRANCH LIBRARY AND FIRE HALL (N1839)	Yes				7/22/1993	Riverside (Riverside)
ARMORY HALL (N1748)	Yes				1/29/1992	Lake Elsinore (Riverside)
ARMORY HALL, GRAND ARMY OF THE REPUBLIC BUILDING (P822)				Yes	5/15/1996	Lake Elsinore (Riverside)
ATCHISON, TOPEKA, AND SANTA FE RAILWAY DEPOT AT BLYTHE (P735)				Yes	2/11/1991	Blythe (Riverside)
BANDINI ADOBE SITE (P120)				Yes	6/6/1969	Norco (Riverside)
BANDINI-COTA ADOBE SITE (P122)				Yes	6/6/1969	Corona (Riverside)
BANNING WOMEN'S CLUB (P725)				Yes	11/20/1989	Banning (Riverside)
BARKER DAM (N394)	Yes				10/29/1975	Twentynine Palms (Riverside)
BEAUMONT CARNEGIE LIBRARY (P807)				Yes	12/4/1994	Beaumont (Riverside)
BLYTHE FERRY CROSSING (P195)				Yes	5/19/1971	Blythe (Riverside)
BLYTHE INTAGLIOS (N384)	Yes				8/22/1975	Blythe (Riverside)
BOGART HOUSE (P808)				Yes	12/4/1994	Beaumont (Riverside)
BUTTERCUP FARMS PICTOGRAPH (N411)	Yes				5/3/1976	Perris (Riverside)
BUTTERFIELD STAGE STATION (188)		Yes			6/20/1935	Corona (Riverside)
CAMP EMERSON (P147)				Yes	11/3/1969	Idyllwild (Riverside)
CAMP YOUNG--DESERT TRAINING CENTER, CAMA (P87)				Yes	6/2/1968	Desert Center (Riverside)
CANTU RANCH/GALLEANO WINERY (P773)				Yes	8/21/1992	Mira Loma (Riverside)
CARNEGIE, ANDREW, LIBRARY (N502)	Yes				6/29/1977	Corona (Riverside)
CARVED ROCK (187)		Yes			6/20/1935	Corona (Riverside)
CHILDS, WILLIAM, HOUSE (N2063)	Yes				7/28/1999	Riverside (Riverside)

CHINATOWN (P74)	Yes			Yes	1/24/1968	Riverside (Riverside)
CITRUS EXPERIMENT STATION (P121)				Yes	6/6/1969	Riverside (Riverside)
CITRUS MACHINERY PIONEERING (P123)				Yes	6/6/1969	Riverside (Riverside)
COACHELLA VALLEY COUNTY WATER DISTRICT (P141)				Yes	8/29/1969	Coachella (Riverside)
COACHELLA VALLEY FISH TRAPS (N175)	Yes				6/13/1972	Valerie (Riverside)
COPLIN HOUSE SPOKANE HOTEL PLUEGER REALTY (P759)				Yes	11/8/1991	Banning (Riverside)
CORN SPRINGS (N2038)	Yes				10/30/1998	Desert Center (Riverside)
CORN SPRINGS (P80)				Yes	1/24/1968	Desert Center (Riverside)
CORNELIUS AND MERCEDES JENSON RANCH (943)		Yes			6/12/1981	Rubidoux (Riverside)
CORONA FOUNDERS MONUMENT (738)		Yes			6/6/1960	Corona (Riverside)
CORONA HIGH SCHOOL (N2297)	Yes				8/3/2005	Corona (Riverside)
COTTONWOOD SCHOOL (P520)				Yes	2/1/1978	Sage (Riverside)
CRESCENT BATHHOUSE (N380)	Yes				7/30/1975	Lake Elsinore (Riverside)
DE ANZA CROSSING OF THE SANTA ANA RIVER, 1775 AND 1776 (787)		Yes			9/18/1963	Riverside (Riverside)
DESERT INN (P307)				Yes	7/13/1973	Palm Springs (Riverside)
DESERT QUEEN MINE (N402)	Yes				1/17/1976	Twentynine Palms (Riverside)
DOS PALMAS (P78)				Yes	1/24/1968	Mecca (Riverside)
EAGLE MOUNTAIN IRON (P229)				Yes	10/5/1971	Desert Center (Riverside)
EL MIRADOR HOTEL AND TOWER (P570)				Yes	6/12/1981	Palm Springs (Riverside)
ELSINORE WOMEN'S CLUB (P832)				Yes	2/5/1998	Lake Elsinore (Riverside)
ELSINORE'S HOTTEST SULPHUR SPRINGS (P97)				Yes	6/7/1968	Lake Elsinore (Riverside)
ESTUDILLO MANSION (N2146)	Yes				10/25/2001	San Jacinto (Riverside)
FEDERAL POST OFFICE (N705)	Yes				11/20/1978	Riverside (Riverside)
FIRST CHURCH OF CHRIST, SCIENTIST (N1794)	Yes				9/22/1992	Riverside (Riverside)
FIRST CONGREGATIONAL CHURCH OF RIVERSIDE (N1975)	Yes				4/3/1997	Riverside (Riverside)
FIRST POST OFFICE (P174)				Yes	3/19/1970	Temecula (Riverside)
FRINK RANCH (P94)				Yes	6/7/1968	Beaumont (Riverside)
GALLEANO WINERY (N2207)	Yes				6/22/2003	Mira Loma (Riverside)
GARBANI, ROCCO, HOMESTEAD (N2079)	Yes				12/22/1999	Winchester (Riverside)

GIANT DESERT FIGURES (101)		Yes			3/29/1933	Blythe (Riverside)
GILMAN RANCH (P41)	Yes			Yes	6/2/1967	Banning (Riverside)
HALL CITY AND HALL'S GRADE (P124)				Yes	6/6/1969	Cabazon (Riverside)
HAMILTON SCHOOL (#1), LITTLE RED SCHOOL HOUSE (P746)				Yes	8/2/1991	Anza (Riverside)
HARADA HOUSE (N517)	Yes				9/15/1977	Riverside (Riverside)
HEMET DAM AND LAKE HEMET (P95)				Yes	6/7/1968	Hemet (Riverside)
HEMET MAZE STONE (557)		Yes			8/24/1956	Hemet (Riverside)
HENDERSON/REID BUILDING (P774)				Yes	8/21/1992	Banning (Riverside)
HERITAGE HOUSE (N205)	Yes				2/28/1973	Riverside (Riverside)
HIGHGROVE HYDROELECTRIC PLANT (P108)				Yes	12/11/1968	Riverside (Riverside)
HIGHLAND SPRINGS (P38)				Yes	6/2/1967	Banning (Riverside)
IDYLLWILD (P335)				Yes	7/12/1974	Idyllwild (Riverside)
INDIAN SCHOOL AGENCY OFFICE, INDIAN SCHOOL AGENCY (P233)				Yes	10/5/1971	Thermal (Riverside)
INDIAN WELLS (P83)				Yes	1/24/1968	Palm Desert (Riverside)
JENSEN, CORNELIUS, RANCH (N815)	Yes				9/6/1979	Rubidoux (Riverside)
JOHN W. NORTH PARK / SEVENTH STREET HISTORIC DISTRICT (P308)				Yes	7/13/1973	Riverside (Riverside)
LAKE NORCONIAN CLUB (N2083)	Yes				2/4/2000	Norco (Riverside)
LEDERER, GUS, SITE (N2196)	Yes				3/12/2003	Desert Center (Riverside)
LORING OPERA HOUSE, GOLDEN STATE THEATER (P64)				Yes	9/22/1967	Riverside (Riverside)
MARCH FIELD HISTORIC DISTRICT (P93)				Yes	6/7/1968	Moreno Valley (Riverside)
MARCH FIELD HISTORIC DISTRICT (N1893)	Yes				12/6/1994	Riverside (Riverside)
MARTINEZ CANYON ROCKHOUSE (N2074)	Yes				12/14/1999	North Palm Springs (Riverside)
MARTINEZ HISTORICAL DISTRICT (N236)	Yes				5/17/1973	Torres-Martinez Indian Reservation (Riverside)
MARTINEZ HISTORICAL DISTRICT/MARTINEZ INDIAN AGENCY (P232)				Yes	10/5/1971	Thermal (Riverside)
MASONIC TEMPLE (N872)	Yes				6/6/1980	Riverside (Riverside)
MCCOY SPRING ARCHEOLOGICAL SITE (N1103)	Yes				5/10/1982	Blythe (Riverside)
MISSION COURT BUNGALOWS (N1835)	Yes				7/8/1993	Riverside (Riverside)

MISSION INN (761)	Yes	Yes			4/28/1961	Riverside (Riverside)
MOROVIAN CHURCH AND INDIAN SCHOOL, INDIAN SCHOOL (P230)				Yes	10/5/1971	Thermal (Riverside)
MOUNT RUBIDOUX (P65)				Yes	9/22/1967	Riverside (Riverside)
MURRIETA CREEK ARCHEOLOGICAL AREA (N229)	Yes				4/24/1973	Temecula (Riverside)
NOBLE'S RANCH (P82)				Yes	1/24/1968	Beaumont (Riverside)
NORTH CHUCKWALLA MOUNTAIN QUARRY DISTRICT (N966)	Yes				8/24/1981	Desert Center (Riverside)
NORTH CHUCKWALLA MOUNTAINS PETROGLYPH DISTRICT CA-RIV 1383 (N969)	Yes				9/3/1981	Desert Center (Riverside)
OLD MORENO SCHOOL (P702)				Yes	8/23/1988	Moreno Valley (Riverside)
OLD TEMESCAL ROAD (638)		Yes			3/31/1958	Corona (Riverside)
OLD YWCA BUILDING (N1009)	Yes				1/28/1982	Riverside (Riverside)
ORIGINAL PALM SPRINGS, THE (P118)				Yes	6/6/1969	Palm Springs (Riverside)
PAINTED ROCK (190)		Yes			6/20/1935	Corona (Riverside)
PALM CANYON THEATER / STEVENS, FRANCES S., SCHOOL (C21)			Yes		11/7/2003	Palm Springs (Riverside)
PALMDALE RAILROAD SITE / RAILROAD THAT FAILED (P146)				Yes	11/3/1969	Palm Springs (Riverside)
PARENT WASHINGTON NAVEL ORANGE TREE (20)		Yes			6/1/1932	Riverside (Riverside)
PEDLEY-TYPE DAM (P337)				Yes	7/12/1974	Banning (Riverside)
PERRIS DEPOT (N1871)	Yes				8/5/1994	Perris (Riverside)
PINACATE MINING DISTRICT (P553)				Yes	6/6/1980	Good Hope (Riverside)
PINACATE, PINACATE MINING DISTRICT (P554)				Yes	6/6/1980	Perris (Riverside)
RAMONA BOWL, SITE OF THE RAMONA PAGEANT (1009)		Yes			2/16/1993	Hemet (Riverside)
RANCHO SANTA ROSA (P719)				Yes	11/3/1989	Murrieta (Riverside)
RIVERSIDE CEMENT COMPANY (P336)				Yes	7/12/1974	Riverside (Riverside)
RIVERSIDE COUNTY COURTHOUSE (P96)				Yes	6/7/1968	Riverside (Riverside)
RIVERSIDE FIRST CONGREGATIONAL CHURCH (P76)				Yes	1/24/1968	Riverside (Riverside)

RIVERSIDE MUNICIPAL AUDITORIUM AND SOLDIER'S MEMORIAL BUILDING (N576)	Yes				3/31/1978	Riverside (Riverside)
RIVERSIDE-ARLINGTON HEIGHTS FRUIT EXCHANGE (N877)	Yes				6/9/1980	Riverside (Riverside)
RUINS OF THIRD SERRANO ADOBE (224)		Yes			6/20/1935	Corona (Riverside)
RYAN HOUSE AND LOST HORSE WELL (N368)	Yes				6/5/1975	Twentynine Palms (Riverside)
SAAHATPA (749)		Yes			8/17/1960	(Riverside)
SAN PEDRO, LOS ANGELES, & SALT LAKE RR DEPOT (N491)	Yes				4/18/1977	Riverside (Riverside)
SAN TIMOTEO CANYON SCHOOLHOUSE (P125)	Yes			Yes	6/6/1969	Calimesa (Riverside)
SANTA FE RAILWAY DEPOT (P711)				Yes	11/22/1988	Hemet (Riverside)
SANTA ROSA RANCHO (1005)		Yes			2/18/1992	Murrieta (Riverside)
SERRANO BOULDER (185)		Yes			6/20/1935	Corona (Riverside)
SERRANO TANNING VATS (186)		Yes			6/20/1935	Corona (Riverside)
SHAVER'S WELL (P148)				Yes	11/3/1969	Mecca (Riverside)
SIMON'S, M. H., UNDERTAKING CHAPEL (N878)	Yes				6/9/1980	Riverside (Riverside)
SITE OF BLYTHE INTAKE (948)		Yes			3/1/1982	Blythe (Riverside)
SITE OF BLYTHE INTAKE (P63)				Yes	9/22/1967	Blythe (Riverside)
SITE OF CONTRACTOR'S GENERAL HOSPITAL (992)		Yes			8/17/1990	(Riverside)
SITE OF DE ANZA CAMP, MARCH 1774 (103)		Yes			3/29/1933	Anza (Riverside)
SITE OF INDIAN VILLAGE OF POCHEA (104)		Yes			3/29/1933	Hemet, (Riverside)
SITE OF LOUIS RUBIDOUX HOUSE (102)		Yes			3/29/1933	Rubidoux (Riverside)
SITE OF OLD RUBIDOUX GRIST MILL (303)		Yes			7/12/1939	Rubidoux (Riverside)
SMILEY PLACE (P760)				Yes	11/8/1991	Indio (Riverside)
SOUTHERN HOTEL (N1803)	Yes				10/15/1992	Perris (Riverside)
SPEED OF LIGHT EXPERIMENT SITE (P119)				Yes	6/6/1969	Idyllwild (Riverside)
ST. BONIFACE SCHOOL (P415)				Yes	8/7/1975	Beaumont (Riverside)
SUTHERLAND FRUIT COMPANY (N1439)	Yes				4/11/1986	Riverside (Riverside)
TAHQUITZ CANYON (N189)	Yes				10/31/1972	Palm Springs (Riverside)
TEMECULA QUARRIES (P175)				Yes	3/19/1970	Temecula (Riverside)
TEMESCAL TIN MINES (P79)				Yes	1/24/1968	Corona (Riverside)
THOMAS-GARNER RANCH (P176)				Yes	3/19/1970	Idyllwild (Riverside)
TORO VILLAGE (P81)				Yes	1/24/1968	Indio (Riverside)

TRUJILLO ADOBE (P75)				Yes	1/24/1968	Riverside (Riverside)
U.S. EXPERIMENTAL DATE STATION, DATE INDUSTRY BIRTHPLACE (P306)				Yes	7/13/1973	Mecca (Riverside)
UNIVERSITY HEIGHTS JUNIOR HIGH SCHOOL (N1832)	Yes				6/24/1993	Riverside (Riverside)
VALERIE JEAN'S DATE SHOP,RUSSELL NICOLL HOME/OL KING SOLO (P736)				Yes	2/11/1991	Thermal (Riverside)
VICTORIA AVENUE (N2108)	Yes				10/26/2000	Riverside (Riverside)
WEAVER ADOBE (P39)				Yes	6/2/1967	Banning (Riverside)
WHITEWATER (P40)				Yes	6/2/1967	Banning (Riverside)
WILEY'S WELL (P77)				Yes	1/24/1968	Blythe (Riverside)
WOMAN'S IMPROVEMENT CLUB CLUBHOUSE (N1579)	Yes				11/3/1988	Corona (Riverside)
YERXA'S DISCOVERY (P560)				Yes	12/19/1980	Desert Hot Springs (Riverside)

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APPENDIX G – Trends Questionnaire

Continue to Next Page.

April 2023

JURISDICTION:	DOES YOUR AGENCY HAVE RESPONSIBILITY FOR LAND USE AND/OR DEVELOPMENT ISSUES WITHIN YOUR JURISDICTIONAL BOUNDARIES? YES			
	2012 DATA	2017 DATA		2022
Current Population in Jurisdiction or Served	2,196,137	2,329,256	Projected Population in Jurisdiction or Served - in 2022	2,506,739
Current Sq Miles in Jurisdiction or Served	6,375	7,295.6	Projected Sq Miles in Jurisdiction or Served - in 2022	7,295.6
Does Your Jurisdiction have any ordinances or regulations dealing with disaster mitigation, disaster preparation, or disaster response?	Yes	Yes	If yes, please list ordinance or regulation number.	
What is the number one land issue your agency will face in the next five years	N/A			
Approximate Number of Homes/Apts/etc.	696,290	700,413	Projected Number of Homes/Apts/etc.- in 2022	955,853
Approximate Total Residential Value	N/A	362,066	Projected Residential Total Value - in 2022	
Approximate Number of Commercial Businesses	N/A	N/A	Projected Number of Commercial Businesses - in 2022	N/A
Approximate Percentage of Homes/Apts/etc. in flood hazard zones	12%		Approximate Percentage of Homes/Apts/etc. in flood hazard zones - in 2022	N/A
Approximate Percentage of Homes/Apts/etc. in earthquake hazard zones	5%		Approximate Percentage of Homes/Apts/etc. in earthquake hazard zones - in 2022	N/A
Approximate Percentage of Homes/Apts/etc. in wildland fire hazard zones	34%		Approximate Percentage of Homes/Apts/etc. in wildland fire hazard zones - in 2022	N/A
Approximate Percentage of Commercial Businesses in flood hazard zones	N/A	N/A	Approximate Percentage of Commercial Businesses in flood hazard zones - in 2022	N/A
Approximate Percentage of Commercial Businesses in earthquake hazard zones	N/A	N/A	Approximate Percentage of Commercial Businesses in earthquake hazard zones - in 2022	N/A
Approximate Percentage of Commercial Businesses in wildland fire hazard zones	N/A	N/A	Approximate Percentage of Commercial Businesses in wildland fire hazard zones - in 2022	N/A
Number of Critical Facilities in your Jurisdiction that are in flood hazard zones	41	1,298	Projected Number of Critical Facilities in your Jurisdiction that are in flood hazard zones - in 2022	N/A
Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones	21		Number of Critical Facilities in your Jurisdiction that are in earthquake hazard zones - in 2022	N/A
Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones.	69		Number of Critical Facilities in your Jurisdiction that are in wildland fire hazard zones - in 2022	N/A

Does your jurisdiction plan on participating in the County's on-going plan maintenance program every year as described in Part I of the plan?	N/A	N/A	If not, how will your jurisdiction do plan maintenance.
Will a copy of this plan be available for the various planning groups within your jurisdiction for use in future planning and budgeting purposes?			Yes

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APPENDIX H – Mitigation Cost Analysis Guidelines

COUNTY OF RIVERSIDE
OFFICE OF THE
AUDITOR-CONTROLLER

County Administrative Center
4080 Lemon Street, 11th Floor
P.O. Box 1326
Riverside, CA 92502-1326
(951) 955-3800
Fax (951) 955-3802

ACO AUDITOR CONTROLLER
COUNTY OF RIVERSIDE
Paul Angulo, CPA
Auditor-Controller

Auditor-Controller Review of Rates/Fees

Pursuant to Board of Supervisors Policy B-4 and B-28, County departments wishing to establish a rate/fee, or revise an existing rate/fee for service provided to other County departments, other public agencies, organizations, or individuals, are required to obtain approval by the County Executive Office and be reviewed by the (ACO) Auditor-Controller's Office prior to submitting their rate/fee request to the Board of Supervisors.

Federal (OMB) Office of Management and Budget Circular A-87 provides guidance for determining costs that may be recovered in rates/fees.

Rate/Fee packages submitted for review to the ACO must include the following:

1. A narrative fully explaining the methodology used (i.e., the purpose of the rate/fee, how it was developed, how each rate/fee was calculated, and who will be charged the rate/fee).

2. Electronic copies of spreadsheets created to calculate the rate/fee. Please provide notes to explain where the information was derived and clearly identify if changes have been made to the original data. Ensure multiple tabs are correctly linked and pertinent data is highlighted.

3. Supporting documentation validating all expenditure and revenue amounts used, full disclosure of all calculations, and clear identification of overhead calculations and application of the overhead to all the department's divisions/functions.

ACO Documentation Requirements

1. Direct salary/benefits costs by classification; including hourly rate of pay & benefits rate;
2. Direct costs by line item included in the rate/fee (non-salary/benefit);
3. Departmental administrative overhead costs included in rate/fee, as well as the total administrative cost applied to all divisions/functions;
4. Departmental indirect costs by line item included in rate;
5. Countywide overhead costs;
6. Schedule of fixed asset amortization;
7. Copy of (ICRP) Indirect Cost Rate Proposal, if applicable;
8. Copy of last year's budget for the function;

9. Time studies, if applicable;
10. Methodology for Productive hourly rate computations, if applicable;
11. Government Code reference for statutorily set rates/fees;
12. Related off-setting revenues;
13. County Ordinance reference, if applicable;
14. ISF retained earnings information;
15. Summary showing current rates/fees and revised rates/fees;
16. Completed Form 11; and
17. Copy of the annual productivity and efficiency report.

The above list is not all inclusive and additional documentation may be required in support of submitted rates/fees.

If you have any questions in regards to the rate/fee review process or the required documentation, please contact Principal Accountant, Russell Dominski at 955-8136.

Thank you in advance for your cooperation.

Cc: Jay Orr, County Executive Officer
Ivan Chand, Deputy County Executive Officer
Karen Johnson, Senior Management Analyst

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APPENDIX I – References

References for the Updated MJLHMP included information from many websites, FEMA and Cal EMA guidance documents and resources from the County of Riverside Departments.

2018 Riverside County Operational Area Multi-Jurisdictional Local Hazard Mitigation Plan (MJLHMP)

FEMA Local Mitigation Plan Review Guide

2010 State of California Hazard Mitigation Plan (SHMP)

Disaster Mitigation Act of 2000

County of Riverside General Plan, multiple Elements

Riverside County Operational Area Emergency Operations Plan

FEMA Hazard Mitigation Planning

FEMA How to Guide #1, Getting Started: Building Support for Mitigation Planning

FEMA How to Guide #2, Understanding Your Risks: Identifying Hazards and Estimating Losses

FEMA How to Guide #3, Developing the Mitigation Plan: Identifying Mitigation Actions and Implementation Strategies

FEMA How to Guide #4, Bringing the Plan to Life: Implementing the Hazard Mitigation Plan

FEMA How to Guide #5, Using Benefit-Cost Review in Mitigation Planning

FEMA How to Guide #6, Integrating Historic Property and Cultural Resource Considerations into Hazard Mitigation Planning

FEMA How to Guide #7, Integrating Manmade Hazards into Mitigation Planning

FEMA How to Guide #8, Multi-Jurisdictional Mitigation Planning

FEMA How to Guide #9, Using the Hazard Mitigation Plan to Prepare Successful Mitigation Projects

Freeway Closure Plan

Joint Information System (JIS) Plan

Mass Care & Shelter Guidance and Standard Operating Procedures

Natural Hazard Mapping, Analysis, and Mitigation: a Technical Background Report in Support of the Safety Element of the New Riverside County 2000 General Plan

Riverside County Essential Facilities Risk Assessment (RCEFRA) Project Report June 2009

2015 Riverside County SCAG Repot – Profile of Riverside County

Southern California Catastrophic Earthquake Response Plan

Web Site Links:

Cal OES Hazard Mitigation Portal: http://hazardmitigation.calema.ca.gov/

Cal OES Local Mitigation Planning: http://www.caloes.ca.gov/for-individuals-families/hazard-mitigation-planning/local-hazard-mitigation-program

My Hazards Mapping Website: http://myhazards.calema.ca.gov/

My Plan Mapping Site: http://myplan.calema.ca.gov/

Distressed and Abandoned Properties: http://www.foreclosureregistration.org/

Query for fires, used to find details on 63 large fires for Riverside County: http://cdfdata.fire.ca.gov/incidents/incidents_search_results?search=riverside.

Data query to find heat data, health related stats: http://epicenter.cdph.ca.gov/ReportMenus/InjuryDataByTopic.aspx.

Seismic landslide zones: http://gmw.consrv.ca.gov/shmp/html/pdf_maps_so.html

Landslide Alerts: http://www.usgs.gov/hazard_alert/alerts/landslides.rss

Kinder Morgan Public Information: http://www.kindermorgan.com/public_awareness/

http://www.kindermorgan.com/public_awareness/AdditionalInformation/KMSafetyBrochures.cfm

Riverside County Ordinances: http://www.rctlma.org/admin/content/ordinance

Riverside County Building and Safety: http://www.rctlma.org/building/default.aspx

Riverside County Auditor Controller:
http://www.auditorcontroller.org/ReportsPublications.aspx

Riverside Flood Control: http://www.floodcontrol.co.riverside.ca.us/AnnualReports.aspx

Riverside County Transportation & Land Management Agency:
http://planning.rctlma.org/Portals/0/genplan/general_Plan_2017/elements/OCT17/Ch01_Intro_120815.pdf?ver=2017-10-11-102103-380

http://planning.rctlma.org/ZoningInformation/GeneralPlan/RiversideCountyGeneralPlan2015.aspx

http://planning.rctlma.org/

Ready.Gov Website: http://www.ready.gov/pandemic

http://www.ready.gov/terrorism

Disability Planning Data for Planners from Pooled 2005-2007 ACS PUMS Data:
www.DisabilityPlanningData.com

The Spatial Hazard Events and Losses Database for the United States. Version 7.0 Database. Columbia, SC: University of South Carolina. 2009: http://www.sheldus.org.

Water Plan information: http://www.water.ca.gov/publications/forms/

Flood Risk Maps: http://www.water.ca.gov/myfloodrisk/

Dam Safety Website: www.water.ca.gov/damsafety/index.cfm

Source: California Energy Commission, Natural Gas Pipelines:
http://www.energy.ca.gov/maps/Natural_Gas_Pipelines.pdf

75 Gas Transmission Pipeline Long Range Planning:
http://www.pge.com/myhome/customerservice/response/pipelineplanning/

Source: U.S. Department of Transportation's Office of Pipeline Safety:
http://osfm.fire.ca.gov/pipelineregulation.html

Recent Earthquakes in California and Nevada:
http://scedc.caltech.edu/recent/Quakes/quakes0.html

Data: Explore 15 Years of Power Outages: http://insideenergy.org/2014/08/18/data-explore-15-years-of-power-outages/

Thousands without power in unincorporated Riverside County: http://abc7.com/news/thousands-without-power-in-unincorporated-riverside-county/1315149/

Power and phone outages reported across Riverside/San Bernardino counties: http://www.kesq.com/news/power-and-phone-outages-reported-across-riverside_san-bernardino-counties/62501575.

Arizona-Southern California Outages on September 8, 2011, cascading outages and leaving approximately 2.7 million customers without power

A Study of Active Shooter Incidents in the United States Between 2000 and 2013: file:///C:/Users/sbruns/Downloads/(U)_ActiveShooter021317_17B_WEB%20(1).PDF

U.S. Drought Monitor – California: http://droughtmonitor.unl.edu/data/jpg/20170718/20170718_CA_trd.jpg

Riverside County Flood Control and Water Conservation District ANNUAL REPORT FY 2015/2016: http://www.floodcontrol.co.riverside.ca.us/Downloads/AnnualReports/DistrictAnnualReport15-16.pdf

San Onofre - Units 2 and 3https://www.nrc.gov/info-finder/decommissioning/power-reactor/san-onofre-units-2-3.html

Cal OES - San Onofre Nuclear Generating Station: http://www.caloes.ca.gov/cal-oes-divisions/planning-preparedness/nuclear-power-plant-program

Colorado River Aqueduct: http://www.asce.org/project/colorado-river-aqueduct/

California State Water Project Overview: http://www.water.ca.gov/swp/

Addressing Emerging Infectious Disease Threats: A Prevention Strategy for the United States Executive Summary: https://www.cdc.gov/mmwr/preview/mmwrhtml/00031393.htm

National Center for Emerging and Zoonotic Infectious Diseases (NCEZID): https://www.cdc.gov/ncezid/who-we-are/index.html

Botulism from Drinking Pruno: https://wwwnc.cdc.gov/eid/article/15/1/08-1024_article

West Nile Virus in California: https://wwwnc.cdc.gov/eid/article/10/8/04-0077_article

Risk of Local Zika Virus Transmission by County: https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/LocalZikaRiskMap.pdf

Ebola (Ebola Virus Disease): https://www.cdc.gov/vhf/ebola/transmission/index.html

Mapping Site Links:

Cal OES Hazard Mapping http://www.caloes.ca.gov/cal-oes-divisions/geographic-information-systems

Cal OES My Plan: http://myplan.calema.ca.gov/

Faults Mapping: http://www.quake.ca.gov/gmaps/FAM/faultactivitymap.html

California Department of Water Resources: http://gis.bam.water.ca.gov/bam

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Appendix J – City of Menifee LHMP

(Revison 11.23.22)
City of Menifee Local

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Appendix K - Acronyms

This list contains acronyms commonly used in Emergency Management and those specific to Riverside County.

AC	Area Command
ADA	Americans with Disabilities Act
ALS	Advanced Life Support
ARC	American Red Cross
ARES	Amateur Radio Emergency Services
CALDAP	California Disaster Assistance Program
CAL FIRE	California Department of Forestry and Fire Protection
CAL-TRANS	California Department of Transportation
CALWAS	California Warning System
CAR	Corrective Action Report
CBO	Community Based Organization
CBRNE	Chemical, Biological, Radiological, Nuclear or High-Yield Explosive
CCC	California Conservation Corps
CDC	Centers for Disease Control, U.S. Public Health Service
CDF	California Department of Forestry
CEPEC	California Earthquake Prediction Evaluation Council
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CERT	Community Emergency Response Team
CESFRS	California Emergency Service Fire Radio System
CESRS	California Emergency Services Radio System
CFR	Code of Federal Regulations
CHP	California Highway Patrol
CLEMARS	California Law Enforcement Mutual Aid Radio System
CLERS	California Law Enforcement Radio System
CLETS	California Law Enforcement Telecommunications System

COG	Continuity of Government
DA	Damage Assessment
DAP	Disaster Assistance Programs
DCS	Disaster Communications Service
DFCO	Deputy Federal Coordinating Officer
DFO	Disaster Field Office
DHA	Disaster Housing Assistance
DHS	Department of Homeland Security
DMAT	Disaster Medical Assistance Team
DMORT	Disaster Mortuary Operational Response Team
DOC	Department Operations Center
DOD	Department of Defense
DOI	Department of Interior
DOJ	Department of Justice
DOL	Department of Labor
DOS	Department of State
DOT	Department of Transportation
DRC	Disaster Recovery Center
DRC	Disaster Resource Center
DSA	Division of the State Architect (California)
DWR	California Department of Water Resources
EAS	Emergency Alert System
EDD	Employment Development Department
EDIS	Emergency Digital Information System
EMAC	Emergency Management Assistance Compact
EMD	Emergency Management Department
EMI	Emergency Management Institute
EMIS	Emergency Management Information System (Los Angeles County)
EMMA	Emergency Managers Mutual Aid
EMP	Electromagnetic Pulse

EMPG	Emergency Management Performance Grant
EMS	Emergency Medical Services
EMSA	Emergency Medical Services Authority
EMT	Emergency Medical Technician
EOC	Emergency Operations Center
EOP	Emergency Operations Plan
EPA	Environmental Protection Agency
EPI	Emergency Public Information
EPIC	Emergency Public Information Center
ERT	Emergency Response Team
ESA	California Emergency Services Act
ESC	Emergency Services Coordinator
ESF	Emergency Support Functions
EST	Emergency Support Team
FAA	Federal Aviation Administration
FBI	Federal Bureau of Investigation
FCC	Federal Communications Commission
FCO	Federal Coordinating Officer
FEMA	Federal Emergency Management Agency
FFY	Federal Fiscal Year
FHWA	Federal Highway Administration
FIA	Federal Insurance Administration
FIRESCOPE	Firefighting Resources of Calif. Organized for Potential Emergencies
FOG	Field Operations Guide
FTS	Field Treatment Sites
GAR	Governor's Authorized Representative
GSA	General Services Administration
HAZMAT	Hazardous Materials
HEW	U.S. Department of Health, Education and Welfare
HHS	Department of Health and Human Services

HMC	Hazard Mitigation Coordinator
HMDA	Hazard Mitigation and Disaster Assistance
HMGP	Hazard Mitigation Grant Program
HMO	Hazard Mitigation Officer
HMT	Hazard Mitigation Team
HSAS	Homeland Security Advisory System
HSC	Homeland Security Council
HSEEP	Homeland Security Exercise Evaluation Program
HSOC	Homeland Security Operations Center
HSPD	Homeland Security Presidential Directive
HSPD-5	Homeland Security Presidential Directive-5
HUD	Housing and Urban Development Program
IA	Individual Assistance
IAC	Incident Advisory Council
IAP	Incident Action Plan
IC	Incident Commander
IC	Incident Command
ICP	Incident Command Post
ICS	Incident Command System
IDE	Initial Damage Estimate
IID	Imperial Irrigation District
IMT	Incident Management Team
IRS	U.S. Internal Revenue Service
JDIC	Justice Data Interface Controller
JFO	Joint Field Office
JIC	Joint Information Center
JIS	Joint Information System
JOC	Joint Operations Center
JPA	Joint Powers Agreement
JTTF	Joint Terrorism Task Force

LNO	Liaison Officer
MACS	Multi-Agency Coordination System
MARAC	Mutual Aid Regional Advisory Committee
MMRS	Metropolitan Medical Response Team
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MTA	Metropolitan Transit Authority
NAWAS	National Warning System
NDAA	California Natural Disaster Assistance Act
NDMS	National Disaster Medical System
NEP	National Exercise Program
NFA	National Fire Academy
NFIP	National Flood Insurance Program
NGO	Nongovernmental Organization (See PNP, NVOAD, VOAD)
NHC	National Hurricane Center
NHPA	National Historic Preservation Act
NIMS	National Incident Management System
NOAA	National Oceanic and Atmospheric Administration
NOC	National Operations Center
NOI	Notice of Interest
NRC	Nuclear Regulatory Commission
NRF	National Response Framework
NSC	National Security Council
NVOAD	National Voluntary Organizations Active in Disaster (See NGO, PNP, VOAD)
NWS	National Weather Service
OA	Operational Area
OASIS	Operational Area Satellite Information System
OEM	Office of Emergency Management
OES	Office of Emergency Services

OSA	California Office of the State Architect
OSHA	Occupational Safety and Health Administration
PA	Public Assistance
PA/O	Public Assistance Officer
PDD	Presidential Decision Directive
PFO	Principal Federal Officer
PFO	Principal Federal Official
PIO	Public Information Officer
PIS	Public Information System
PNP	Private Nonprofit Organization (see NGO, NVOAD, VOAD)
POC	Point of Contact
POLREP	Pollution Report
PUC	California Public Utilities Commission
PVO	Private Voluntary Organizations
PW	Project Worksheet
R&D	Research and Development
RACES	Radio Amateur Civil Emergency Services
RCOE	Riverside County Office of Education
RCSD	Riverside County Sheriff's Department
REOC	Regional Emergency Operations Center (State OES Region)
RESTAT	Resources Status
RIMS	Response Information Management System (State OES)
RIMS	Resources Inventory Management System (federal)
ROSS	Resource Ordering and Status System
RRCC	Regional Response Coordination Center
RRCC	Regional Response Coordinating Center
SAP	State Assistance Program
SAR	Search and Rescue
SARA	Superfund Amendment Reauthorization Act (Title III)
SBA	Small Business Administration

SCAQMD	South Coast Air Quality Management District
SCC	Sheriff's Communications Center (Los Angeles County)
SCO	State Coordinating Officer
SDO	Standards Development Organizations
SEMS	Standardized Emergency Management System
SFLEO	Senior Federal Law Enforcement Official
SFO	Senior Federal Official
SHMO	State Hazard Mitigation Officer
SIOC	Strategic Information and Operations Center
SITREP	Situation Report
SO	Safety Officer
SOC	State Operations Center
SOP	Standard Operating Procedure
STO	State Training Officer
TEW	Terrorism Early Warning group
TLMA	Transportation and Land Management Agency
UC	Unified Command
USACE	United States Army Corps of Engineers
USAR	Urban Search and Rescue
USDA	U.S. Department of Agriculture
USFA	United States Fire Administration
USGS	United States Geological Survey
VOAD	Volunteer Organizations Active in Disaster (See NGO, PNP, NVOAD)
WMD	Weapons of Mass Destruction

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