COUNTY OF RIVERSIDE

Multi-Jurisdictional

Local Hazard Mitigation Plan

July 2018





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Executive Summary

The purpose of the Riverside County Operational Area Multi-Jurisdictional Local Hazard Mitigation 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 man-made hazards.

The plan 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 Riverside County Emergency Management Department comprised of participating Federal, State and local jurisdictions agencies, special districts, school districts, non-profit communities, universities, businesses, Tribal Leaders, Healthcare Facilities and general public.

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

The plan will be implemented upon FEMA approval.

Plan Adoption/Resolution

The County and its participating jurisdictions will submit plans to Cal OES for review prior to being submitted to 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 resolution.

(See Appendix A for Draft Resolution)

Acknowledgments

County Board of Supervisors:
District 1 – Kevin Jeffries
District 2 – John F. Tavaglione
District 3 – Chuck Washington
District 4 – Manuel Perez
District 5 – Marion Ashley

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Local Hazard Mitigation Plan External Steering Committee (OAPC)
Federal, State and Local Government, Special Districts, Tribal Leaders, Healthcare Facilities, Non-Governmental Organizations, Faith- based organizations, businesses, Emergency Services Coordinators and other key Stakeholders.

Local Hazard Mitigation Internal Planning Steering Committee
Cal OES
Agricultural Commissioner's Office
Environmental Health
Riverside County Animal Services
Riverside County Fire- CAL FIRE
Riverside County Flood Control
Riverside County Human Resources
Riverside County Office of Education
Riverside County University Health System
Riverside County Sheriff's Office
Riverside County Information Technology
Riverside County Transportation and Land Management Agency
SoCal Edison
SoCal Gas
NOAA

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 in the Riverside County Multi-Jurisdictional Hazard Mitigation Plan

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A-17	City of Murrieta	A-37	Moreno Valley USD
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Section 1.0 – Local Hazard Mitigation Plan

1.1 Plan Description

The 2017 Multi-Jurisdictional Local Hazard Mitigation Plan (LHMP) was written with the assistance and cooperation of multiple departments within the County of Riverside and multiple cities, tribes and special districts. This plan is an update to the 2012 LHMP and reaffirms the commitment of the Riverside County Operational Area to reduce risks from natural and other hazards.

Since 1965, Riverside County has had 44 Federal Disaster Declarations. The most recent Federally Declared Disaster was in March, 2017 and was the result of winter storms and flooding. In addition, the county has experienced 22 Governor-Proclaimed State Disasters, with the most recent in February 2017. In 2016, Riverside County was impacted by earthquakes, floods, high winds, high heat and fires. These natural disasters will occur again, many on a yearly basis.

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

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 new 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.

The FEMA Mitigation and Insurance Strategic Plan for 2014-2018 identifies critical goals, objectives, and strategies to enhance the way FEMA carries out its mitigation and insurance mission. The plan is designed to help build and sustain collaboration with Federal, State, Tribal, Territorial, and community partners through a strategic framework that guides day-to-day work leading to more resilient communities nationwide.

The County of Riverside Emergency Management Department shares many of FEMA's goals and objectives including the following:

FEMA Objective 1.2: Provide support to local leaders and tribal officials to strengthen recovery and mitigation core capabilities

"Pursue a proactive approach in building stakeholder relationships FEMA Strategic Plan 2014–2018 with local leaders to help them better identify and address their disaster recovery challenges."

FEMA Objective 1.3: Increase disaster awareness and action by improving communication

"Pre-disaster preparedness communication aims to make the public aware of potential hazard risks and the steps they should take to stay safe when a disaster strikes."

FEMA Objective 4.3: Enhance the effectiveness, financial stability, and affordability of the National Flood Insurance Program

"The National Flood Insurance Program (NFIP) serves as a keystone for national efforts to reduce the loss of life and property from flood disasters…NFIP will explore ways to develop and implement more accurate methods of calculating risk, and place a greater emphasis on cost-effective mitigation as a way of lowering long-term expenses"

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 Pre-Disaster Mitigation (PDM) program is authorized by Section 203 of the Stafford Act, 42 U.S.C. 5133. The PDM program is designed to assist States, Territories, Indian

Tribal governments, and local communities in implementing a sustained pre-disaster natural hazard mitigation program to reduce overall risk to the population and mitigate structures during future hazard events, reducing reliance on Federal assistance during future disasters.

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 new requirements that allow HMGP funds to be used for planning activities, and 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.

The Riverside County Operational Area Multi-Jurisdictional Local Hazard Mitigation Plan (LHMP) supports the values and goals of the Federal Emergency Management Agency, and the California Office of Emergency Services. The 2013 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 County of Riverside Emergency Management Department is also participating in the 2018 State Hazard Mitigation update planning process.

The 2013 State Hazard Mitigation Plan – An Enhanced State Mitigation Plan

The document is a comprehensive update of the 2010 SHMP. It performs the following functions:

1. Documents statewide hazard mitigation systems implemented in California
2. Describes strategies and priorities for future mitigation activities
3. Highlights new hazard mitigation initiatives since the 2010 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
6. Meets state and federal statutory and regulatory requirements for an enhanced State Mitigation Plan

Goals Shared with State Multi-Hazard Mitigation Plan

The Riverside Operational Area's LHMP 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 man-made 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 2012, and the numbers of man-made incidents, the OA will continue to address the large set of man-made, technological and natural hazards. Communication Failure and Cyber Attacks have been added to the 2017 list of hazards.

In developing the original 2005 hazard list, the goal was to create a list by identifying as many hazards as could be found in the county. 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 2012 update used the 2005 hazard list as a reference. The hazards were reassessed to ensure that the threat of the hazard was still viable. The same process was used for the 2017 plan update. The 2017 LHMP Steering Committee met to address each hazard individually. Probability, severity, health systems impact, and mitigation capabilities were all taken into consideration while reorganizing the hazard ranking.

Support of Broader County Vision

The Riverside County Operational Area Multi-Jurisdictional LHMP 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."

The values embodies in the General Plan vision are:

"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
- Man-made 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 Emergency Management Department Mission

The Riverside County Operational Area Multi-Jurisdictional LHMP supports the mission of the Emergency Management Department, through focusing efforts on mitigation actions intended to lessen the impact of natural, man-made, and technological disasters.

EMD Mission:

The mission of the Riverside County Emergency Management Department is to be a leader in emergency management to ensure the safety and security of the residents and visitors of Riverside County and to facilitate and support County Government and stakeholder efforts to mitigate, prepare for, respond to, and recover from natural and human caused emergencies and disasters.

The EMD Director expands on this Mission by stating:

"The Riverside County Emergency Management Department is comprised of dedicated personnel who strive to ensure the safety and security of the residents, businesses and visitors of Riverside County"

1.4 Multi-Jurisdictional Participants

Table 2: Multi-Jurisdictional Participants

Local City Jurisdictions	*City of San Jacinto
*City of Banning	*City of Temecula
*City of Beaumont	*City of Wildomar
*City of Blythe	**Tribes**
*City of Calimesa	Morongo Band of Mission Indians
*City of Canyon Lake	**Special Districts**
*City of Cathedral	*Beaumont Unified School District
*City of Coachella	Desert Sands Unified School District
*City of Corona	Eastern Municipal Water District
*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	Kaiser Hospital - Riverside
*City of Jurupa Valley	*Lake Elsinore Unified School District
*City of La Quinta	Moreno Valley Unified School District
*City of Lake Elsinore	*Perris Union High School District
*City of Murrieta	*Rancho California Water District
*City of Norco	*Riverside Community College
*City of Palm Desert	*Riverside County Office of Education
*City of Palm Spring	*Riverside Unified School District
*City of Perris	*San Jacinto Unified School District
*City of Rancho Mirage	Santa Ana Watershed
*City of Riverside	*Western Municipal Water District

*Participated in 2012 Plan

2017 Cities, Tribes and Special Districts

In the 2005 plan we had a total of 53 cities and special districts that participated: 24 Cities, 1 Tribe, 10 Hospitals, 8 School Districts and 10 special districts.

In the 2012 plan we had a total 53 cities and special districts that participated: 27 Cities, 1 Community Service District, 14 School District/Education, 1 Fire Protection District, 1 Hospital, 1 Sanitary District and 8 Water Districts.

In the 2017 plan, we have a total of 45 cities, special districts and tribes that participated: 26 Cities, 1 Tribe, 10 School District/Education, 1 Hospital, 1 Fire Protection District and 7 Special Districts.

The decrease in participation for the 2017 plan is primarily economic. Several previous participants had expressed that budget cuts have affected their staff and level of dedication participating mitigation efforts with in their jurisdictions.

Section 2.0 – Community Profile

2.1 History

Taking its name from the City of Riverside, the 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 Serranos, the Luisenos, the Cupenos, the Chemehuevi, and the Cahuillas.

When Spain claimed California from the Native Americans the Spaniards began putting a series of missions in what was then called Alta California. The San Gabriel mission claimed lands in what are now Jurupa, Riverside, San Jacinto, and the San Gorgonio Pass, while the San Luis Rey mission claimed land in what are now Lake Elsinore, Temecula, and Murrieta. These lands were used for grazing of the large herds of cattle and sheep that belonged to the missions. In 1776, and again in 1778, Juan Bautista de Anza, an army captain charged with discovering an overland route from the Mexican state of Sonora to San Gabriel and Los Angeles, passed through much of Riverside County and described fertile valleys, lakes, and sub-desert areas.

In 1822, Mexico successfully revolted against Spain, 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 "grants" were called ranchos, and many of the ranchos in Riverside County have lent their names to modern-day locales - Jurupa, San Jacinto, San Gorgonio, Temecula, and La Laguna (Lake Elsinore). The first land grant in what is now Riverside County, Rancho Jurupa, was given to Juan Bandini in 1838.

With the advent of the transcontinental railroad in 1869, land speculators, developers, and colonists came to Southern California. The first colony in what would become Riverside County was Riverside itself. Judge John Wesley North brought a group of associates and co-investors out to Southern California, and founded Riverside on part of the Jurupa Rancho.

By the late 1880's and early 1890's, there was growing discontent between Riverside and San Bernardino, its neighbor 10 miles to the north. There were many differences between the two towns. San Bernardino was predominantly Democratic in nature, allowed saloons, and had been a hot-bed of secessionist sympathy during the Civil War. Riverside was temperance minded (few saloons if any were allowed in Riverside proper) and Republican. After a series of charges about unfair use of tax monies to the benefit

of the City of San Bernardino only, several people from Riverside decided to investigate the possibility of a new county. Joined by San Diego County residents in the Temecula and San Jacinto Valleys and the desert region who were tired of living so far from their county seat, they petitioned the State legislature, held an election, and on May 9, 1893 the County of Riverside officially formed.

The County's early years were linked to the agriculture industry. The navel orange tree was planted and found to be such a success that full-scale planting started. By the time of Riverside County's formation, Riverside had grown to become the wealthiest city per capita in the country, due to the riches of the navel orange.

Further residential developments in Riverside County included Banning and Beaumont in the San Gorgonio Pass; Hemet south of San Jacinto; Moreno Valley east of Riverside; Perris, Lake Elsinore, Murrieta and Temecula along the California Southern Railroad; Palm Springs, Palm Desert, Indio and Coachella along the Southern Pacific route to Yuma; and Blythe on the Colorado River.

The last 35 years have brought dramatic population growth to Riverside County. Between 1980 and 1990, the number of residents grew by over 76% making Riverside the fastest-growing County in California. By 1992, the County was "home" to over 1.3 million residents. The County experienced a growth rate of 7.8 percent from 2010-2015.

The U.S. Census Bureau 2016 estimates show that the County has nearly doubled its population in the last 25 years with the current population at 2.4 million residence. The County population is now larger than that of 16 states, among them, Alaska, Hawaii, Maine, New Mexico, and West Virginia.

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 Colorado River town of Blythe 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 possible 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 in 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 in Riverside County. Riverside County is also home to many famous concerts and 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. 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 “Snow Birds”. 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 who have a second home in a warmer location or whose business can be easily moved from place to place, such as flea market and swap meet vendors. Some snowbirds carry their homes with them, as campers (mounted on bus or truck frames) or as boats following the east coast Intracoastal water-way.

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 37. Riverside County average snowfall is one (1) inch. The average US city gets 25 inches of snow per year. The number of days with any measurable precipitation is 30.

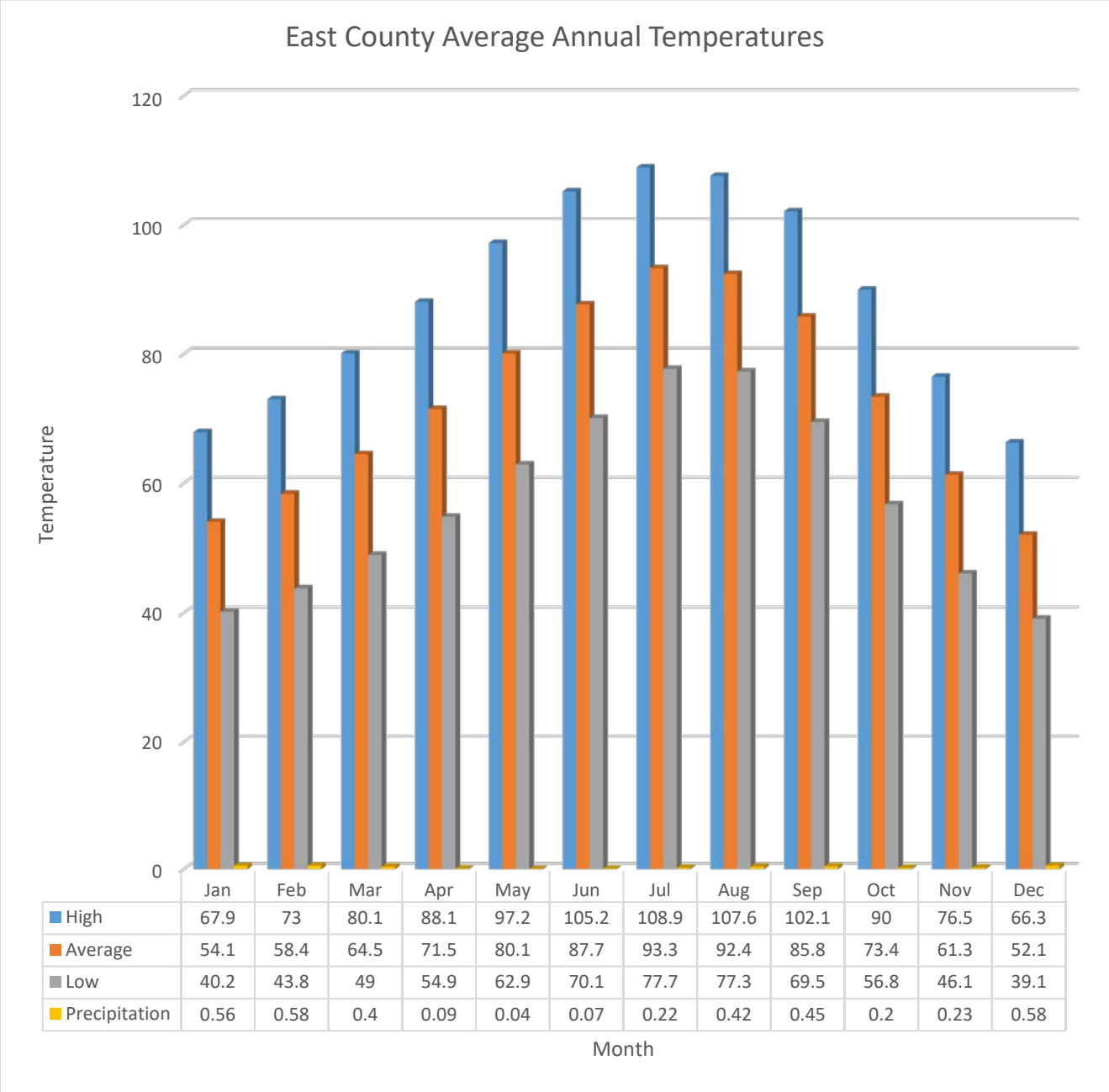
Figure 1: Riverside County Climate

Climate	Riverside, CA	United States
Rainfall (in.)	10.3	36.5
Snowfall (in.)	0.003	25
Precipitation Days	20	100
Sunny Days	277	205
Avg. High	92.8	86.5
Avg. Low	41.6	20.5
UV Index	5.7	4.3
Elevation ft.	1,231	1,060

*Chart is current as of December 2016

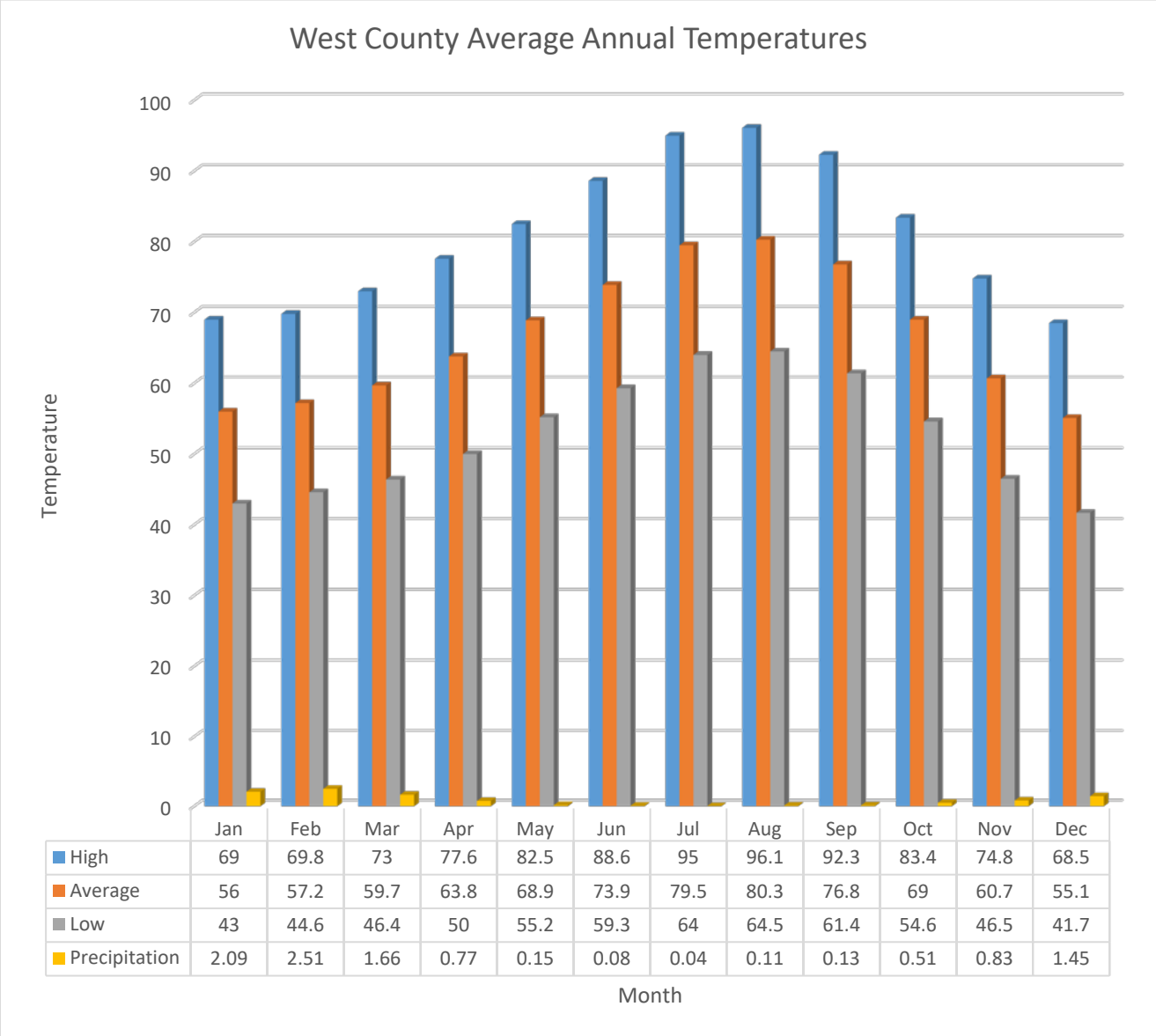
The information regarding the averages of the county does not accurately reflect the drastic differences in climate between the East and West portions of the county. The East County climate is a hot desert atmosphere. It faces average highs in the summer months that reach into the 100's. The West County however, stays closer to the low 90's. The following charts represent the two sides of the county:

Figure 2: East County Average Annual Temperature



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
High	67.9	73	80.1	88.1	97.2	105.2	108.9	107.6	102.1	90	76.5	66.3
Average	54.1	58.4	64.5	71.5	80.1	87.7	93.3	92.4	85.8	73.4	61.3	52.1
Low	40.2	43.8	49	54.9	62.9	70.1	77.7	77.3	69.5	56.8	46.1	39.1
Precipitation	0.56	0.58	0.4	0.09	0.04	0.07	0.22	0.42	0.45	0.2	0.23	0.58

Figure 3: West County Average Annual Temperature



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
High	69	69.8	73	77.6	82.5	88.6	95	96.1	92.3	83.4	74.8	68.5
Average	56	57.2	59.7	63.8	68.9	73.9	79.5	80.3	76.8	69	60.7	55.1
Low	43	44.6	46.4	50	55.2	59.3	64	64.5	61.4	54.6	46.5	41.7
Precipitation	2.09	2.51	1.66	0.77	0.15	0.08	0.04	0.11	0.13	0.51	0.83	1.45

*Charts are based on the most current information gathered from NOAA as of May 2017
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 2.3 million as of January 1, 2016. During this period, the county's population nearly doubled, making it one of the fastest growing counties in California.

Figure 4: Unincorporated Area Population



RIVERSIDE COUNTY

7,295.6 sq.miles — Incorporated in 1893

POPULATION CHARACTERISTICS

Population

1970	459,074 (*1)
1980	663,166 (*1)
1990	1,170,413 (*1)
1995	1,365,500 (*2)
1996	1,391,800 (*2)
1997	1,420,600 (*2)
1998	1,451,400 (*2)
1999	1,490,500 (*2)
2000	1,545,387 (*1)
2001	1,589,708 (*2)
2002	1,655,291 (*2)
2003	1,730,219 (*2)
2004	1,814,485 (*2)
2005	1,895,695 (*2)
2006	1,975,913 (*2)
2007	2,049,902 (*2)
2008	2,102,741 (*2)
2009	2,140,626 (*2)
2010	2,189,641 (*1)
2011	2,205,731 (*2)
2012	2,227,577 (*2)
2013	2,255,059 (*2)

Projections

2020	2,595,259 (*3)
2035	3,354,958 (*3)

2013 Racial & Ethnic Population (*4)

	Number	Percent
White	904,279	40.1%
African American	135,304	6.0%
Asian	130,793	5.8%
Amer Indian/Alaska Native	11,275	0.5%
Hawaiian and Pac Islander	6,765	0.3%
Some Other Races	6,765	0.3%
Two or More Races	45,101	2.0%
Hispanic*	1,014,777	45.0%
Total	2,255,059	100.0%

* Hispanic can be of any race

Vital Statistics (*5)

Year	Total Births	Birth Rate*	Total Death	Death Rate*
2009	31,512	14.7	13,747	6.4
2010	29,417	11.2	13,971	6.3
2011	30,609	13.9	14,638	6.6
2012	30,427	13.6	14,739	6.6

* Rates per 1,000 population

2013 Voter Registration (*6)

	Number	Percent
Democrat	340,932	35.9%
Republican	377,774	41.7%
Other	45,466	4.6%
No Party Preference	169,784	17.7%
Total Registered	933,956	100.0%

2013 Population by Age (*4)

	Number	Percent
< 5	170,643	7.6%
5-9	172,958	7.7%
10-14	184,825	8.2%
15-19	191,278	8.5%
20-24	157,741	7.0%
25-34	291,743	12.9%
35-44	308,615	13.7%
45-54	298,117	13.2%
55-59	116,524	5.2%
60-64	98,312	4.4%
65-74	142,726	6.3%
75-84	90,836	4.0%
85+	30,740	1.4%
Total	2,255,059	100.0%
Median Age:		33.5

2013 Population by Sex (*4)

	Number	Percent
Male	1,123,019	49.8%
Female	1,132,040	50.2%
Total	2,255,059	100.0%

Sources: (*1) Decennial Census, US Census Bureau
(*2) January Estimate, CA State Department of Finance
(*3) Riverside County Projections 2010 (RCP10)
(*4) American Community Survey 2007-2011 5-Year Estimates and CA State Department of Finance
(*5) Riverside County Department of Public Health
(*6) California Secretary of State, February 2013
Note: Totals might not add up due to rounding.

*Chart was developed by Riverside County GIS 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

Figure 5: 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

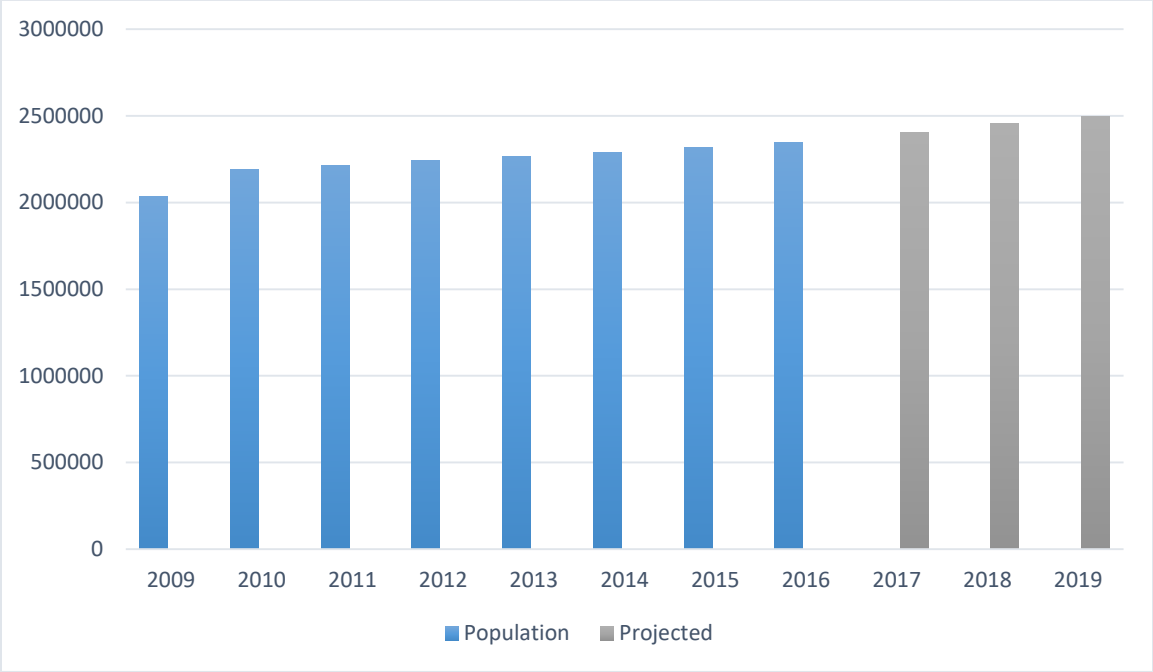
RIVERSIDE COUNTY
Historical Population Estimates, with 2010 Census Counts

City	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Banning	29,603	29,818	30,133	30,332	30,483	30,659	30,834			
Beaumont	36,877	38,201	39,359	40,666	41,864	43,601	45,118			
Blythe	20,817	20,121	20,570	19,894	19,305	19,254	19,813			
Calimesa	7,879	7,923	7,956	7,932	8,040	8,138	8,289			
Canyon Lake	10,561	10,623	10,629	10,543	10,564	10,608	10,681			
Cathedral City	51,200	51,604	52,485	53,163	53,480	53,859	54,261			
Coachella	40,704	41,517	42,426	43,676	44,614	45,001	45,407			
Corona	152,374	153,665	156,178	159,469	162,000	163,317	164,659			
Desert Hot Springs	25,938	27,393	27,973	28,385	28,605	28,794	29,048			
Eastvale	*	54,263	55,881	57,458	59,375	60,825	63,162			
Hemet	78,657	79,412	79,489	78,842	79,176	79,548	80,070			
Indian Wells	4,958	5,012	5,103	5,199	5,265	5,336	5,412			
Indio	76,036	77,168	79,185	83,450	84,655	86,683	88,058			
Jurupa Valley	*	*	95,970	95,731	96,025	96,898	98,177			
Lake Elsinore	51,821	52,484	53,457	56,039	57,368	59,142	61,006			
La Quinta	37,467	37,784	38,100	38,156	38,720	39,311	39,977			
Menifee	77,519	79,472	81,540	83,885	85,455	87,286	89,004			
Moreno Valley	193,365	195,200	198,353	200,889	202,191	203,696	205,383			
Murrieta	103,466	104,636	107,214	110,183	111,226	112,576	113,795			
Norco	27,063	27,062	27,314	27,048	27,037	26,392	26,896			
Palm Desert	48,445	48,957	48,924	48,282	48,494	48,835	49,335			
Palm Springs	44,552	44,943	45,326	45,465	45,818	46,204	46,654			
Perris	68,386	69,693	70,307	70,700	71,743	72,476	73,722			
Rancho Mirage	17,218	17,454	17,583	17,685	17,783	17,920	18,070			
Riverside	303,871	307,207	311,332	316,162	318,511	321,655	324,696			
San Jacinto	44,199	44,616	45,385	46,216	46,649	47,087	47,656			
Temecula	100,097	101,507	103,133	104,145	105,368	107,794	109,064			
Wildomar	32,176	32,543	33,050	33,685	34,271	34,758	35,168			
Incorporated	1,685,249	1,760,278	1,884,355	1,913,280	1,934,085	1,957,653	1,983,415			
Unincorporated	504,392	452,596	355,360	353,269	357,008	360,271	364,413			
County Total	2,189,641	2,212,874	2,239,715	2,266,549	2,291,093	2,317,924	2,347,828			

Source: California Department of Finance

*Current as of May 2017

Figure 6: Riverside County Population Growth - 2009 – 2019



Source: Riverside County Center for Demographics 2017

Table 3 below displays Riverside County's population change and the components of this population change from 1971 through a projection of 2020. 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 in 2016 at roughly 1.3 percent. 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 3: Riverside County Population Change (1971-2020)

RIVERSIDE COUNTY

AVERAGE ANNUAL COMPONENTS OF POPULATION CHANGE

YEAR 1971 - 2010

Years	Change	Births	Deaths	Natural Increase	Net Migration	Net Migration % of Change
1971-75	14580	7602	4960	2642	11938	82%
1976-80	27060	9657	5844	3812	23248	86%
1981-85	33320	13436	7001	6435	26885	81%
1986-90	70380	19310	8691	10679	59761	85%
1991-95	38108	25154	10205	14949	23159	61%
1996-00	36055	23597	11538	12060	23995	67%
2001-05	72862	27475	13088	14387	58475	80%
2006-10	47529	32969	14145	18824	28705	60%
2011-15	23460	30538	15777	14761	22530	96%
2016-20	31471	30303	16474	13829	24883	79%

Source: CA Department of Finance 2016

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 2.3 million people and a total of 649,700 wage and salary jobs. The income per capita is $35,495, and the average salary per worker is $52,144.

In 2015, total employment increased by 2.6 percent across Southern California. Riverside County added a total of 27,200 jobs, representing a growth rate of 4.4 percent. The unemployment rate improved rapidly, falling from 8.3 percent in 2014 to 6.7 percent in 2015.

In 2015, job growth was strongest in construction (+4,600 jobs), 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

- In 2016, total wage and salary employment will increase by 3.0 percent. From 2016 to 2021, total employment will grow at an annual average rate of 1.6 percent.
- Average salaries are currently below the California state average, and will remain so over the foreseeable future. In Riverside County, inflation-adjusted salaries are forecasted to rise by an average of 1.0 percent per year between 2016 and 2021.
- From 2016 to 2021, employment growth will be broad-based, as most sectors will increase by at least 1.5 percent per year. The strongest growth will be observed in education and healthcare, retail trade, and professional services. Combined, these industries will account for 54 percent of net job growth.
- The population is expected to increase by 1.3 percent in 2016. Annual growth in the 2016-2021 period is expected to average 1.5 percent.
- Net migration will gradually increase. An average of 24,883 net migrants are projected to enter the county each year between 2016 and 2021.

- Real per capita income is expected to rise by 2.0 percent in 2016, and increase by an average of 0.9 percent per year between 2016 and 2021.
- Total taxable sales are projected to increase by an average of 2.6 percent per year over the next five years.

- Industrial production will rise by 3.3 percent in 2016. From 2016 to 2021, the growth rate of industrial production is expected to average 2.5 percent per year.

Source: http://www.dot.ca.gov/hq/tpp/offices/eab/index_files/2016/Riverside2016.pdf

Figure 7: 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 Riverside County GIS 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

Figure 8: 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
1999	691,500	653,600	37,900	5.5
2000	680,700	644,200	36,500	5.4
2001	711,100	672,000	39,100	5.5
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

2016 Monthly Labor Force and Employment Data **
County of Riverside

Month	Civilian Labor Force	Employment	Unemployment Number	Unemployment Percent
January	1,041,000	979,400	61,600	5.9
February	1,041,100	979,600	61,400	5.9
March	1,041,400	980,000	61,400	5.9
April	1,036,500	977,300	59,300	5.7
May	1,033,500	978,000	55,500	5.4
June	1,044,300	974,500	69,800	6.7
July	1,049,600	974,600	75,000	7.1
August	1,050,500	978,300	72,200	6.9
September	1,053,800	985,800	68,000	6.5
October	1,059,800	993,200	66,600	6.3
November	1,062,500	1,002,300	60,200	5.7
December*	1,059,400	1,002,900	56,500	5.3

* Preliminary data

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

Source: State of California Employment Development Department.

https://www.rivcoeda.org/LinkClick.aspx?fileticket=POJLaM6rSMQ%3d&tabid=1110

Figure 9: County of Riverside Major Employers

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	21,984	Countywide	County Government
March Air Reserve Base	8,500	March ARB	Military Reserve Base
University of California, Riverside	8,306	Riverside	University
Amazon	7,500	Moreno Valley	E-retalier
Stater Bros. Markets	6,900	Countywide	Supermarkets
Kaiser Permanente Riverside Medical Center	5,300	Riverside	Hospital
Corona-Norco Unified School District	5,098	Corona	School District
Desert Sands Unified School District	4,202	La Quinta	School District
Riverside Unified School District	3,973	Riverside	School District
Pechanga Resort & Casino	3,931	Temecula	Resort Casino
Riverside University Health System - Medical Center	3,600	Moreno Valley	Hospital
Hemet Unified School District	3,468	Hemet	School District
Moreno Valley Unified School District	3,454	Moreno Valley	School District
Eisenhower Medical Center	3,365	Rancho Mirage	Hospital
Morongo Casino, Resort & Spa	3,359	Cabazon	Resort Casino
Temecula Valley Unified School District	2,951	Temecula	School District
Lake Elsinore Unified School District	2,539	Lake Elsinore	School District
City of Riverside	2,500	Riverside	City Government
JW Marriott Desert Springs Resort & Spa	2,304	Palm Desert	Resort & Spa
Palm Springs Unified School District	2,243	Palm Springs	School District
Coachella Valley Unified School District	2,209	Thermal	School District
Agua Caliente Band of Cahuilla Indians	2,152	Palm Springs	Tribal Government/Casinos
Jurupa Unified School District	2,144	Jurupa Valley	School District
Murrieta Valley Unified School District	2,128	Murrieta	School District
Alvord Unified School District	2,113	Riverside	School District
Riverside Community Hospital	2,017	Riverside	Hospital
Abbot Vascular	2,000	Temecula	Medical & Surgical Instruments Manufacturer
Riverside Community College District	1,965	Riverside	Community College District
Desert Regional Medical Center	1,906	Palm Springs	Hospital
Riverside County Office of Education	1,555	Riverside	Education
Naval Surface Warfare Center	1,450	Norco	Naval Weapons Research
Parkview Community Hospital Medical Center	1,439	Riverside	Hospital
Professional Hospital Supply	1,300	Temecula	Medical & Surgical Supplies Distributor
La Quinta Resort & Club	1,233	La Quinta	Resort
Ironwood State Prison	1,150	Blythe	Level I & III Prison
California Rehabilitation Center	1,139	Norco	Level II Prison
Fantasy Springs Resort Casino	1,100	Indio	Resort Casino
Corona Regional Medical Center	1,059	Corona	Hospital
Mt. San Jacinto College	1,016	San Jacinto	Community College District

Source: Employers Listed, Websites & Public Records, 2015

Figure 10: Employment Growth Projections

Industry sector	Thousands of jobs			Change		Percent distribution			Annual rate of change	
	2002	2012	2022	2002–2012	2012–2022	2002	2012	2022	2002 – 2012	2012 – 2022
Total[1]	142,294.9	145,355.8	160,983.7	3,060.9	15,627.9	100.0	100.0	100.0	0.2	1.0
Nonagriculture wage and salary[2]	131,028.3	134,427.6	149,751.3	3,399.3	15,323.7	92.1	92.5	93.0	.3	1.1
Goods producing, excluding agriculture	22,486.7	18,360.3	19,554.2	–4,126.4	1,193.9	15.8	12.6	12.1	–2.0	.6
Mining	512.3	800.5	921.7	288.2	121.2	.4	.6	.6	4.6	1.4
Construction	6,715.7	5,640.9	7,263.0	–1,074.8	1,622.1	4.7	3.9	4.5	–1.7	2.6
Manufacturing	15,258.7	11,918.9	11,369.4	–3,339.8	–549.5	10.7	8.2	7.1	–2.4	–.5
Service providing	108,541.6	116,067.3	130,197.1	7,525.7	14,129.8	76.3	79.9	80.9	.7	1.2
Utilities	596.3	554.2	497.8	–42.1	–56.4	.4	.4	.3	–.7	–1.1
Wholesale trade	5,652.4	5,672.8	6,143.2	20.4	470.4	4.0	3.9	3.8	.0	.8
Retail trade	15,025.1	14,875.3	15,966.2	–149.8	1,090.9	10.6	10.2	9.9	–.1	.7
Transportation and warehousing	4,223.8	4,414.7	4,742.0	190.9	327.3	3.0	3.0	2.9	.4	.7
Information	3,394.6	2,677.6	2,612.4	–717.0	–65.2	2.4	1.8	1.6	–2.3	–.2
Financial activities	7,847.1	7,786.3	8,537.3	–60.8	751.0	5.5	5.4	5.3	–.1	.9
Professional and business services	15,976.2	17,930.2	21,413.0	1,954.0	3,482.8	11.2	12.3	13.3	1.2	1.8
Educational services	2,642.8	3,346.9	4,022.2	704.1	675.3	1.9	2.3	2.5	2.4	1.9
Health care and social assistance	13,555.6	16,971.8	21,965.9	3,416.2	4,994.1	9.5	11.7	13.6	2.3	2.6
Leisure and hospitality	11,986.0	13,745.8	15,035.0	1,759.8	1,289.2	8.4	9.5	9.3	1.4	.9
Other services	6,129.0	6,174.5	6,823.4	45.5	648.9	4.3	4.2	4.2	.1	1.0
Federal government	2,766.0	2,814.0	2,406.5	48.0	–407.5	1.9	1.9	1.5	.2	–1.6
State and local government	18,746.7	19,103.2	20,032.2	356.5	929.0	13.2	13.1	12.4	.2	.5
Agriculture, forestry, fishing, and hunting[3]	2,245.4	2,112.7	1,889.2	–132.7	–223.5	1.6	1.5	1.2	–.6	–1.1
Agriculture wage and salary	1,217.4	1,306.9	1,281.8	89.5	–25.1	.9	.9	.8	.7	–.2
Agriculture self-employed and unpaid family workers	1,028.0	805.8	607.4	–222.2	–198.4	.7	.6	.4	–2.4	–2.8
Nonagriculture self-employed and unpaid family workers	9,021.2	8,815.5	9,343.2	–205.7	527.7	6.3	6.1	5.8	–.2	.6

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

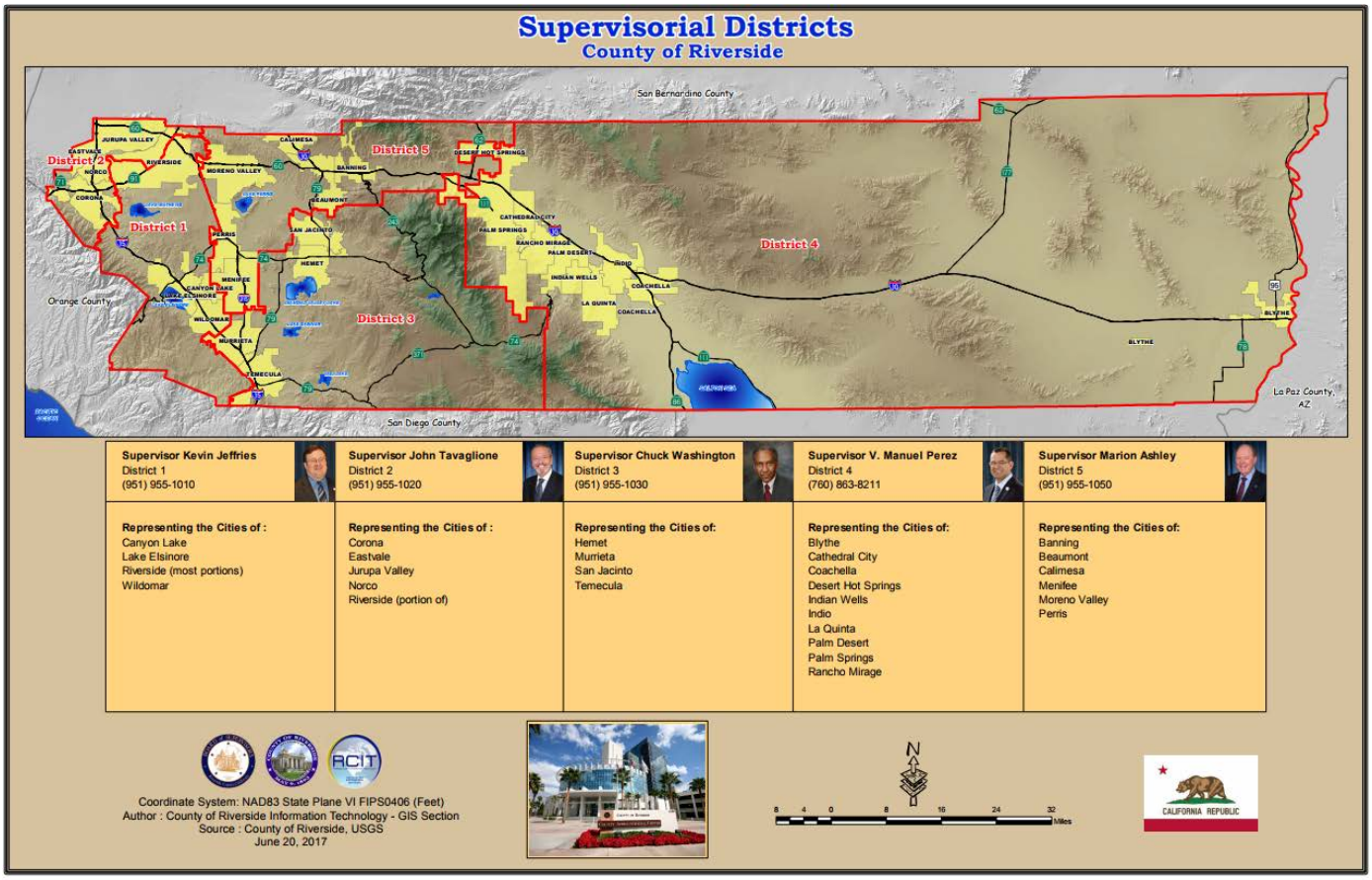
Governing Body

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 2016, the population by districts is the following:

- District 1 (Kevin Jeffries): 458,407
- District 2 (John Tavaglione): 458,372
- District 3 (Chuck Washington): 477,763
- District 4 (Manuel Perez): 467,430
- District 5 (Marion Ashley): 480,820

Map 1: Riverside County Supervisor Districts



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:

- Rural residential
- Single family detached
- Single family attached
- High-density residential (apartments)
- Mobile homes
- Recreational open space
- Other open space
- Heavy industrial
- Warehouse
- Vacant
- Agriculture
- Water
- Utilities
- Public facilities
- Schools
- Retail / Office
- Tourism / Commercial recreation
- Light industrial /Business Park
- Mineral extraction

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:

- Discouragement of urban sprawl;
- Preservation of the physical and economic integrity of agricultural lands;
- Preservation of open space within urban development patterns;
- Orderly formation and development of agencies by shaping local agency boundaries;
- Minimization of agencies providing services to a given area; and
- Utilization of Spheres of Influence to guide future development of agency boundaries.

Examples of development in Riverside County are:

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 with in 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 life-style 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%. 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 health care facility is expected to open in 2023 in Murrieta. The plan is set to develop a 37-acre parcel of land. A press release from Kaiser Permanente, dated April 29, 2016, stated that they have broken ground for the new medical center.

Figure 11: 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 Riverside County GIS 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 4: Housing Projections by City

Housing Units					
Jurisdiction	**2015**	**2020**	**2025**	**2030**	**2035**
Banning	14,611	17,260	20,416	23,177	25,202
Beaumont	17,267	20,787	24,276	27,982	28,958
Blythe	5,947	6,537	6,798	7,046	7,303
Calimesa	5,300	6,804	8,135	9,984	11,858
Canyon Lake	4,549	4,641	4,733	4,825	4,917
Cathedral City	23,627	25,127	26,627	28,127	29,627
Coachella	13,200	19,010	25,200	31,349	36,542
Corona	47,368	48,162	48,974	49,894	50,891
Desert Hot Springs	18,149	20,229	22,251	24,341	26,501
Hemet	45,313	50,507	55,211	60,724	66,199
Indian Wells	5,296	5,450	5,603	5,653	5,706
Indio	32,027	34,321	36,552	38,857	41,240
La Quinta	22,719	23,353	23,913	24,462	24,978
Lake Elsinore	20,833	24,141	27,240	30,092	32,663
Menifee	35,226	40,259	43,870	47,442	51,461
Moreno Valley	59,797	64,427	69,011	74,467	78,065
Murrieta	36,162	37,512	38,861	40,210	41,560
Norco	7,849	8,362	8,719	8,888	9,083
Palm Desert	35,867	37,011	37,954	39,113	40,143
Palm Springs	35,190	36,381	37,671	38,912	40,153
Perris	20,816	24,468	27,845	31,220	34,747
Rancho Mirage	13,834	14,922	16,010	17,098	18,186
Riverside	107,325	113,000	116,883	122,659	126,968
San Jacinto	21,055	26,422	30,142	32,775	35,053
Temecula	35,270	36,321	37,979	38,690	39,400
Wildomar	12,722	14,537	15,837	17,124	18,573
Unincorporated County	186,938	221,346	255,534	286,562	324,571
Riverside County Total	884,258	981,297	1,072,247	1,161,671	1,250,549

Source: Western Riverside Council of Government Council (WRCOG)

2.6 Cities of Riverside County

Riverside County has 28 cities and multiple special districts. All cities, with the exception of Moreno Valley and Menifee are participants in the 2017 LHMP. The City of Jurupa Valley is our newest city and the Planning Commission held its inaugural meeting January 23, 2012.

All of the participating cities, tribes, special districts and school districts attended the workshops, several meetings and assisted with the hazard analysis for the region. The cities and special districts cooperated during the LHMP process, sharing information and discussing the issues that impacted their areas. The discussions increased the knowledge base of all participants in regards to hazards in their areas and across Riverside County. The participants provided insight on additional hazards and concerns their jurisdictions face, but are not “disasters” and are not common across the county.

Participating jurisdictions in the Riverside County LHMP 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 a corporate city 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, and 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 3 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 parade that celebrates Banning's Western heritage.

2.6.2 Beaumont

The City of Beaumont is located in the westernmost portion of Riverside County and is bounded 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. The City straddles the San Gorgonio Pass, the only easterly link with the greater Los Angeles Metropolitan area. Beaumont is located approximately 70 miles northeast of Los Angeles, 21 miles northeast of Riverside, and 21 miles southeast of San Bernardino. The geographic area governed by the Beaumont General Plan includes the City's corporate boundaries as the 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 is proud of its 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, 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 is 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 a corporate city 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 the County seat, the City of Riverside. The City'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 the City. Regional access to the City 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 rest 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 enjoys a comfortable California desert climate with winter temperatures averaging 55-75 degrees, and summer temperatures averaging 85-110 degrees. Annual rainfall is approximately 3 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 located 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 is divided from the City of Yucaipa by the Wildwood Canyon Wash; but politically, "County Line Road" divides the two towns. Much of what was originally

known as "Calimesa" actually lies within the city boundaries of Yucaipa, including "I-Street" (Calimesa) Park, and Calimesa Elementary School. Because State of California law prohibits the incorporation or annexation of cities over county lines, the City was unable to adjoin what was considered the town of Calimesa when it finally incorporated. When Yucaipa incorporated, they included the area outside of the Yucaipa Valley on the "hilltop" or "mesa" that was traditionally known as Calimesa within its city boundaries, so as not to leave a gap of unincorporated area between the two towns. And although the two cities are in separate counties, both Yucaipa and Calimesa share same basic street grid system and addressing, including many named and alphabetical street which extend from Yucaipa well into Calimesa. 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 also extend southwest to the City of Beaumont, California. 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 8,173.

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 in excess of 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 traqueros 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 poten0tial.

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 varies 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 of 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 thunder storms, 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 close 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 en 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. We are approximately a one-hour drive east from metropolitan Orange County and forty-five minutes southwest from Riverside. San

Diego is approximately a one-hour-and-fifteen-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

The City of La Quinta is a corporate city in Riverside County. 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 into the 120 F degrees; however, it’s a “dry” heat. Visitors from colder climates flock 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 (Not Participating)

The City of Menifee is located 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 (Not Participating)

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 an incorporated city in Riverside County. It 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 activities 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 for the production of 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 the only passenger rail service in the Coachella Valley is a three times per week long distance train operated by Amtrak between Los Angeles and Florida. This train is known as the "Sunset Limited". 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 council-members 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, the City 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 Tribla 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 power house 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.

2.8 Special Districts

2.8.1 Participating School Districts

Beaumont Unified School District

The Beaumont Unified School District is located in the westernmost portion of Riverside County and is located at the intersection of Interstate 10 and Interstate 60. The District is west of the city of the Banning, North of the city San Jacinto, east of the city of Calimesa and unincorporated areas of Riverside lie to the north and east. The student population of the school district is 9,719.

Desert Sands Unified School District

The Desert Sands Unified School District is a pre K-12 grade school district located in the heart of Riverside County's Coachella Valley. DSUSD currently has 34 school sites. Included here are 20 elementary schools, 7 middle schools, 6 high schools, and 1 Early Childhood Education Center. Alternative education and continuation programs are offered at two of the district's high schools, Summit/Horizon and Amistad. DSUSD serves the communities of La Quinta, Palm Desert, Indio, Indian Wells, Bermuda Dunes, and portions of Rancho Mirage and Coachella, California. The combined student population of DSUSD is approximately 30,000 students. In addition to the schools, DSUSD also has a District Education Center complex, and Maintenance and Transportation facilities located in the City of La Quinta.

Hemet Unified School District

The HUSD is a public school district in Riverside County in the San Jacinto Valley of California. Broken down into 3 categories of schools, with it is approximately 1,250 certificated staff are employed by the district, along with approximately 1,480 classified employees plus approximately 960 substitutes, the district employs over 3,690. These employees work from our 28 sites and district offices to serve our student enrollment of over 21,700. The District serves the cities of Hemet, Anza, Aguanga, Winchester, and Idyllwild.

Lake Elsinore Unified School District

The Lake Elsinore Unified School District (LEUSD) was formed in 1989 when Elsinore Union High and Elsinore Elementary merged and unified. It covers 140 square miles including the city of Lake Elsinore, Canyon Lake, Wildomar, as well as a portion of North Murrieta including the communities in and around Ortega Highway and Horsethief

Canyon. Lake Elsinore Unified serves several communities with a combined population of approximately 100,000 and specifically educates 22,000 students.

Moreno Valley Unified School District

The Moreno Valley Unified School District is located in the western portion of Riverside County. The District is bound by the City of Perris to the south, and the City of Riverside to west. The District is bounded by the unincorporated areas to the north and east. The student population of the school district is 34,000.

Perris High Unified School District

The Perris Union High School District (PUHSD) is located in the City of Perris, a community fifteen miles southeast of the City of Riverside. PUHSD covers approximately 184 square miles and includes the City of Perris, City of Menifee and the unincorporated communities of Romoland as well as a portion of Nuview.

PUHSD currently educates approximately 9,000 students residing through (1) 7-8 middle school, (3) comprehensive high schools, (2) alternative high school programs and (1) dependent charter military school. The school district also provides adult educational services.

Riverside Community College District (RCCD)

Riverside Community College District is a three-college higher education system serving residents of Riverside and surrounding counties in California. It is the seventh oldest community college in the state and the fifth largest. RCCD colleges are located in the cities for Riverside, Moreno Valley and Norco. The District's service area is over 450 square miles with a wide range of social, economic, and ethnic diversity in one of the most rapidly growing counties in the nation. Colleges and Annex sites sit within 1/2 mile of major California Freeways and Railroad tracks. Riverside Community College District's average enrollment exceeded 35,000.

Riverside County Office of Education (RCOE)

RCOE directly serves over 8,368 students; over 2,100 of those students are classified as special needs students.

RCOE has a total of 138 sites: (4) School of Career Education campuses (Accredited post-secondary occupational training programs); (14) Career Technical Education sites at district school locations; (40) RCOE Alternative Education program sites on school district sites, independent RCOE sites, and detentions; (40) Special Education program sites located on school districts sites, RCOE sites as well as youth/adult Jails/detention

centers; and (22) Head Start / Migrant Head Start sites. Three of which are located in Imperial County with one site approximately 1-mile from the Mexico border.

RCOE provides support and professional development opportunities to (23) school districts comprised of (4) Elementary Districts; (1) High School District; and (18) Unified school districts (totaling over 407 K-12 school sites and representing over 427,000 students, 30,000 of those students are classified as special needs students). In addition to providing services to county school districts, RCOE provides support to: one (1) Tribal school; one (1) California School for the Deaf; four (4) community colleges; and twenty-seven (27) charter schools.

Riverside Unified School District

Riverside Unified School District (RUSD) covers just over 92 square miles and encompasses most of the City of Riverside from Van Buren Blvd. and La Sierra Ave. to the west, the Santa River and County line to the north, the city limits to the east and the unincorporated areas of Lake Mathews and Woodcrest to the south.

Riverside Unified is currently the 15th largest school district in the state serving approximately 42,300 K-12 students. The district has 30 elementary schools, 7 middle schools, 5 comprehensive high schools, two continuation schools, one virtual school, and one special education school. The school district also provides pre-school and adult educational services.

San Jacinto School District

San Jacinto School District is in the City of San Jacinto that encompasses seven (7) elementary schools, three (3) middle schools, one (1) traditional high school, one (1) continuation high school and two (2) pre-schools for a total of 14 schools. The jurisdiction also includes a District Office, Facilities and Operations Department, and Nutrition Services. The San Jacinto Unified School District has a staff number of 1,522 and student population of 9,825. San Jacinto School District has a total population of 11,347.

2.8.2 Fire Protection

Idyllwild Fire District

The Jurisdiction is a Special Fire District located in the unincorporated mountain community of Idyllwild, located in Riverside County. It is approximately 5 square miles in area located about 60 miles east of the county seat, the City of Riverside. The community of Idyllwild is surrounded on all sides by the San Bernardino National Forest and is transected from NE to SW by Strawberry Creek. Even though there is a creek running through the community, there is no land that would be considered “flood plain”.

The "District" is in mountainous terrain running from 5,000' to 6,500' elevation in a mixed conifer forest fuel type. The Clark section of the San Jacinto Fault runs NW to SE and is SW of the community approximately 7 miles at the closest point. The San Jacinto Fault is considered to be the most active fault in Southern California (D.M. Morton and J.C. Matti, USGS 2005, revised 2008)

Idyllwild averages 26 inches of rain per year with some of that falling as snow in three to four storms per winter. Summer thunderstorms also contribute to the rainfall total as well as wildland fires from lightning.

2.8.3 Health Care Facilities

Kaiser

Kaiser Permanente, as a whole, had 10.2 million health plan members, 186,497 employees, 18,652 physicians, 51,010 nurses, 38 medical centers, and 622 medical offices reported in 2015. The non-profit Kaiser Foundation Health Plan and Kaiser Foundation Hospitals entities reported a combined $1.9 billion in net income on $60.7 billion in operating revenues. Each Permanente Medical Group operates as a separate for-profit partnership or professional corporation in its individual territory, and while none publicly reports its financial results, each is primarily funded by reimbursements from its respective regional Kaiser Foundation Health Plan entity. KFHP is one of the largest not for profit organizations in the United States.

Kaiser Permanente Riverside Medical Center is a general medical and surgical hospital in Riverside, CA. Kaiser Permanente Riverside Medical Center has 226 beds and was opened in 1989. Currently, we provide care for over 500,000 members throughout Riverside County.

2.8.4 Water Districts

Eastern Municipal Water District

Eastern Municipal Water District (EMWD), headquartered in Perris, California provides water, wastewater and recycled water service to nearly 800,000 people across a 555 square mile service area from Moreno Valley to Temecula and east to the San Jacinto Valley. EMWD is California's sixth largest water provider and the largest in Riverside County and was established in 1950 through a public vote. It is one of 26 member agencies of The Metropolitan Water District of Southern California. EMWD owns and operates two potable water filtration plants, two groundwater desalination facilities, four regional water reclamation facilities, more than 2,400 miles of potable water pipeline, 1,800 miles of sewer pipeline and 200 miles of recycled water pipeline. EMWD's water

supply sources include local groundwater (potable and desalinated), imported water from the Colorado River and State Water Project systems and recycled water. EMWD also wholesales to seven water agencies within or adjacent to its service area boundaries.

Imperial Irrigation District

Imperial Irrigation District (IID) was formed under the State Water Code and is considered a Special District under the governance structure of the State of California. IID is the energy provider to all of Imperial County and portions of Riverside and San Diego Counties, and is also the raw water provider to all municipalities and agricultural users in Imperial County. Throughout the past several years, the district's water and energy operations have been impacted by severe storms (micro bursts), floods and earthquakes varying in magnitude, with the largest being 7.2 on the Richter scale. Imperial Irrigation District provides service to 100,000 customers in the County of Riverside.

Rancho California Water District

The Rancho California Water District (RCWD) serves the area known as Temecula/Rancho California, which includes the City of Temecula, portions of the City of Murrieta and unincorporated areas of southwest Riverside County. The area served is approximately 156 square miles in area and is 42 miles east of the County seat, the City of Riverside. The population of the RCWD service area was estimated 108,920 in 2015.

High Valleys Water District

The High Valleys Water District, Banning, CA, is located in an unincorporated area known as Twin Pines/Poppet Flats, in Riverside County in the Coachella Valley of California. It is approximately 5 square miles in area and is 44 miles east of the County seat, the City of Riverside. The High Valleys Water District was founded in 1971 and serves the Poppet Flats, Twin Pines and Mt. Edna communities. Since they do not have any natural water resources, they purchase our water (which is already treated) from the City of Banning. The water is pumped up eight (8) miles to the mountain through three separate booster stations, into three storage tanks and 40 miles of pipe and delivered to approximately 225 customers. They have five (5) elected Board members, a Board Secretary, Office Administrative Assistant, a General Manager, two Field Techs, and an on-call/as-needed office assistant. There is no sewer service as the communities are all on septic tanks. Some residents have well-systems, which annual backflow testing is done at those locations.

Santa Ana Watershed

The Santa Ana Watershed Project Authority is a Joint Powers Authority formed in 1969 by Eastern Municipal Water District, Inland Empire Utilities Agency, Orange County Water District, San Bernardino Valley Municipal Water District and the Western Municipal Water District. One of SAWPA's main functions is to operate the Inland Empire Brine Line, a 73-mile large diameter regional brine disposal system created to protect water quality in the Santa Ana River and its tributaries. The Brine Line is located in both San Bernardino and Riverside Counties. The Brine Line collects high salt discharges from municipal groundwater treatment plants, power plants, various industries and it serves as an emergency connection to several municipal wastewater treatment plants. Currently, there are a total of 32 active facilities discharging to the Brine Line. All flows collected by the Inland Empire Brine Line are conveyed to Orange County Sanitation District Facilities for treatment and disposal.

The Inland Empire Brine Line serves the portion of the Santa Ana River Watershed within Riverside (1,244 sq. miles) and San Bernardino (1,014 sq. miles) Counties. According to the 2010 U.S. Census, the total population within the Inland Empire Brine Line service area is 3,415,953 inhabitants: 1,686,024 in Riverside County and 1,729,929 in San Bernardino County.

Western Municipal Water District

Western Municipal Water District is a Special District in Riverside County in the Inland Empire of California. It services approximately 510 square miles in area and serves portions of the Cities of Riverside, Corona, Perris, Murrieta, and Norco, as well as unincorporated areas of Western Riverside County. The District has areas adjacent to Orange County on its western boundary, San Bernardino County on its north and eastern boundaries, and San Diego County to the south. The Burlington Northern & Santa Fe Railroad and California State Highways 90 and 215 both run alongside sections of the perimeter of the District in Riverside and Perris. Interstate Highway 15 runs along a section of the District's service areas near Murrieta and Corona. The Santa Ana River, a waterway that starts in the Mountains and runs through the cities of Riverside, Corona and Norco, is close to the District's northern boundary. Murrieta Creek runs through the District's service area in Murrieta.

Western Municipal Water District was established on January 19, 1954. On November 12, 1954 Western was annexed to and became a member of Metropolitan Water District of Southern California providing water for mostly agricultural use. In the early 1960's Western began retail water service to domestic water customers. Western originally depended on Colorado River water and in 1979 it changed its primary source of water to

the State Water Project drawing water from Northern California. Today the District serves over 25,000 retail and eight wholesale customers.

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 man-made and technological hazards to the extent possible. In the 2012 Multi-Jurisdictional Local Hazard Mitigation Plan, the Riverside County Operational Area (RCOA) addressed an expansive set of hazards. Upon review of the hazards since 2012 and the number of incidents that had man-made causes, the Riverside County OA will continue to address the large set of man-made and technological hazards.

The 2017 Riverside County Multi-Jurisdictional Local Hazard Mitigation Plan update review process initially started August 2016.

3.1 Planning Process Overview

The Riverside County Emergency Management Department (EMD) formed an internal EMD Planning Team, a Local Hazard Mitigation Plan Steering Committee and continued to utilize the Operational Area Planning Committee (OAPC) as an external planning committee.

Each Planning Team was comprised of various EMD personnel, Riverside County Department leaders, emergency managers and key personnel to discuss the most practical methodology to review and update Riverside County's 2017 plan.

A plan template and other various tools were developed and sent to participants to assist them with creating a new plan or to review and update their existing plan. The County held multiple meetings, workshops and conference calls to assist participants with drafting or updating plans.

(See Appendix B for Participants).

3.2 Hazard Mitigation 2017 Planning

Riverside County recognizes the importance of involving all of the stakeholders and utilized the following planning methodologies:

- Reviewed the process of risk assessments and hazard identification with all submitting participants
- Reviewed mitigation actions that are proposed, pending and completed
- Encouraged participation with the planning process by holding community meetings, individual workshops and conference calls
- Coordinated staffing resources to cities and special districts to assist with plan development and provided pertinent detailed information specific to jurisdictions
- Posted information on official Riverside County Emergency Management Department websites
    - RivCoEMD.org
    - RivCoReady.org
- Provided a list of upcoming mitigation training information on Riverside County Public Health Emergency Preparedness and Response (PHEPR) website
    - RivCoPHEPR.org

Project Pre-Plan Research:

- Reviewed the 2012 LHMP, Crosswalk and Comments from Reviewer
- Reviewed the 2013 Local Mitigation Planning Handbook (FEMA)
- Reviewed the 2011 Local Mitigation Plan Review Guide
- Reviewed the 2013 State of California Multi-Hazard Mitigation Plan
- Identified gaps and discuss findings with management team
- Determined resolutions for gaps and discuss what updates are necessary

Project Plan

- Continually update the Operational Area Plan
- Perpetual maintenance of Local Hazard Mitigation Plan
- Engage all participants through outreach efforts
- Submittal of participant annex and worksheets

3.3 2012 LHMP Tools

The LHMP Steering Committee determined the best approach was to use the tools that were developed in 2009 to assist in updating the LHMP. The following worksheets and

tools were utilized as a reference for each jurisdiction to evaluate its capabilities, determine its need 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
- Provided website: http://myplan.calema.ca.gov
- EMD personnel assigned to assist with the development of the plan and provide additional information when necessary
- Hosted and provided facilities for workshops
- Developed and provided step by step instruction guides
- Provided assistance via email, phone calls and one-on-one meetings
- Assisted jurisdictions obtain/create maps
- Provided maps for individual jurisdictions
- Provided incident information for their jurisdiction or authority
- Provided information on mitigation trainings and seminars

3.4 Participating Jurisdictions Planning Process

The 2017 LHMP has a variety of participants and parties with vested interest across the County. The submitting participants include cities, education, fire protection, hospital, and water districts.

The Participants List is found in Section 1.4 or Appendix B: Participants.

The goals of the Operational Area are to ensure the plan is comprehensive and easy to utilize and implement. The final 2017 Multi-Jurisdictional Local Hazard Mitigation Plan consists of the Riverside County Operational Area Plan and the individual Annexes. Each annex is designed to be a stand-alone Local Hazard Mitigation Plan for the cities and special districts, yet clearly show a linkage to the Operational Area Plan, other County Plans (e.g. County General Plan) and the State Hazard Mitigation Plan. (See Annexes A1-46)

The 2017 LHMP outreach presentations were given in 12 community outreach meetings, 12 LHMP workshops and 32 meetings were held with individual cities or special districts. (See Appendix D)

During the LHMP process, participants were provided directions on how to complete the "Annex" and other templates. Resources provided to participants included: worksheets, templates, examples, websites, mapping sites and other resources to assist in the process. Riverside County Emergency Management Department personnel were available to assist each participating jurisdiction during the LHMP process.

Additional information and resources were emailed to the participants as they became available through "E-Blasts" (mass email sent to every participant). An example is the "My Plan" mapping website on the Hazard Mitigation Portal for Cal OES.

A flexible timeline was presented in the meetings, and sent out via email as changes occurred. The review process of the draft annexes is outlined as follows:

- Participants submitted draft LHMP via email to EMD for review and comments.
- EMD reviewed plans, crosswalks and inventory worksheet to ensure completeness
- Checklists were utilized to document all components of the plans were complete and accompanied with all worksheets and attachments referenced in the plan
- Acknowledgement and checklists were sent back to the participants noting identified gap findings and comments. We requested additional information as necessary
- After revisions were completed by participants, the draft was resubmitted to EMD for adoption into the Multi-Jurisdictional Local Hazard Mitigation Plan
- All correspondence, meetings, and conference calls were recorded in a database to track status of plan

3.5 Regional Planning Process (Riverside County Operational Area)

The Operational Area began the regional planning process by creating the EMD Planning Team who has extensive experience in Emergency Management and vast knowledge of the hazards and mitigation efforts in Riverside County.

EMD's external LHMP Steering Committee included EMD Management and the Operational Area Planning Committee (OAPC). The committee includes representatives from EMD, the Board of Supervisors, city emergency managers, city elected officials, tribal representatives, school districts and special districts. The initial coordination of the LHMP update process was presented to the OAPC attendees and letters of commitment and participation were sent via email to reginal stakeholders through the Operational Area Planning Committee distribution list.

The quarterly Operational Area Planning Committee (OAPC) meetings are intended to engage:

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

The Operational Area Planning Committee (OAPC) Mission:

- To provide facilities, systems, and emergency management training for the officials of the Riverside County Operational Area, including County and City government personnel and participating special districts.
- To effectively and efficiently manage a disaster affecting jurisdictions within the Riverside County Operational Area (Govt. Code 8550 et. seq.).

The Riverside County Operational Area is governed by the Board of Supervisors and the Operational Area Planning Committee (OAPC). OAPC meets quarterly.

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., Homeland Security, Buffer Zone Protection Plan grant programs, Local Hazard Mitigation Steering Committee, Mass Care and Shelter Task Force and Community Emergency Response Team (CERT) Program Manager Committee.

Please see Appendix D: Meetings for list of OAPC attendees and sign-in sheets.

3.6 EMD Planning Team

The internal EMD Planning Team consists of the EMD Management and key personnel of EMD. The job classifications of the committee included:

- Director
- Deputy Director
- Program Chief II

- Emergency Services Manager
- Program Coordinator II
- Emergency Services Coordinators (7)
- Emergency Medical Services Specialist (3)
- Senior Health Educator
- Health Education Assistant
- Volunteer Services Program Manager
- Grants Personnel (Administrative Services Analyst II, Contracts and Grants Analyst and Account Technician II)
- Office Assistant III
- Secretary

EMD as a whole department is structured to resemble the Incident Command System (ISC) Organizational Chart. There are four divisions; Preparedness, Operations, Business and Finance, and Emergency Medical Services. The Department is able to expand or contact similarly to ICS and places an importance on Span of Control. The following pages have figures of the Emergency Management Department Organizational Chart.

Figure 12: Riverside County Emergency Management Department Organizational Chart:

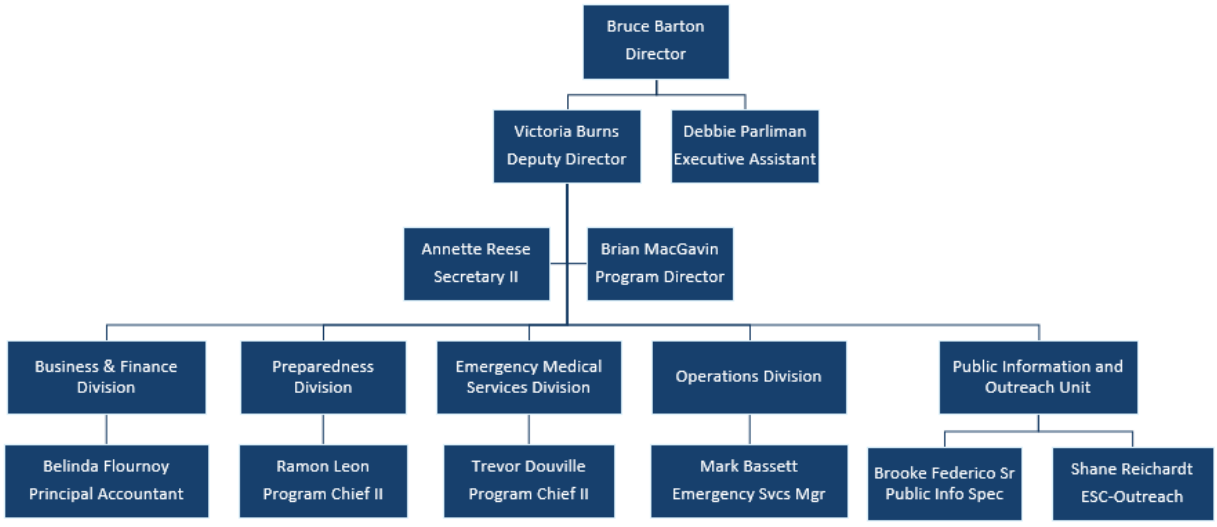


Figure 13: EMD Preparedness Division

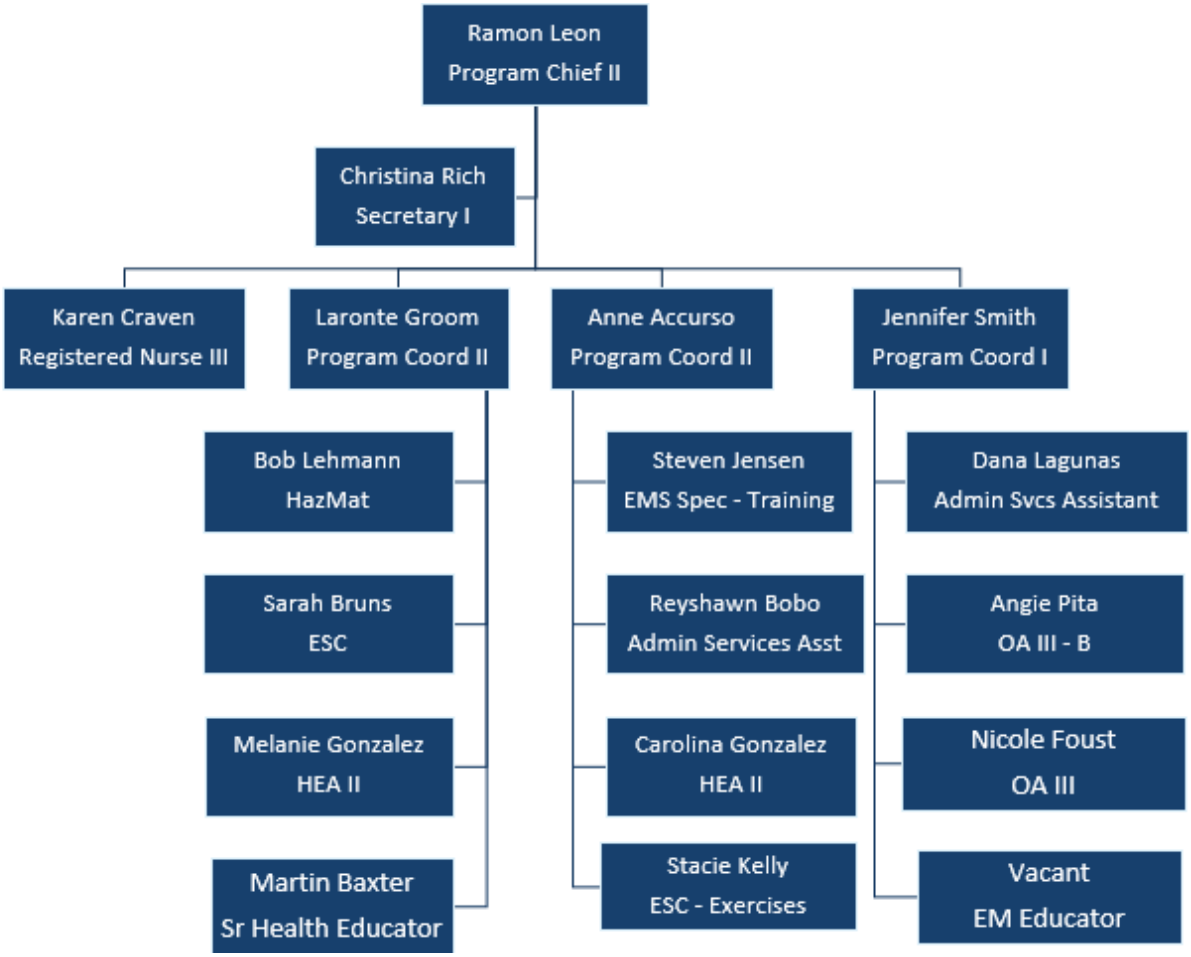


Figure 14: EMD Operations Division

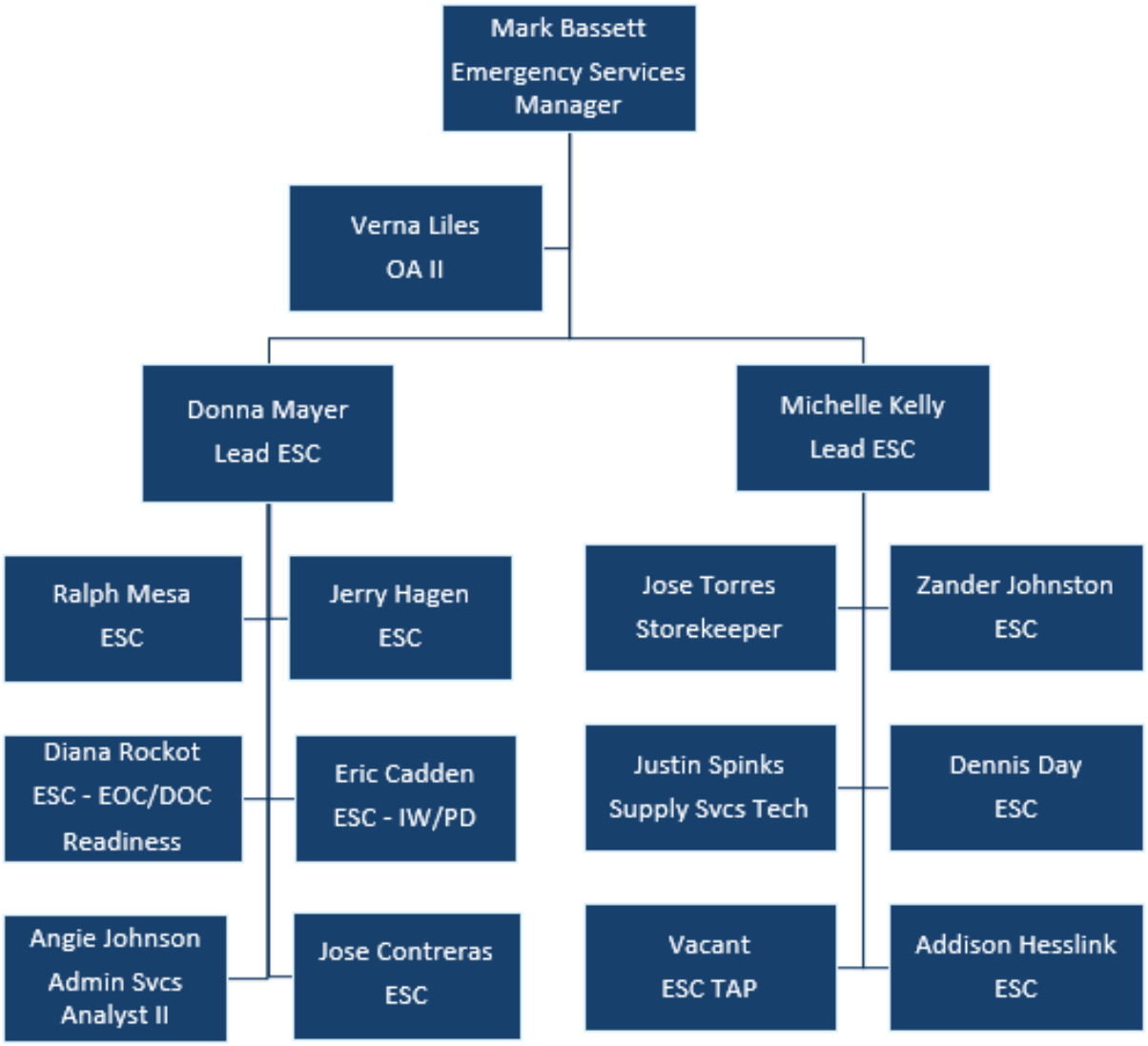


Figure 15: EMD Riverside Emergency Medical Services Agency Division

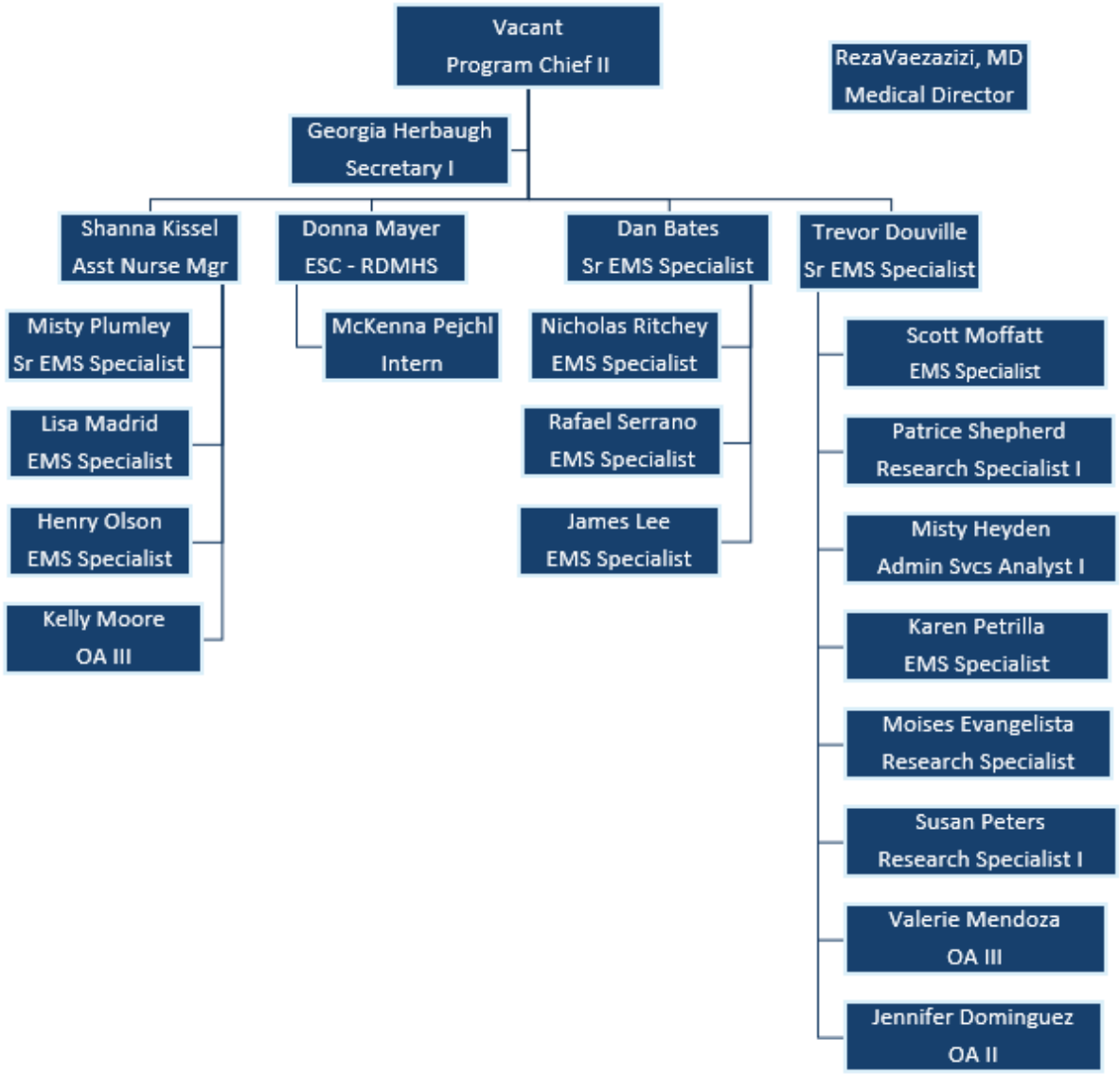
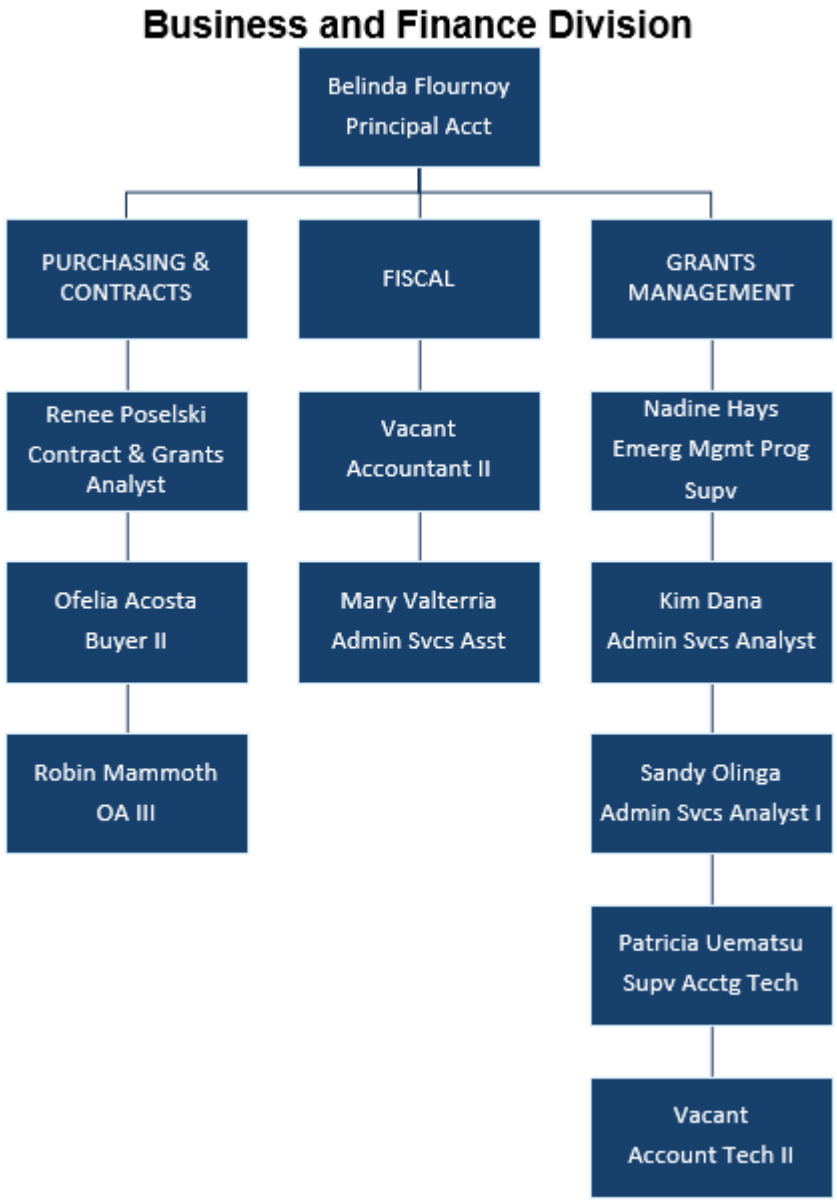


Figure 16: EMD Business and Finance Division



3.7 LHMP Steering Committee Partners

Riverside County recognizes that any successful planning activity, such as the development of a comprehensive plan, involves bringing together a cross-section of the public to reach consensus on how to achieve a desired outcome or resolve a community problem. Using this inclusive process, the public gains a better understanding of the problem or issue and strives to develop a vision along with goals, priorities, and actions.

The result is a common set of community values and widespread support for directing financial, technical, and human resources to an agreed upon course of action, usually identified in a plan. The same is true for mitigation planning. An effective and open public involvement process ensures that all citizens understand risks and vulnerability so that they will work with the jurisdiction and support policies, actions and tools that over the long-term will lead to reduction and/or eliminate long-term risk to human life and property in the event of a disaster or hazard.

An introductory meeting was held with County Department leaders and a presentation given to develop a planning and review process. The following table identifies the agencies that were represented.

Table 5: Internal Steering Committee Partnering Agencies

DEPARTMENTS	POSITION	TOPIC
Agricultural Commissioner's Office	Deputy Ag Commissioner	Insect Infestation, Drought
Animal Services	Commissioner of Field Services, Lieutenant of Field Services	Animals affected
Assessor's Office	Secretary	Population and Building Data
Cal OES	Emergency Services Coordinator	Drought, Earthquake, Insect Infestation, State Representative
Economic Development Agency	Aviation Facilities Specialist/Grants, Aviation Secretary, Assistant Director, Facilities Management Division	Population and Demographics

Emergency Management Department	Program Director, Program Coordinator II, Emergency Services Coordinator, Health Education Assistant, Office Assistant	Goals and Objectives, Nuclear, Power Outage, Pipeline, Communication Failure, Cyber Attack, Extreme Weather, Landslides, Aqueduct
Environmental Health	Deputy Director	Hazardous Materials, Earthquake
Flood Control	Principle Engineer	Dam failure, Flood Hazard
Imperial Irrigation Water District	Emergency Services Coordinator	Aqueduct, Power Outage
NOAA	Acting Meteorologist In Charge	Extreme Weather, Drought
Public Health	Branch Chief	Pandemic and Disease/Contamination,
RC-HR / County Hospitals	Safety Coordinator	Health Care Facilities, Health Impact, Behavior Health
Riverside County Fire	Chief, Division Chief	Wildfire, Pipeline, Transportation and Hazardous Materials
Riverside County IT	Deputy Chief Information Security Officer, Chief Information Security Officer, Information Technology Officer II, Supervising Communications Analyst	Communication Failure and Cyber Attack
Riverside County Office of Education	Safety, Emergency Preparedness Coordinator	Schools, Shelters, Critical Facilities
Sheriff's Office	Sergeant	Civil unrest, Jails, Terrorism
SoCal Edison	Local Public Affairs Officer	Power Outages
SoCal Gas	Public Affairs Manager	Pipeline
Transportation and Land Management Agency	Chief Engineering Geologist, Admin Services Manager	Earthquake, Landslide, GIS, General plan references

Various portions of the 2012 plan included information that was provided by internal county departments. These sections were highlighted and given to the originating departments for review, comments, and updates by utilizing the following methodology:

- Review information provided and identify necessary corrections for updates
- Review definition for hazards to ensure accuracy
- Provide any additional incidents that occurred between 2012 to present
- For revisions or updates, 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
- Facilitate discussions for each hazard prioritization and mitigation measure
- Develop a group or team from your department to review the document and changes prior to sending the information back to EMD
- Contact EMD to answer any questions or to provide additional comments
- Provide updated maps
- Return all revisions to EMD

The Transportation and Land Management Agency (TLMA) provided updated county-wide maps that had been included in the 2012 Multi-Jurisdictional Plan and the County's 2015 General Plan.

As part of the planning process, a review of the unincorporated area was conducted to assess existing and new hazards through utilization of MyPlan though Cal OES.

Emergency Management Agencies in the neighboring and surrounding counties were contacted to discuss their mitigation efforts and plans, inclusive of:

- Orange County
- San Bernardino County
- San Diego County
- La Paz County (Arizona)

Outreach was conducted with tribal communities in Riverside County. Most of the tribes have completed Tribal Hazard Mitigation Plans. The participating tribe that joined the County in the 2017 update expressed their intent to build a stronger partnership with the County.

(See Section 2.7 for all tribes located in Riverside County)

3.8 Public Outreach

Public notice of the LHMP update was posted on the Emergency Management Department Website (RivCoEMD.org), Twitter and announced at various community meetings throughout the County. All meetings were open to the public and allowed public comment. The audience represented various vested individuals who provided input, insight, and concerns regarding the hazards affecting their specific communities. Comments made were regarding the incorporation of particular hazards that the plan already addresses.

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

In an attempt to seek public comment postcards with LHMP and National Flood Insurance Program (NFIP) information was distributed thought the County. The post cards will be presented at County owned Fire stations as well as community events. Every year during National Preparedness Month the postcards will be distributed again to continue to seek comments throughout the plan cycle. English and Spanish versions were available. For 2017 National Preparedness Month locations where postcards were distributed, please see Appendix D.

Figure 17: EMD LHMP Website

LHMP URL: http://www.rivcoemd.org/LHMP

HOME ABOUT US PROGRAMS EMS/REMSA NEWS EVENTS/TRAINING HAZARD MITIGATION PLAN

CONTACT US

Local Hazard Mitigation Plan

Overview

The County of Riverside is updating the Local Hazard Mitigation Plan (LHMP) to reduce or eliminate long-term risks to our community. Some of these risks include: earthquakes, pandemic flu, and wild land fires. This plan is required by the Disaster Mitigation Act of 2000 to be eligible for various federally funded grants and post disaster assistance.

Purpose

The plan aims to reduce the impact of a disaster by identifying hazards and developing ways to decrease their impact. Risk assessments rate hazards with the greatest potential impact to the community. In addition, long-term prevention or protection steps are developed to lessen the impact of the hazard. This plan creates awareness of hazards, threats, and vulnerabilities within the community, and paves a path forward for jurisdictions to prepare for local disasters.

Scope

The LHMP Steering Committee gathers information and updates the plan using a whole community approach by engaging local jurisdictions, private sector organizations and community partners. The whole community approach involves the entire community in disaster and hazard planning.

Objectives

Reduce loss of life and injuries.
Reduce hazard related property losses
Protect the environment.
Coordinate disaster planning and integrate public policy.
Improve community and agency knowledge and education of hazards.



To read the 2012 County of Riverside Local Hazard Mitigation Plan, click the link below.
2012 Local Hazard Mitigation Plan.pdf

GET IN TOUCH Call us at (951) 358-7100 or CONTACT US

Figure 18: Twitter Post

Twitter URL:
https://twitter.com/RivCoReady?ref_src=twsrc%5Etfw&ref_url=http%3A%2F%2Frivcoemd.org%2Frivcoready%2F



Figure 19 LHMP Postcard Side 1



Figure 20 LHMP Postcard Side 2



Figure 21: LHMP Spanish Postcard Side 1



Figure 22: LHMP Spanish Postcard Side 2



3.8.1 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 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 plan participants of the purpose and need for updating the countywide hazard mitigation plan. An initial meeting was held with key community representatives to discuss the plan update process. The initial jurisdiction kick-off meetings were held on December 6th, 8th, 13th and 15th in 2016. In 2017 workshops were then held the first two weeks of February and June. FEMA's two day course G-318 (Mitigation Planning for Local and Tribal Communities) was hosted by EMD on April 3rd and 4th.

Table 6: Table of Presentations and Meetings

The following table documents public outreach efforts and community meetings:

Public Outreach Presentations and Updates				
Date	**Name of Meeting, Location**	**Type of Presentation**	**Number Attending**	**Hours**
6/22/2016	Western Riverside Emergency Council (WREC) Meeting, Riverside	Informed Council of upcoming Plan update and encouraged participation	19	20 mins.
7/14/2016	Operational Area Planning Committee (OAPC) Meeting, Beaumont	Informed OA on upcoming Plan to update	163	15 mins
9/19/2016	Palo Verde COMM. Meeting, Blythe, CA.	LHMP discussion, Local Hazard Mitigation Plan update process, encouraged East County participation and Public Outreach	16	1
9/29/2016	Email Distribution #1	Email blast, Distributed contact verification emails for partnering jurisdictions and agencies. Provided LHMP informational guides and resources.	_	_

10/6/2016	Local Hazard Mitigation Plan Steering Committee Kick-Off for County Departments	Overview of Hazard Mitigation FEMA 2011 LHMP Review Guide Update Process County Inventory Checklist County Risk Assessment Participants, New, Returning, and Not Participating	19	2
10/11/2016	Emergency Management Project Committee	Project Overview, LHMP introduction, planning process	34	10 mins.
10/13/2016	Operational Area Planning Committee (OAPC) Meeting, Beaumont	Updated OA on progress of update, offered participants opportunity to reach out to county for technical support, offered public opportunity to ask questions and provide comment (no comments made)	64	2
10/19/2016	Steering Committee Email Distribution #1	Informed the members of the google drive that contains LHMP documentation for additional support Informed about the next steps and what about the next meeting date Provided contact information for EMD LHMP staff	_	_
12/1/2016	Email Distribution #2	Invitation to LHMP Template workshop, update on county hazard identification/ranking, and general information on where they should be in the update process	_	_
12/6/2016	Tribal Workshop, Riverside	Overview of Hazard Mitigation FEMA 2011 LHMP Review Guide County Update Process and Progress Mitigation Websites and Resources Technical Support	7	1
12/8/2016	City Workshop, Riverside	Overview of Hazard Mitigation FEMA 2011 LHMP Review Guide County Update Process and Progress Mitigation Websites and	15	2

		Resources Technical Support		
12/8/2016	Mountain Emergency Communications COMM. Meeting, Idyllwild, CA	LHMP discussion, Local Hazard Mitigation Plan update process	7	2
12/13/2016	Special District Workshop, Riverside	Overview of Hazard Mitigation FEMA 2011 LHMP Review Guide County Update Process and Progress Mitigation Websites and Resources Technical Support	8	1
12/15/2016	School District Workshop, Riverside	Overview of Hazard Mitigation FEMA 2011 LHMP Review Guide County Update Process and Progress Mitigation Websites and Resources Technical Support	7	2.5
12/15/2016	Northwest COMM. Meeting, Jurupa Valley, CA	LHMP discussion, Local Hazard Mitigation Plan update process	12	2
12/20/2016	Southwest COMM. Meeting, Murrieta, CA	LHMP discussion, Local Hazard Mitigation Plan update process	6	2
12/29/2016	Steering Committee Email Distribution #2	Sent each member questions about specific hazards that pertained to the department they work for	_	_
1/4/2017	Email Distribution #3	Informed LHMP participants of additional LHMP workshops that will be hosted to provide further assistance	_	_
1/11/2017	Local Hazard Mitigation Plan Steering Committee, Riverside	Group Discussion, Hazard Identification/Ranking Final Review, Mitigation Actions and Strategies Brainstorm	16	2

1/12/2017	Operational Area Planning Committee (OAPC) Meeting, Beaumont	Updated OA on progress of update, offered participants opportunity to reach out to county for technical support, offered public opportunity to ask questions and provide comment (no comments made)	74	2
1/19/2016	Steering Committee Email Distribution #3	Thanked all members for participating in the previous meeting. Provided the risk scores of the hazards that were discussed at the previous meeting. Provided the most current updates for the mitigation actions from 2012 & asked for each of them to provide new actions for current county hazards. Informed about the next meeting date	_	_
2/7/2017	City Workshop, Riverside	Answered LHMP questions & concerns. Provided additional assistance if needed Reviewed LHMP drafts if needed	10	1
2/8/2017	School District Workshop, Riverside	Answered LHMP questions & concerns. Provided additional assistance if needed. Reviewed LHMP drafts if needed	2	1
2/9/2017	Special District Workshop, Riverside	Answered LHMP questions & concerns Provided additional assistance if needed Reviewed LHMP drafts if needed	4	1
2/14/2017	Email Distribution #4	Informed LHMP participants about the final 2017 LHMP County Hazard Ranking. Talked about a possible LHMP Training that EMD is deciding on hosting Informed about the Senate Bills 1000 & 379. Provided a link to help participants obtain maps for their jurisdiction if they are having trouble with Hazus	_	_

2/23/2017	Email Distribution #5	Informed LHMP participants about the cancellation of the April workshops due to the substation of having the LHMP FEMA Training. Informed about the confirmation of the FEMA G-318 Training that will be hosted April 3-4 and provided the sign-up link. Informed that the June workshops are still going to be held to provide any additional assistance on the plan	_	_
2/27/2017	Riverside County Emergency Managers Committee	Provided Cities and various County Departments information on the status of the update. Offered information on how committee participants could become involved in the planning process		2
3/1/2017	Steering Committee Reminder Email	Reminded members that the date for submitting new mitigation actions for the current top 10 county hazards was approaching	_	_
3/15/2017	Palo Verde COMM. Meeting, Blythe, CA	LHMP discussion, Local Hazard Mitigation Plan update process	18	1.5
4/5/17	Operational Area Planning Committee and Annual Disaster Council Meeting	Updated OA on progress of update, offered participants opportunity to reach out to county for technical support, offered public opportunity to ask questions and provide comment		2
4/21/2017	Steering Committee Email Distribution #4	Provided minutes from previous meeting, informed about reviewing LHMP mitigation actions and goals/objectives, sent calendar invite for next meeting	_	_
4/24/2017	Steering Committee Email	Sent selected committee members to provide input on LHMP hazard profiles depending on the hazard that corresponds to the department they represent	_	_

6/5/2017	Tribal Workshop, Riverside	Answered LHMP questions & concerns. Provided additional assistance if needed Reviewed LHMP drafts if needed	4	1
6/6/2017	City Workshop, Riverside	Answered LHMP questions & concerns. Provided additional assistance if needed Reviewed LHMP drafts if needed	8	1
6/7/2017	School District Workshop, Riverside	Answered LHMP questions & concerns. Provided additional assistance if needed Reviewed LHMP drafts if needed	6	1
6/8/2017	Special District Workshop, Riverside	Answered LHMP questions & concerns, Provided additional assistance if needed Reviewed LHMP drafts if needed	6	1
7/13/2017	Operational Area Planning Committee (OAPC) Meeting, Beaumont	Updated OA on progress of update, offered participants opportunity to reach out to county for technical support, offered public opportunity to ask questions and provide comment (no comments made)		2
8/17/2017	Local Hazard Mitigation Plan Steering Committee, Riverside	Review completed sections for finalization	10	1
9/2/2017	Indio Preparedness Month Booth, Home Depot, at 42100 Jackson Street from 9 a.m. - 12 p.m.	Personal preparedness and mitigation information		3
9/5/2017	Twitter Post	LHMP and NFIP information		
9/9/2017	Riverside Preparedness Month Booth, Galleria at Tyler, 1299 Galleria at Tyler from 11 a.m. - 3 p.m.	Personal preparedness and mitigation information		4
9/9/2017	Farm Barn, Wildomar Preparedness and Mitigation Presentation	Personal preparedness and mitigation information		1
9/12/2017	County Preparedness Month Booth, County of Riverside Administration Center, 4080 Lemon Street, from 10:30 a.m. - 1:30 p.m.	Personal preparedness and mitigation information		5

9/16/2017	Lake Elsinore Preparedness Month Booth, 710 W. Graham Ave., Lake Elsinore, CA	Personal preparedness and mitigation information		4
9/16/2017	Perris Preparedness Month Booth, Walmart, 1800 N. Perris Blvd from 8 a.m. - 12 p.m.	Personal preparedness and mitigation information		4
9/23/2017	Jurupa Valley Preparedness Month Booth, K-Mart, 7840 Limonite Avenue from 8 a.m. - 12 p.m.	Personal preparedness and mitigation information		4
9/30/2017	Hemet Preparedness Month Booth, Hemet Valley Mall, 2200 W. Florida Ave. from 8 a.m. - 12 p.m.	Personal preparedness and mitigation information		4

Table 7: Participant Meetings

The following table documents participant facilitated meetings:

LHMP Meetings Attended				
Date	**Location**	**Type of Meeting**	**Number Attending**	**Hours**
8/24/2016	City Emergency Operations Center, Riverside	One to One Assistance LHMP Process Familiarity and HAZUS/GIS information	3	1
11/10/2016	Hemet Fire Administration Building, Hemet	Plan review, update process and clarification assistance	3	2.5
11/15/2016	Riverside EMD	Plan review, update process and clarification assistance	2	1
12/13/2016	Conference call to Mather	CA SHMPT Quarterly Meeting	N/A	4.5
12/14/2016	Hemet	Plan review, update process and clarification assistance	3	2
12/15/2016	Moreno Valley	Plan review, update process and clarification assistance	6	1
2/7/2017	Riverside EMD	Plan review, update process and clarification assistance	2	1
3/14/2017	Perris	Participation with Eastern Municipal Water Districts Planning Committee	10	2.5
3/15/2017	Riverside EMD	Plan review, update process and clarification assistance	3	5

3/28/2017	Riverside EMD	Plan review, update process and clarification assistance	3	2
3/29/2017	Beaumont Police Department	Plan review, update process and clarification assistance	4	2
4/11/2017	Mather	CA SHMPT Quarterly Meeting	N/A	4.5
4/11/2017	Murrieta Fire Administration	Plan review, update process and clarification assistance	4	1.15
4/13/2017	Cathedral City Fire Station	Plan review, update process and clarification assistance	2	2
4/20/2017	Banning City Hall	Plan review, update process and clarification assistance	3	1.5
4/20/2017	Desert Sands USD	Plan review, update process and clarification assistance	4	2
4/25/2017	Calimesa City Hall	Plan review, update process and clarification assistance		
4/25/2017	Temecula City Hall	Plan review, update process and clarification assistance	4	1.15
4/26/2017	Perris	Participation with Eastern Municipal Water Districts Planning Committee	6	2
4/27/2017	San Jacinto City Hall	Meeting with City Manager and staff to discuss joining the County LHMP	5	
5/1/2017	Moreno Valley USD	Plan review, update process and clarification assistance	3	1.5
5/1/2017	Lake Elsinore USD	Plan review, update process and clarification assistance	2	1.15
5/2/2017	Banning - High Valley Water District	Plan review, update process and clarification assistance	3	2
5/3/2017	Indian Wells & Palm Desert	Plan review, update process and clarification assistance	2	7
5/9/2017	La Quinta City Hall	Plan review, update process and clarification assistance	2	1.5
5/17/2017	Beaumont Police Department	Plan review, update process and clarification assistance	5	1.5
5/18/2017	Desert Hot Springs	Plan review, update process and clarification assistance	3	3
5/24/2017	Riverside EOC	Participation in Riversides LHMP planning meeting	6	1
5/25/2017	Wildomar City Hall	Plan review, update process and clarification assistance	3	2
5/25/2017	San Jacinto City Hall	Plan review, update process and clarification assistance	2	2.5
5/31/2017	Murrieta Fire Administration	Plan review, update process and clarification assistance	3	3
6/19/2017	Riverside EMD	LHMP and HMGP assistance for La Quinta	2	1

For complete meeting lists, sign-in sheets, and agendas please see Appendix D.

The public outreach meetings for the LHMP process were conducted in multiple venues. The meetings outlined a brief history of previous hazards, mitigation actions, and the benefits of a multi-jurisdictional hazard mitigation plan in Riverside County.

As part of the public outreach and the regional outreach and planning, the audience was asked at different times during the presentations if there are any hazards they were concerned about, not addressed or problem that has occurred in their living or working areas in the county.

The documented concerns are the following:

- High Winds
- Wildfire
- Earthquake
- Flooding
- Communication Failures
- Lack of trained volunteers
- Information on Jurisdictional Hazards

All of these concerns are being addressed in the hazard profiles located in Section 5, as well as current and future mitigation actions.

For a complete list of actions please see Appendix C

3.9 Existing Plans and Studies

Coordination with other community planning efforts is also paramount to the success of this plan. 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 and mitigation policies and action strategies into this plan establishes a credible and comprehensive plan that ties into and supports other community programs. The development of this plan incorporated information from the following existing plans,

ordinances, studies, reports and initiatives as well as other relevant data from neighboring communities and other jurisdictions.

- General Plan
- Zoning Ordinances
- Subdivision Ordinances
- Water Conservation
- Wildfire Ordinance
- California Building Codes
- Riverside County Flood Control Master Drainage Plan
- Safety Element General Plan
- Community Wildfire Protection Plan(s)
- Riverside County Flood Insurance Studies
- Riverside County General Plan and Background Report
- Riverside County Multi-Hazard Mitigation Plan, 2012
- Riverside Operational Area Emergency Operations Plan
- State of California Multi-Hazard Mitigation Plan

Section 4.0 – Updates and Mitigation Actions

4.1 Updates to 2012 Plan

In the 2012 plan cycle, Riverside County identified Pandemic Influenza as a hazard because populations worldwide are at risk for infection and illness. In the past influenza has spread worldwide within months and is expected to spread even more quickly today with air travel. In the 2012 plan Pandemic was ranked fairly low in the list of County hazards. In the 2017 plan Pandemic ranked in our top 3 hazards with earthquakes and wildfires.

The LHMP Steering Committee felt Communication Failure should be added to the 2017 plan because it has the potential to affect response capabilities in both small and large events. In 2016 a 911 failure impacted the EMS system. This had the potential to lead to loss of life in the Coachella Valley. During disasters, communication failures can have a detrimental effect on the operation of the County Emergency Operation Center (EOC) ultimately hindering the OA's agencies ability to return to normal operations.

Dependence on computer systems has opened up vulnerabilities. Sensitive security information stored along with personal information is now stored on networks. For those reasons, computer networks have become a target for hackers and organizations with the intent to do harm. In 2016 the County of Riverside was a target for Ransom Ware.

The maps that are in the 2017 plan are current maps from County Transportation GIS Division and Cal OES's MyPlan Program.

Some revisions to the 2012 plan mitigation actions included:

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

New Goals and Mitigation Strategies were added that reflect our top ten (10) hazards and risks for Riverside County.

1. Earthquake
2. Pandemic Flu
3. Wildland Fire
4. Electrical Failure
5. Emergent Disease/Contamination
6. Cyber Attack
7. Terrorist Event
8. Communications Failure

9. Flood
10. Civil Disorder

4.2 Hazard Updates

The hazards identified in the 2012 LHMP remain fairly similar in 2017, however the 2017 LHMP Steering Committee added Communication Failure and Cyber Attack as additional hazards. The overall ranking of the hazards has changed as well.

Table 8: Hazard Identification Table

Hazard	Reason Hazard Identified
Earthquake	• History of events • Presence of fault lines and geologic activity
Pandemic Flu	• Due to air travel and urban expansion there is increasing probability of health related emergencies
Wildland Fire	• History of events • Presence of a large amount of timber and brush
Electrical Failure	• History of events
Emergent Disease/Contamination	• 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 and the presence of a large number of rivers and channels
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 transportation routes and relative proximity of San Onofre Nuclear Generating Station (SONGS)
Extreme Weather	• History of events
Transportation Failure	• History of events and the presence of a large number of transportation corridors and airport flight paths
Dam Failure	• Vulnerability of dams
Aqueduct	• Presence of aqueducts serving multiple counties
Tornado	• History of events
Insect Infestation	• History of events
Jail/Prison Event	• Vulnerability of State and County 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

4.3 Mitigation Actions and Updates

4.3.1 2012 Plan Updated Mitigation Actions

2012 mitigation strategies and projects are summarized in the following table to show progress made:

Table 9: Mitigation Actions and Updates

Mitigation Actions Table			
Type of Hazard	**Mitigation Actions**	**Departments/ Jurisdictions**	**Status Update**
ALL	Incorporate Updated Local Hazard Mitigation Plan into Riverside County General Plan	Transportation, Land Management Agency and Riverside Office of Emergency Services	Recently updated and approved on December 2015 by Board of Supervisors. Adopted 2015, which includes a new reference to implement the Local Hazard Mitigation Plan within the Safety Element.
DROUGHT	Construct reservoirs and water tanks to increase water storage	Water Conservation, Agriculture and County Fire	On-going, no update has been made
EARTHQUAKE	CREWS Earthquake Mitigation Project	County-wide	Ongoing process of recruiting non-participating cities in the Coachella Valley area into the early earthquake warning program.
FIRE	Purchase Masticator to remove vegetation and brush in heavily populated areas prone to fires.	Riverside County Fire	No change. Project still on hold due to lack of funding. Potential future purchase

FIRE	Shake Shingle Roof Replacement Project	Idyllwild	In 2013 Mountain Communities Fire Safe Council was awarded a FEMA grant to replace hazardous shake/wood shingle roofs in the San Jacinto WUI (Wildland Urban Interface) One hundred homes were reroofed with Class A roofing material. The grant was completed in October 2016.
FIRE	Single Tree Removal – removed dying and dead trees.	Idyllwild	Ongoing: dead and dying trees are continuously monitored and removed as needed.
FIRE	Hazard Abatement- Fuel treatment program to remove 1120 acres of natural fuel	Mountain Communities Fire Safe Council Program - Idyllwild	Reducing fuels on private property in the San Jacinto WUI is an on-going activity of Mountain Fire Safe Council. To date, more than 1,600 acres have been treated with the financial help of grant funds awarded to MCFSC
FLOOD	Norco Storm Drain This project is an underground storm drain which will address flooding along Pedley Avenue/Sixth Street.	Riverside County Flood Control	Project completed on 04/05/2011.
FLOOD	Santa Ana River, Norco Bluffs [Corps Project] –Stabilization Project is a Corps of Engineers project that consists of a soil cement structure constructed to the 100-year flood level at the base of the bluff.	Riverside County Flood, Transportation Land Management Agency and Riverside County Fire	The bluff stabilization work was completed in 2004. The District is continuing to work with the Corps on wrapping up the project, including completion of a Project Operation and Maintenance Manual. Once the Corps approves the O&M Manual, the project can be transferred to the District for ownership, operation and maintenance.
FLOOD	Temescal Creek-Foster Road Storm Drain (2-8-00493-01) - This project is an underground storm drain in Foster Road extending from Interstate 15 to Temescal Creek.	Riverside-Corona Resource Conservation District Riverside County Flood Control	Project completed on 09/01/2015
FLOOD	Dillon Road – State Hwy 62 Road Project to clear debris. Road has 25 dips that cause flooding during storms.	Transportation, Land, Management Agency Riverside County Fire	Ongoing; The current action plan is to barricade the low dip sections when they are flooded and remove the storm debris when the water recedes.

FLOOD	Underground storm drain which will extend approximately 1,300 feet south on Pedley Avenue from Norco MDP Line NA on Sixth Street. This project will address localized flooding along Pedley Avenue.	Flood Control and City of Norco	Finished Spring 2011
FLOOD	Restore 100 yr level flood protection to the three million residents within the floodplain downstream from Prado Dam. The Corps proposes to increase both the storage capacity of Prado Dam and its outlet discharge capacity. The embankment will be raised 30 feet, while the spillway sill will be raised 20 feet and the gated discharge capacity will be tripled.	Flood Control	**Part 1** of this project involving Riverside County Flood Control and TLMA was completed **Part 2** of this project involving only Riverside County Flood Control is still pending approval
FLOOD	Ultimate channel improvements for the existing interim channel from 6th Street to the terminus near Rose Court.	City of Norco	Project has not started with no estimation on start date. The District is currently working on 60% design plans and anticipates 90% design plans will be completed in 2017. FEMA processing will be necessary to revise the currently mapped floodplain once the construction is completed.
FLOOD	Improvements to the existing channel between Parkridge Avenue and River Road. The channel is planned as a concrete lined open channel	City of Norco and Riverside County Transportation Land Management Agency	Project began Circa 7/2013 and was finished Circa 2/2014. Lead Agency was RCFC & WCD
FLOOD	Underground storm drain extending from the existing Stage 1 near Pedley Avenue, east on 7th Street to California Avenue then south on California approximately 800 feet to a sump.	Transportation, Land, & Management Agency and Flood Control	Project completed on 04/05/2011
FLOOD	Collection of "mitigation" charges from builders in Mockingbird Canyon with the intention of providing relief to flood prone properties in the lower canyon	Mockingbird Canyon	In process of collecting funds. Charging investors $500 per lot. Talks about whether to keep this project or abandon it. Considered a “mini” ADP (Area Drainage Project)
FLOOD	Storm Drain Last portion will be constructed as part of the same	City of Corona	Project completed on 04/24/2012, Project revised on 04/25/2012.

	contract as the Ontario Avenue Storm Drain project		
FLOOD	A 1,050-foot drain to de-water a sump in Frank Avenue in the south Mira Loma area	Riverside County Flood Control and City of Eastvale	Project completed on 01/31/2012
FLOOD	The original project consisted of a 54 acre-foot debris basin at the southerly end of Smith Road and a concrete rectangular channel extending northerly to Cajalco Road. Mitigation required for the basin project includes removal of non-native vegetation, debris and remnants of abandoned structures as well as re-grading and establishment of native vegetation.	Riverside County Flood Control	Project completed on 01/10/2006
FLOOD	Underground storm drain in the City of Corona extending from East Grand Boulevard north in Joy Street to Temescal Creek Channel. Design began on this project in 2003 at which time it was discovered during a field check of the preliminary drawings that a recently installed Edison conduit in Joy Street overlapped the only viable alignment for the storm drain. The street is so heavily laden with utilities here is no longer room to install a drain.	City of Corona	Design Phase Schedule for advertisement in March 2017
FLOOD	Underground storm drain in Ontario Avenue extending upstream from the District's existing El Cerrito Channel at El Cerrito Road about 3,000 feet to State Street just west of Interstate 15.	Riverside County Flood Control and Transportation Land & Management Agency	Project revised on 04/25/2012
FLOOD	Underground storm drain in Foster Road extending from Interstate 15 to Temescal Creek	Temescal Creek-Foster Road Storm Drain	Construction began in January 2015 and was completed in September 2015.

FLOOD	Multi-year plan to construct a levee system (approximately 1,200 feet river bottom width) between the existing Corps of Engineers' levee 9,500 feet upstream of State Street, and a point about 8,200 feet downstream of Sanderson Avenue, a distance of about 5 miles. Floodwalls are required to be constructed over the Metropolitan Water District facilities just east of State Street.	San Jacinto and Transportation and Land Management	Funding was received in November 2015 - the levee was included in a suite of projects that received Proposition 84 grant funding from the California Department of Water Resources. The Prop 84 contribution is anticipated to be about $3.5 million.
FLOOD	Project to build MDP extending from South W. Esplanade to east Midway Street to South San Jacinto Street to collect flows from the larger Park Hill basin watershed	City of San Jacinto	Construction for the project began on April 25, 2014 and was completed on July 2, 2015.
FLOOD	Construction of an underground storm drain that extends from a proposed detention basin at the intersection of Potter Road and De Anza Drive then southwest in De Anza to Young Street. The City of San Jacinto is administering the project.	City of San Jacinto and Transportation and Land Management	Project still pending
FLOOD	Underground storm drain from an outlet north of Holland Road southerly in Hawthorne Avenue to a collection system south of Craig Avenue	City of Menifee and Transportation and Land Management	Project Completed 3/01/2011
FLOOD	Project is an underground storm drain that extends from near Yale Street east on Stetson Avenue approximately 1 mile to Dartmouth Street	City of Hemet	Project completed on 09/04/2007
FLOOD	Project is an underground storm drain on Whittier Boulevard extending from the existing storm drain at Palm Avenue east to San Jacinto Street	Riverside County Flood Control and City of Hemet	Project completed on 08/23/2016
FLOOD	Underground storm drain extending from an existing storm drain in Meridian Street near Berkeley venue south in Meridian Street to Whittier Avenue.	Riverside County Flood Control and City of Hemet	Stage 1 completed on 06/21/2016. Stage 2 still pending approval.

FLOOD	Project is for major flood control project to extend from the San Jacinto River near Goetz Road east approximately 6 miles to Juniper Flats Road and incorporates both lined and unlined open channel, underground storm drains and two major detention basins.	City of Menifee and Transportation, Land and Management Agency	Project built in 4 stages. Some stages have been completed, but others still not finished.
FLOOD	Open channel along Nuevo Road from Dunlap Drive to Perris Valley Channel	City of Perris, Riverside County Transportation and Flood Control	Under new contract: Starting Jan. 2017 and will range about 2.5 yrs. for this entire project to be completed; first part will take about 180 days to complete, but time frame will be extended.
FLOOD	East Ironwood Avenue to Petit Street. Part of the work the City of Moreno Valley is doing in association with improvements to the Moreno Beach Drive & 60 freeway interchange.	City of Moreno Valley and Transportation and Land Management	Storm Drain Line K-1 – City completed design in 2014. Currently seeing construction funding of approximately $2.5m.
FLOOD	Project is an open channel extending from Nason Basin northeasterly approximately 2,500 feet to Ironwood Avenue	City of Moreno Valley and Transportation and Land Management Agency	Storm Drain Line K from Ironwood to the Nason Basin – RCFC&WCD secured an easement in 2014 to receive flows from Line K-1 noted above. Action completed in 2014.
FLOOD **EARTHQUAKE**	Norco Streambank Stabilization. Project consists of a soil cement toe protection structure constructed to the 100-year flood level at the base of the bluff, and a stable earthen buttress fill constructed to the top of the bluff from I-15 Bridge to Center Avenue	Riverside County Flood Control and Transportation Land & Management Agency	Project Completed
FLOOD **EARTHQUAKE**	Stabilization of Interstate 15 near Alhambra Street, as a part of the Prado Dam enlargement feature of the Santa Ana River Mainstream Project at no cost to the District. The project involves the construction of a toe-protection-only structure from Hamner Avenue downstream to approximately 5th Street	Transportation Land Management Agency	Project still pending

LANDSLIDE EARTHQUAKE FLOOD	Proposed improvements include installation of slope protection along the Green River Mobile Home Park, as well as the exposed slopes adjacent to the Green River Homeowners Association and Highway 91 just downstream of Highway 71.	Transportation and Land Management Agency	**Phase 2A-**The District has completed its acquisition of the necessary easements and fee interests from Riverside County, private lands, and Caltrans. Construction of Phase 2A was completed in Fiscal Year 2015/2016. **Phase 2B-Construction** of this segment was completed in Fiscal Year 2014/2015.

4.3.2 2017 New Mitigation Actions

The 2017 LHMP Steering Committee identified the following Mitigation Actions since the completion of the 2012 plan update. These mitigation actions were prioritized based on the top ten high priority county hazards. This was determined using the county risk assessment that is shown on section 5.2 page 195 "**Figure 23:** 2017 County Hazard Ranking and Risk Scores." The actions below list ways that "all hazards" can be mitigated following the county's top ten hazards starting from the highest. The financial impact of each action does not affect the ranking.

Table 10: 2017 New Mitigation Actions Table

2017 Mitigation Actions Table

Type of Hazard	Mitigation Actions	Departments/ Jurisdictions	Status Update/Timeframe	Potential Funding Source
All Hazards	CERT Training and retention	Riverside County Emergency Management Department	July 2018 – Ongoing On-going for the life of the current plan (yrs. 2018-2023). There will be one training in each of the county districts per year to ensure community members throughout the county get the opportunity to refresh and reinforce their CERT skills. This action will be reassessed during the monitoring and update phase of the County's 2017 LHMP.	State Homeland Security Program (SHSP)
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	On-going for the life of the current plan (yrs. 2018-2023). The Safety Element in the General Plan is continuously updated as new information and changes arise. This action will be reassessed during the monitoring and update phase of the County's 2017 LHMP.	County General Fund
Earthquake	Working with CalOES & FEMA to revise the Southern California Catastrophic	All Cities in Riverside County	On-going for the life of the current plan (yrs. 2018-2023). Riverside County will continue to collaborate with Cal OES/ FEMA to improve and update	County General Fund

	Earthquake Response Plan		this plan as needed. This action will be reassessed during the monitoring and update phase of the County's 2017 LHMP.	
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	Riverside County Emergency Management Department & Riverside County Hospitals	On-going for the life of the current plan (yrs. 2018-2023).These reports will continuously be reviewed to make sure they are up to date and consistent with any changes. This action will be reassessed during the monitoring and update phase of the County's 2017 LHMP.	Hospital Preparedness Program (HPP) Grant
Earthquake	Worked with local City Emergency Manager (EM) to address '08 Golden Guardian Riverside County Shake Out Scenario/Assumptions	Riverside County Emergency Management Department	On-going for the life of the current plan (yrs. 2018-2023). County will continuously work with City EM to update and inform of changes or thoughts to 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 County's 2017 LHMP.	County General Fund
Earthquake	Mitigate potential seismic hazards through adoption and strict enforcement of current building codes	Riverside County Transportation, Land, Management Agency	On-going for the life of 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 County's 2017 LHMP.	County General Fund

Pandemic Flu	Provide training on immunization techniques	Riverside University Health System-Public Health	On-going for the life of 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 County's 2017 LHMP.	Public Health Emergency Preparedness Grant (PHEP)
Pandemic Flu	Participated and conducted a Non-Medical Intervention Tabletop Exercise	Riverside County Emergency Management Department & Riverside University Health System-Public Health	Completed on 09/28/2015	Pan Flu Grant PHEP Grant
Pandemic Flu	Participated and conducted a Flu vaccination exercise	Riverside County Emergency Management Department & Riverside University Health System-Public Health	Completed on 11/10/2016	Pan Flu Grant PHEP Grant
Pandemic Flu	Generate a draft Crisis Care Plan	Riverside County Emergency Management Department & Riverside University Health System-Public Health	Completed 08/30/2016	Pan Flu Grant PHEP Grant HPP Grant
Pandemic Flu	Training Medical Reserve Corp (MRC) in hospital surge exercises	Riverside County Emergency Management Department	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 County's 2017 LHMP.	HPP Grant State Homeland Security Program (SHSP)
Pandemic Flu	Training Medical Reserve Corp. (MRC) volunteers in Alternate Care Site	Riverside County Emergency Management Department	Completed in 2014	HPP Grant State Homeland Security Program (SHSP)Pan Flu Grant

Wildland Fire	Create wildfire protection zones that reduce the risks to citizens and firefighters from fire dangers	Riverside County Fire Department & CAL Fire	On-going for the life of 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 monitoring and update phase of the County's 2017 LHMP.	State Mission and/or Grant funding
Wildland Fire	Strengthen defensible space inspections in fire prone areas	Riverside County Fire Department & CAL Fire	On-going for the life of 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 County's 2017 LHMP.	State and County General Funds & Structural Fire Taxes
Wildland Fire	Continue maintenance of existing fire roads throughout the county to provide fire department access	Riverside County Fire Department & CAL Fire	On-going for the life of 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 County's 2017 LHMP.	State Mission and/or Grant funding
Wildland Fire	Fuel reduction projects throughout the county to reduce fire potential	Riverside County Fire Department & CAL Fire	On-going for the life of 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 County's 2017 LHMP.	State Mission and/or Grant funding
Wildland Fire	Develop and enforce construction and design standards that ensure the development incorporates fire prevention features	Riverside County Fire Department & CAL Fire	On-going for the life of 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 County's 2017 LHMP.	Developer Fees
Wildland Fire	Conduct and implement long range fire safe planning through code adoption/policies	Riverside County Fire Department & CAL Fire & Riverside County Transportation,	On-going for the life of the current plan (yrs. 2018-2023). Continuously implement code policies to integrate them into the Safety Element as they are developed/updated and	County General Fund and Fire Marshal Fees

	consistent with the Safety Element of the General Plan	Land, Management Agency (Planning Division)	approved. This action will be reassessed during the monitoring and update phase of the County's 2017 LHMP.	
Wildland Fire	Ben Clark Training Center to provide wildland fire protection related classes to fire personnel	Riverside County Fire Department & CAL Fire	On-going for the life of 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 County's 2017 LHMP.	County General Fund, private colleges fees, and State Mission Grant funding
Wildland Fire	Continue wildland fire suppression/preparedness to maintain a state of readiness throughout the year	Riverside County Fire Department & CAL Fire	On-going for the life of 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 County's 2017 LHMP.	State Mission and/or Grant funding
Wildland Fire	Rapid intervention, identification and mitigation of Goldspot Oak Bore Beetle (GSOB) trees at various infestation levels on State Responsibility Area (SRA) lands throughout the county. Herbicide or tree removal if necessary	CAL Fire Unit Forester	On-going for the life of the current plan (yrs. 2018-2023).Continuously monitor infestation levels of GSOB trees to continue removing infested trees if necessary. This action will be reassessed during the monitoring and update phase of the County's 2017 LHMP.	State Mission and/or Grant funding
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	CAL Fire Unit Forester	On-Going for the life of the current plan (yrs. 2018-2023).Continuously 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 County's 2017 LHMP.	State Mission and/or Grant funding

	use of pesticide when applicable			
Wildland Fire	Continue Truck Trail and road maintenance to provide access for fire suppression vehicles and personnel.	CAL Fire Unit Forester	On-Going for the life of 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 County's 2017 LHMP.	State Mission and/or Grant funding
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	On-Going for the life of 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 County's 2017 LHMP.	State Mission and/or Grant funding
Electrical Failure	Coordinated with Southern California Edison to be included in their power outage notifications	Riverside County Emergency Management Department	On-going for the life of 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 County's 2017 LHMP.	County General Fund
Emergent Disease/ Contamination	Drafted a Region VI Highly Contagious Disease Transportation Plan	Riverside County Emergency Management Department	Completed on 12/08/2016	HPP Grant Ebola Grant
Emergent Disease/ Contamination	Facilitated a Region VI Highly Contagious Disease Transportation Tabletop Exercise	Riverside County Emergency Management Department	Completed on 09/29/2016 The situation manual for this was completed on 11/14/2016	HPP Grant Ebola Grant

Emergent Disease/ Contamination	Drafted a Riverside County Viral Hemorrhagic Fever Preparedness and Response Plan (VHF Plan)	Riverside County Emergency Management Department & Riverside University Health System-Public Health	Completed on 11/2016	HPP Grant Ebola Grant
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	On-going for the life of the current plan (yrs. 2018-2023). Continue to update and maintain the IPS network to protect the county from any form of cyber-attacks or threats. This action will be reassessed during the monitoring and update phase of the County's 2017 LHMP.	County General Fund
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 cyber-attacks, malware outbreaks, network reconnaissance, data exfiltration, and C2 (command & control) and botnet activities	Riverside County Technology Information	On-going for the life of 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 County's 2017 LHMP.	County General Fund
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	Riverside County Technology Information	On-going for the life of 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	County General Fund

	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		update phase of the County's 2017 LHMP.	
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	Riverside County Technology Information	On-going for the life of 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 County's 2017 LHMP.	County General Fund
Cyber Attack	**Enterprise Security Information Event Management (SIEM)** Serves as the county's centralized security event log management repository and correlation engine	Riverside County Technology Information	On-going for the life of the current plan (yrs. 2018-2023). Continue to maintain the SIEM to monitor and prevent security threats. This action will be reassessed during the monitoring and update phase of the County's 2017 LHMP.	County General Fund

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	Riverside County Technology Information	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
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	Riverside County Technology Information	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
Cyber Attack	**Security Operations Center (SOC)** Planning phase completed, construction estimated to begin in September 2017	Riverside County Information Technology	September 2017 – September 2018. The County's Cyber Security Operations Center (SOC) is under construction.	County General Fund

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	Riverside County Information Technology	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 County's 2017 LHMP. 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
Terrorist Event	SWAT team trained to respond to terrorism events	Riverside County Sheriff	On-going for the life of 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 County's 2017 LHMP.	County General Fund
Terrorist Event	Hazard Device Team trained to respond to terrorism events	Riverside County Sheriff	On-going for the life of 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 County's 2017 LHMP.	County General Fund
Terrorist Event	Sheriff Emergency Response Team trained to respond to terrorism events	Riverside County Sheriff	On-going for the life of 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	County General Fund

			monitoring and update phase of the County's 2017 LHMP.	
Terrorist Event	Sheriff personnel are assigned to the Joint Terrorism Task Force	Riverside County Sheriff	On-going for the life of 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 County's 2017 LHMP.	County General Fund
Terrorist Event	Ben Clark Training Center provides terrorism related classes for Law Enforcement and First Responders.	Riverside County Sheriff	On-going for the life of 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 County's 2017 LHMP.	County General Fund
Terrorist Event	Tactical response training	Riverside County Sheriff & Riverside County Fire Department	On-going for the life of 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 County's 2017 LHMP.	County General Fund
Communications Failure	**County of Riverside Network (CORNET)** Redundant Internet connections Backbone links are configured with a mesh topology to provide full redundancy	Riverside County Technology Information	On-going for the life of 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 County's 2017 LHMP.	County General Fund
Communications Failure	**Enterprise Voice Network (VoIP)** Centralized SIP trunking for	Riverside County Technology Information	On-going for the life of the current plan (yrs. 2018-2023). Continuously provide accessibility to phone carrier	County General Fund

	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		connection and call processing. This action will be reassessed during the monitoring and update phase of the County's 2017 LHMP.	
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	Riverside County Technology Information	On-going for the life of 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 County's 2017 LHMP.	County General Fund

	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			
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	Riverside County Technology Information	On-Premise solution has been rolled out to all County VoIP endpoints. Mobile Solution has been rolled out to EMD. Mobile solution is ready to be rolled out to other departments as requested. On-going for the life of the current plan (yrs. 2018-2023). Continue to have a notification system to be able to have the ability to connect with off-network devices in case of a communications failure, including Wi-Fi. This action will be reassessed during the monitoring and update phase of the County's 2017 LHMP.	County General Fund Department Funds; departments who wish to take advantage of this service will be billed back to the departments based on how many users

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	Riverside County Technology Information	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 equipment availability. On-going for the life of the current plan (yrs. 2018-2023). Continue to provide alternate network paths for County locations in the case of a communication failure. This action will be reassessed during the monitoring and update phase of the County's 2017 LHMP.	County General Fund Department Funds; billable by the cellular carrier to requesting departments
Flood	**University Wash Channel, Stage 3 Project No. 221-1-8-00120-03-12** This project will increase public safety and improve local economics by retrofitting an older, built-out commercial/industrial area with drainage infrastructure to alleviate repeated flood damage to existing businesses. The project will also address street and intersection flooding	Riverside County Flood Control and Water Conservation District	Notice To Proceed 2/21/17 Completed 11/14/17	Riverside County Flood Control funds Cost: $3,044,500
Flood	**Monroe MDP – Monroe Channel Project No. 1-8-00071 Stage 4** At request of the City of Riverside, replacement of	Riverside County Flood Control and Water Conservation District	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

	City's existing open channel with underground reinforced concrete box with 10-year storm capacity. Project limits are from California Avenue upstream to Magnolia Avenue			
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	Riverside County Flood Control and Water Conservation District	30% 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
Flood	**University MDP Line 3 Project No. 1-8-09020 Stage 1** The MDP proposes Line 3 as approximately 2,900 feet of 30" RCP east in Blaine Street then northeast to Blaine Street Retention Basin. The Blaine Street Retention Basin is located 600 feet north of Blaine Street between Valencia Hill Drive and Mt. Vernon Avenue.	Riverside County Flood Control and Water Conservation District	Pending approval Projected Start: 12/2020 Projected End: during the life of the plan (2018-2023)	Riverside County Flood Control funds Cost: $2,926,028

	Budgeted for scoping study and evaluation of FEMA map floodplain limits only			
Flood	**Santa Ana River Stabilization Project No. 1-8-00010 Stg. 90** The 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. Exact form of project not set. Work will likely include repair of groins and toe protection	Riverside County Flood Control and Water Conservation District	Pending approval 5 year CIP (Capital Improvement Plan) Projected start and end: during the life of the plan (2018-2023)	Riverside County Flood Control funds Cost: $10,685,000
Flood	**Box Springs Dam – Outlet Modification Project No. 1-8-00041** Reconstruct outlet structure to prevent blockage from sediment accumulation	Riverside County Flood Control and Water Conservation District	Pending until Woodcrest Dam is complete 5 year CIP (Capital Improvement Plan) Projected start and end: during the life of the plan (2018-2023)	Riverside County Flood Control funds Cost: $981,842
Flood	**Sycamore Dam – Outlet Structure Modifications Project No. 1-8-00042** This project will upgrade the level of safety and serviceability. Initial project components	Riverside County Flood Control and Water Conservation District	Pending until Woodcrest Dam is complete 5 year CIP (Capital Improvement Plan) Projected start and end: during the life of the plan (2018-2023)	Riverside County Flood Control funds Cost: $1,854,991

	include the repair/reinforcement of the existing outlet channel; construction of a new debris rack structure; erosion controls 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.			
Flood	**Alessandro Dam Outlet Modification Project No. 1-8-00043** Reconstruct outlet structure to prevent blockage from sediment accumulation	Riverside County Flood Control and Water Conservation District	Pending until Woodcrest Dam is complete 5 year CIP (Capital Improvement Plan) Projected start and end: during the life of the plan (2018-2023)	Riverside County Flood Control funds Cost: $907,682
Flood	**Prenda Dam Outlet Modification Project No. 1-8-00044**	Riverside County Flood Control and Water Conservation District	Pending until Woodcrest Dam is complete 5 year CIP (Capital Improvement Plan)	Riverside County Flood Control funds Cost: $1,238,312

	Reconstruct outlet structure to prevent blockage from sediment accumulation		Projected start and end: during the life of the plan (2018-2023)	
Flood	**Woodcrest Dam Outlet Modification Project No. 1-8-00045** This project will upgrade the level of safety and serviceability. The approved Project Charter identifies the primary scope of work for the project as follows: design and construction of a new inlet structure to reduce potential for clogging of the outlet works; rehabilitation of the existing outlet gate assembly and control stem; implementation of an automated gate control system; rehabilitation of the outlet pipe; restoration of the outlet channel; and installation of surficial erosion controls on the surface of the dam embankment. Once completed, this project will serve as an example for performing similar upgrades to the remaining	Riverside County Flood Control and Water Conservation District	Development of design plans and specifications on hold until latest Geotechnical investigation is complete Projected Start: March 2019 Projected End: during the life of the plan (2018-2023)	Riverside County Flood Control funds Cost: $2,216,529

	Riverside Reservoirs			
Flood	**North Norco Channel Stage 10 Project No. 222-2-8-00140-10-12** The project is located just upstream of River Road within the city of Norco in Riverside County, California. This project consists of approximately 550 lineal feet of triple cell reinforced concrete box and 125 lineal feet of open concrete channel transition, will replace the existing interim dirt channel. The project remedies ongoing flooding problems in the area thus resulting in positive impacts to residents and businesses	Riverside County Flood Control and Water Conservation District	Completed 9/9/14	Riverside County Flood Control funds
Flood	**Corona MDP Line 5 Stage 1 Project No. 2-8-00280** This project includes the construction of an underground storm drain beginning in Sherman Avenue south of Railroad Street and	Riverside County Flood Control and Water Conservation District	Pending approval 5 year CIP (Capital Improvement Plan) Projected start and end: during the life of the plan (2018-2023)	Riverside County Flood Control funds Cost: $1,397,201

	extending down Railroad Street westerly to Smith Street. The City is willing to undertake the design and construction of this project using District funding.			
Flood	**Corona MDP Line 52 Stage 1 Project No. 2-8-00350** An underground storm drain extending north from Third Street along E. Grand Boulevard 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
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 Road at the intersection of Glen Ivy Road; and 2) an armored berm along the east bank of Coldwater Wash downstream of the intersection of Temescal Canyon Road and Glen Ivy Road. The armored berm would	Riverside County Flood Control and Water Conservation District	Pending approval 5 year CIP (Capital Improvement Plan) Projected start and end: during the life of the plan (2018-2023)	Riverside County Flood Control funds Cost: $6,005,806

	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			
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, if necessary, to protect Squaw Mountain Bridge and prevent erosion of Painted Hills development canyon slopes along Coldwater Canyon Wash. Balance of funds	Riverside County Flood Control and Water Conservation District	Pending approval 5 year CIP (Capital Improvement Plan) Projected start and end: during the life of the plan (2018-2023)	Riverside County Flood Control funds Cost: included in the $6,005,806 amount for Coldwater Canyon Structural Improvement project listed above

	would support potential interventions recommended by the report including floodplain buyout			
Flood	**Southeast Compton Wash At Corona Sanitary landfill Project No. 2-8-09054** Riverside County Waste Management District has requested assistance solving ongoing flooding and erosion problems along the southeast side of the landfill	Riverside County Waste Management District**	Pending approval 5 year CIP (Capital Improvement Plan) Projected start and end: during the life of the plan (2018-2023)	Riverside County Flood Control funds Cost: $500,000
Flood	**Lake Mathews Estates Water Quality Pond Project No. 2-8-09058** Proposed in the "Drainage Water Quality Management Plan for the Lake Matthews Watershed", this roughly 10-acre project is to be located on the south side of Cajalco Road about ¾-mile west of Wood Road. The project will capture first flush runoff from Cajalco Creek and carry it to an off-channel pond to	Riverside County Flood Control and Water Conservation District	Pending approval 5 year CIP (Capital Improvement Plan) Projected start and end: during the life of the plan (2018-2023)	Riverside County Flood Control funds Cost: $2,794,983

	be treated and/or infiltrated			
Flood	**Temescal Wash Floodplain Project No. 2-8-00052** Acquisition of floodplain area for flood protection, water conservation and habitat mitigation banking	Riverside County Flood Control and Water Conservation District	Pending approval 5 year CIP (Capital Improvement Plan) Projected start and end: during the life of the plan (2018-2023)	Riverside County Flood Control funds Cost: $23,534,000
Flood	**Arroyo Del Toro Channel Stage 1 Project No. 223-3-8-00170-01-12** This project collects flows that pass under Interstate 15, flow through the cemetery and flood the intersection of Riverside Drive and Collier Avenue. The flows will now be collected in a channel and conveyed via an underground storm drain system to the Collier Marsh area	Riverside County Flood Control and Water Conservation District	Completed 6/16/15	Riverside County Flood Control funds

Flood	**Ortega Channel Retrofit Project No. 3-8-00070** Project will replace a portion of the clog-prone storm drain with a more easily accessible and maintainable open channel	Riverside County Flood Control and Water Conservation District	Pending approval 5 year CIP (Capital Improvement Plan) Projected start and end: during the life of the plan (2018-2023)	Riverside County Flood Control funds Cost: $1,628,761
Flood	**LITTLE LAKE MDP LINE B, STG 1 STETSON AVENUE CHANNEL, STG 7 aka HEMET MDP LINE D Project Nos. 224-4-8-00265-01-12 224-4-8-00211-07-12** The District constructed a segment of the District's Little Lake MOP Line B. This infrastructure will diminish neighborhood flooding and damage to private property and businesses and improve the safety of the traveling public during storm events. This new drain will also permanently reduce flood-related street maintenance and repair costs for the City of Hemet. Little Lake MDP Line B Stage 1 is located primarily within the City of	Riverside County Flood Control and Water Conservation District	Stage 1 Completed 06/21/16 Stage 2 Pending approval Projected start and end: during the life of the plan (2018-2023)	Riverside County Flood Control funds Cost: $6,398,777

	Hemet, with small portions extending into the City of San Jacinto and unincorporated Riverside County beginning approximate 300 feet north of Berkley Ave and terminating approximately 200 feet south of Florida			
Flood	**Homeland MDP Line 2, Stage 2 Project No. 224-4-8-00337-02-12** The District constructed a segment of drainage infrastructure described in the District's Romoland Master Drainage Plan as Romoland MOP Line A, Stages 4, 5 and 6, Romoland MOP Lines A-2 and A-3, Stage 1, and Briggs Basin. In conjunction with the District's Homeland MDP Line 1, Stage 1, completion of this drainage infrastructure will reduce the floodplain by approximately 1, 762 acres and enable revisions to the FEMA Flood Insurance Rate Maps that result in	Riverside County Flood Control and Water Conservation District	Completed 6/5/12	Riverside County Flood Control funds

	a significant reduction in flood insurance premiums. The District's Homeland MDP Line 1, Stage 1 project is currently ongoing with an anticipated completion in February 2017			
Flood	**Sunnymead MDP Line P-6 Stage 2 Project No. 224-4-8-00716-02-12** The District constructed a segment of drainage infrastructure described in the District's Sunnymead Master Drainage Plan which remedies ongoing flooding problems in the area thus resulting in positive impacts toresidents and businesses.	Riverside County Flood Control and Water Conservation District	Completed 3/25/2014	Riverside County Flood Control funds
Flood	**San Jacinto MDP Line C, Stage 2, Lines C-4, C-5 & B Project No. 224-4-8-00124-02-12** The District constructed a segment of drainage infrastructure described in the District's San Jacinto Master Drainage Plan, which remedies the	Riverside County Flood Control and Water Conservation District	Completed 6/30/15	Riverside County Flood Control funds

	ongoing flooding problems at the intersections of San Jacinto Avenue and Menlo Avenue, San Jacinto Avenue and Midway Street, and Santa Fe Street and Midway Street. Consequently, the removal of ponding water at these intersections during storm events improves traffic and pedestrian safety and public access to the businesses along San Jacinto and Menlo Avenues. The District partnered with the City of San Jacinto to further improve normal residential traffic safety by replacing and reconstructing Midway Street between San Jacinto Avenue and Santa Fe Street			
Flood	**West End Moreno MDP Line LL Project No. 224-4-8-00783-01-12** The District constructed a segment of drainage infrastructure described in the District's West End Moreno MDP which remedies ongoing flooding problems in the	Riverside County Flood Control and Water Conservation District	Completed 5/12/15	Riverside County Flood Control funds

	area, thus resulting in positive impacts to residents and businesses			
Flood	**Romoland MDP Line A, STGS 4,5,6, Homeland MDP Line 1 Briggs Basin, Romoland MDP Lines A-2 and A-3 Project No. 224-4-8-00310-04-12** The District constructed a segment of drainage infrastructure described in the District's Romoland Master Drainage Plan as Romoland MOP Line A, Stages 4, 5 and 6, Romoland MOP Lines A-2 and A-3, Stage 1, and Briggs Basin. In conjunction with the District's Homeland MDP Line 1, Stage 1, completion of this drainage infrastructure will reduce the floodplain by approximately 1, 762 acres and enable revisions to the FEMA Flood Insurance Rate Maps that result in a significant reduction in flood insurance premiums. The District's	Riverside County Flood Control and Water Conservation District	Completed 8/23/16	Riverside County Flood Control funds

	Homeland MDP Line 1, Stage 1 project is currently ongoing with an anticipated completion in February 2017			
Flood	**Little Lake MDP Line B Stage 2 Project No. 4-8-00265** An underground storm drain from just south of Florida Avenue, southerly in Meridian Street to Whittier Avenue.	Riverside County Flood Control and Water Conservation District	Pending approval 5 year CIP (Capital Improvement Plan) Projected start and end: during the life of the plan (2018-2023)	Riverside County Flood Control funds Cost: $6,804,257
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 been through several evolutions and has been essentially dormant for nearly a decade. Funding shown is for intensive planning/engineering study of options for managing future development. Goal	Riverside County Flood Control and Water Conservation District	Pending approval Projected Start: 11/2019 Projected End: during the life of the plan (2018-2023)	Riverside County Flood Control funds ADP (Area Drainage Plan) Funds Cost: $70,000,000

	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			
Flood	**Gilman Home Channel Lateral A Stage 3 Gilman Home Channel Stage 90 Project No. 225-5-8-00171-03-12** The District constructed a segment of drainage infrastructure described in the District's Banning Master Drainage Plan which remedies ongoing flooding problems in the area, thus resulting in positive impacts to residents and businesses. Moreover, this project will enable revision of the FEMA Flood Insurance Rate Maps in the impacted area resulting in a significant reduction in flood insurance premiums. Many owners with federally insured	Riverside County Flood Control and Water Conservation District	Completed 9/22/15	Riverside County Flood Control funds

	home loans will realize savings of several thousands of dollars per year			
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	Riverside County Flood Control and Water Conservation District	Pending approval Projected Start: 12/2020 Projected End: during the life of the plan (2018-2023)	Riverside County Flood Control funds Cost: $5,353,074
Flood	**Eagle Canyon Dam Stage 1 Project No. 6-8-00190** The District constructed a segment of drainage infrastructure described in the District's Palm Springs Master Drainage Plan. Construction of this project also includes remediation of potentially hazardous and nonhazardous illegally dumped materials and	Riverside County Flood Control and Water Conservation District	Completed 11/17/15	Riverside County Flood Control funds

	remedies ongoing flooding problems in the area, thus resulting in positive impacts to residents and businesses. Additionally, Palm Springs MDP Line 43 and Lateral 43A, the underground dam outlet, is currently under construction and completion is anticipated for February 2016. Completion of the underground infrastructure will enable revisions to the FEMA Flood Insurance Rate Maps in the impacted area immediately downstream of Eagle Canyon and will result in a significant reduction in flood insurance premiums			
Flood	**Palm Springs MDP Line 43 and Lateral 43A Project No. 226-6-8-00163-01-12** The District constructed a segment of drainage infrastructure described in the District's Palm Springs Master Drainage Plan as Palm Springs MOP Line 43 and Lateral	Riverside County Flood Control and Water Conservation District	Completed 3/15/16	Riverside County Flood Control funds

	43A. Construction of this project serves as the underground outlet to the District's Eagle Canyon Dam facility that was completed on September 21, 2015 with the Notice of Completion accepted by the Board as Agenda Item Number 11-1 on November 17, 2015. Completion of both District facilities will enable revisions to the FEMA Flood Insurance Rate Maps in the impacted area immediately downstream of Eagle Canyon Dam and will result in a significant reduction in flood insurance premiums			
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	Riverside County Flood Control and Water Conservation District/United States Army Corps of Engineers*	Pending approval 5 year CIP (Capital Improvement Plan) Projected start and end: during the life of the plan (2018-2023)	Riverside County Flood Control funds Cost: $82,000,000

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	Riverside County Flood Control and Water Conservation District	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 the life of the plan (2018-2023)	Riverside County Flood Control funds Cost:1,260,000
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	Riverside County Flood Control and Water Conservation District	Expected Advertise Date: 2nd Quarter 2018 Projected Start: 08/2019 Projected End: during the life of the plan (2018-2023)	Riverside County Flood Control funds Cost: $6,187,021
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	RCFC/City of Banning	Notice to Proceed: 5/15/17 Completed: 2/27/18	Riverside County Flood Control funds

	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.			
Civil Disorder	Trained and equipped Mobile Field Force Teams throughout the county	Riverside County Sheriff	On-going for the life of 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 County's 2017 LHMP.	County General Fund

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

Figure 24: Riverside County FY Capital Assets

Capital asset activity for the year ended June 30, 2016 was as follows (in thousands):

COUNTY OF RIVERSIDE
Notes to the Basic Financial Statements (Continued)
June 30, 2016

NOTE 8 – CAPITAL ASSETS

Capital asset activity for the year ended June 30, 2016 was as follows (In thousands):

	Balance July 1, 2015	Additions	Retirements	Transfers	Balance June 30, 2016
Governmental activities:					
Capital assets, not being depreciated:					
Land & easements	$ 529,885	$ 7,889	$ (188)	$ -	$ 537,586
Construction in progress	757,220	295,880	(221)	(343,280)	709,599
Total capital assets, not being depreciated	1,287,105	303,769	(409)	(343,280)	1,247,185
Capital assets, being depreciated:					
Infrastructure					
Flood channels	266,840	-	-	1,656	268,496
Flood storm drains	423,741	1,094	-	27,064	451,899
Flood dams and basins	33,968	-	-	10,559	44,527
Roads	1,886,995	29,398	-	217,937	2,134,330
Traffic signals	38,113	197	-	4,496	42,806
Bridges	202,814	2,285	-	5,191	210,290
Runways	24,179	-	-	-	24,179
Sewer systems	-	-	-	2,924	2,924
Communication towers	16,146	-	-	-	16,146
Parks trails and improvements	15,562	-	-	1,578	17,140
Land improvements	110	-	-	-	110
Structures and improvements	1,592,498	22,642	(1,089)	67,735	1,681,786
Equipment	524,781	54,434	(26,963)	4,116	556,368
Total capital assets, being depreciated	5,025,747	110,050	(28,052)	343,256	5,451,001
Less accumulated depreciation for:					
Infrastructure	(1,221,481)	(121,966)	-	-	(1,343,447)
Land improvements	(25)	(1)	-	-	(26)
Structures and improvements	(424,466)	(39,587)	882	300	(462,871)
Equipment	(311,223)	(37,550)	25,725	(276)	(323,324)
Total accumulated depreciation	(1,957,195)	(199,104)	26,607	24	(2,129,668)
Total capital assets, being depreciated, net	3,068,552	(89,054)	(1,445)	343,280	3,321,333
Governmental activities capital assets, net	$ 4,355,657	$ 214,715	$ (1,854)	$ -	$ 4,568,518

Source: (Riverside County Comprehensive Annual Financial Report 2016)

4.4 Critical Facilities and Infrastructures

Critical facilities are facilities that pose unacceptable risks to public safety if severely damaged or non-operational. In Riverside County, critical facilities include schools, hospitals, fire stations, police stations, 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.

Critical facilities may provide only limited services if lifelines are disrupted. Seismic hazard mitigation for lifeline structures is complex given the diversity of lifeline facilities. Earthquake ground motion could affect a variety of lifeline structures such as the control tower in an airport or the buildings that house computers and telephone circuits that are central to communications networks. Strong ground motion can also result in damage to freeway interchanges and bridges that are essential for successful transportation of goods and services. Buried pipelines are generally not damaged by strong ground motions, but can be severely disrupted in areas of surface rupture, liquefaction, or landslides.

Figure 25: Riverside County Capital Assets

COUNTY OF RIVERSIDE
Capital Asset Statistics by Function
Last Ten Fiscal Years
June 30, 2016

	Fiscal Year Ending June 30				
Function/Program	**2016**	**2015**	**2014**	**2013**	**2012**
County Libraries					
Branch libraries	35	35	35	35	33
Book mobiles	2	2	2	2	2
Books in collection	1,168,364	1,382,932	1,393,689	1,657,925	1,570,834
Museum	1	-	-	-	-
Riverside University Health Systems - Medical Center					
Major clinics	4	4	4	4	4
Routine and specialty clinics	44	44	44	37	
Beds licensed	439	439	439	439	439
Fire					
Stations	37	37	37	38	42
Trucks	158	158	145	142	145
Parks and Recreation					
Regional parks	11	14	11	11	11
Historic sites	5	5	5	5	5
Nature centers	4	4	4	4	4
Archaeological sites	6	5	6	6	6
Wildlife reserves	9	7	9	9	9
RV and mobile home parks	2	2	3	3	3
Managed areas	5	5	5	5	5
Recreational facilities	3	1	3	2	2
Community centers	1	1	-	-	-
Sheriff					
Patrol stations	10	10	10	10	10
Patrol vehicles	930	932	928	916	915
Waste Resources					
Landfills	6	6	6	6	6
Capacity in tons	62,191,202	54,232,021	54,230,474	54,230,474	54,189,339

Source: (Riverside County Comprehensive Annual Financial Report, 2016)

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

4.4.1 Mitigation Goals and Strategies Relating to Critical Facilities

From approximately 2011 to 2013 the Riverside County General Plan is/was undergoing an update. It was approved and adopted in 2015. The Riverside County Multi-Jurisdictional Local Hazard Mitigation Plan was included in the Safety Element of the 2015 General Plan. Upon completion of the LHMP plan update and FEMA approval, EMD will coordinate an update with the Riverside County Transportation and Land Management Agency to the Safety Element of the General Plan in accordance with Senate Bill 1000.

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

S 7.7 Strengthen the project permit and review process to ensure that proper actions are taken to reduce hazard impacts and to 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

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. 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, be designed, located, structurally upgraded, fit with safety shutoff valves, be designed for easy maintenance, and have redundant back up 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, and drains) are 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 7.8 Promote strengthening of planned and existing utilities and lifelines, the retrofit and rehabilitation of existing weak structures, and the relocation of certain critical facilities. S 7.9 Find alternatives that improve site safety for the protection of critical facilities. Property acquisition for open space, change in building use or occupancy, or other appropriate measures can be employed to reduce risks posed by hazards. (AI 101)

S 7.10 Discourage development of critical facilities that are proposed in dam failure inundation areas, and apply hazardous materials safety guidelines within such zones

S 7.11 Coordinate with the Public Utilities Commission (PUC) and/or utilize 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):

- Extend through areas of high liquefaction potential.
- Cross active faults.
- Traverse earth cracks or landslides.

S 7.12 Require extra design considerations for lifelines across subsidence areas

Source: (All from Safety Element S-7: Critical Facilities and Lifelines)

Note: The Mitigation Goals and Strategies related to each hazard are found in Section 5 of the 2017 LHMP.

4.4.2 Loss Factors

The loss estimates provided in this LHMP are based on data currently available and result in an approximation of risk used to understand relative risk from various hazards and potential losses. There are uncertainties inherent in any loss estimation methodology, in part from incomplete knowledge concerning the different hazards, as well as approximations and simplifications used in the analysis. You can see from the map below that the region of Riverside County has the highest number of declared disasters since 1950.

Figure 26: 2013 California State Hazard Mitigation Plan, Primary Sources of Disaster Losses



Table 4.F from the 2013 SHMP Chapter 4, identifies disaster incidents, casualties, and Cal OES costs by type. Cal OES has revised the database during the preparation of the 2013 State Hazard Mitigation Plan (SHMP).

Table 11: Disaster Incidents, Casualties, and Cost by Type

Table 4.F: Disaster Incidents, Casualties, and Cost by Type, 1950 - 2012

Disaster Type	Emergencies Through 2012	State Emergency Proclamations Though 2012	Federal Disaster Declarations Though 2012	Deaths Through 2012*	Injuries Through 2012*	Cal OES-Administered Costs Though 2012*
Fire	178	75	122	129	2,139	$2,735,466,734
Flood	129	116	47	294	759	$4,548,964,020
Earthquake	23	21	13	193	18,962	$8,110,772,990
Agricultural	18	17	0	0	0	$389,895,974
Freeze	9	8	4	0	0	$1,017,890,620
Landslide	9	8	1	24	0	$126,172,037
Economic	6	6	1	0	0	$32,823,425
Civil Unrest	6	6	1	85	3,331	$167,722,732
Drought	8	8	0	0	0	$2,686,858,480
Hazardous Material	5	3	0	0	0	0
Wind	3	3	0	0	0	$82,100
Air Disaster	2	2	0	232	2	0
Facility	2	2	0	0	0	$654,897
Road Damage	3	3	0	0	0	$462,986
Tsunami	3	3	2	13	1	$49,617,379
Invasive Species	1	1	0	0	0	0
Storms	6	6	1	0	0	$69,392,668
Tornado	1	1	0	0	0	0
Other	5	5	0	0	0	$10,660,320
Total	***417***	***294***	***192***	***970***	***25,194***	***$19,947,437,362***

Source: Cal OES database

Table 4.F 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 four 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.

From this analysis it is clear that these three hazards – earthquakes, fires, and floods – are the predominant disasters in California since 1950. For this reason these hazards are being addressed in the 2017 Mitigation Strategies and are among the top ten hazards for the County.

For Riverside County, fires occur more often, but there have been more declarations for Flooding. The Earthquake hazard for Riverside County is compounded by the three major faults that traverse the county: San Andreas, Elsinore and San Jacinto Faults.

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. In light of 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 particular hazard. Earthquake mitigation actions often involve expensive projects that will be considered as funding becomes available.

The 2013 State Hazard Mitigation Plan (SHMP) is the data source contained in Figure 26 “2013 California State Hazard Mitigation Plan, Primary Sources of Disaster Losses” and Table 14 “Disaster Incidents, Casualties, and Cost by Type.” Once the 2018 SHMP is completed and approved, Figure 26 and Table 14 will be updated to include the most recent maps and new information.

4.4.3 2015 General Plan Policies on High Risk Facilities

Many essential public facilities and hazardous materials sites are located within the 100-year flood zones of Riverside County making them a high risk facility. These facilities include: 14 of Riverside 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.

In attempts to mitigate future damages from hazards Riverside County has adopted the following policies related to high risk facilities:

S 4.12 Require certain existing essential, dependent care, and high-risk facilities that are not in conformance with provisions of the County zoning to upgrade or modify building use to a level of safety consistent with the inundation risk.

S 4.13 Require that facilities storing substantial quantities of hazardous materials within inundation zones shall be adequately flood-proofed and hazardous materials containers shall be anchored and secured to prevent flotation and contamination.

S 4.14 Require that dependent care facilities have all flood-vulnerable electrical circuitry flood-proofed.

S 4.15 Require that high-risk facilities maintain and rehearse inundation response plans.

S 4.16 Utilize power of public land acquisition and other land use measures to create open space zoning of inundation zones in areas that are destined for redevelopment; when this is not feasible, low density land uses should be employed.

S 4.17 Continue to assess and upgrade inundation risk and protection in the County.

S 4.18 Require that the design and upgrade of street storm drains be based on the depth of inundation, relative risk to public health and safety, the potential for hindrance of emergency access and regress from excessive flood depth, and the threat of contamination of the storm drain system with sewage effluent. In general, the 10-year flood flows shall be contained within the top of curbs and the 100-year flood flows within the street right-of-way.

S 4.19 Encourage periodic reevaluation of the 500-year, 100-year and 10-year flood hazard in the county by state, federal, county, and other sources, and use such

studies to improve existing protection, to review protection standards proposed for new development and redevelopment, and to update emergency response plans.

S 4.20 Balance flood control mitigation with open space and environmental protection.

S 4.21 Encourage the use of specific plans to allow increased densities in certain areas of a proposed development; or apply Transfer of Development Credits to encourage the placement of appropriate land uses in natural hazard areas, including open space, passive recreational uses, or other development capable of tolerating these hazards.

S 4.22 Take an active role in acquiring property in high-risk flood zones and designating the land as open space for public use or wildlife habitat.

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

4.5 Estimated Property Loss

Table 12: Riverside County Property Values by City

RIVERSIDE COUNTY ASSESSOR
ASSESSED VALUE FOR CITIES
2016/2017

CITY	TOTAL 2016/2017 LOCAL ROLL	LESS NON-REIMBURSED EXEMPTIONS	NET TANGIBLE VALUE	LESS HOMEOWNER'S EXEMPTIONS	2016/2017 NET TAXABLE VALUE	2015/2016 NET TAXABLE VALUE	ASSESSED VALUE CHANGE	PERCENTAGE CHANGE
BANNING	2,045,247,539	45,871,853	1,999,375,686	37,881,836	1,961,493,850	1,882,818,554	78,675,296	4.18%
BEAUMONT	4,033,833,512	72,476,220	3,961,357,292	45,964,609	3,915,392,683	3,643,317,362	272,075,321	7.47%
BLYTHE	761,613,603	63,004,403	698,609,200	10,157,238	688,451,962	650,422,651	38,029,311	5.85%
CALIMESA	777,715,662	23,367,990	754,347,672	11,668,290	742,679,382	688,503,238	54,176,144	7.87%
CANYON LAKE	1,652,995,284	7,904,074	1,645,091,210	15,499,400	1,629,591,810	1,576,999,192	52,592,618	3.33%
CATHEDRAL CITY	4,283,435,909	138,609,909	4,144,826,000	45,685,725	4,099,140,275	3,895,539,688	203,600,587	5.23%
COACHELLA	1,830,946,311	145,800,821	1,685,145,490	20,232,061	1,664,913,429	1,568,941,117	95,972,312	6.12%
CORONA	19,089,817,282	295,245,447	18,794,571,835	137,765,442	18,656,806,393	17,908,062,535	748,743,858	4.18%
DESERT HOT SPRINGS	1,551,338,227	50,664,372	1,500,673,855	18,806,180	1,481,867,675	1,387,764,103	94,103,572	6.78%
EASTVALE	8,480,220,118	24,367,500	8,455,852,618	52,006,677	8,403,845,941	7,985,398,302	418,447,639	5.24%
HEMET	5,462,283,087	160,726,514	5,301,556,573	83,700,458	5,217,856,115	4,910,865,826	306,990,289	6.25%
INDIAN WELLS	5,405,900,297	44,360,931	5,361,539,366	8,750,000	5,352,789,366	5,199,720,372	153,068,994	2.94%
INDIO	7,833,242,426	166,041,389	7,667,201,037	67,986,440	7,599,214,597	7,227,358,677	371,855,920	5.15%
JURUPA VALLEY	8,549,381,868	73,158,280	8,476,223,588	71,144,081	8,405,079,507	7,759,097,935	645,981,572	8.33%
LA QUINTA	12,656,728,074	153,105,942	12,503,622,132	49,049,000	12,454,573,132	11,928,886,312	525,686,820	4.41%
LAKE ELSINORE	5,307,465,580	51,072,923	5,256,392,657	44,361,317	5,212,031,340	4,804,948,961	407,082,379	8.47%
MENIFEE	8,298,729,553	144,682,408	8,154,047,145	104,886,464	8,049,160,681	7,546,039,225	503,121,456	6.67%
MORENO VALLEY	14,312,770,759	265,286,262	14,047,484,497	137,670,247	13,909,814,250	13,082,108,737	827,705,513	6.33%
MURRIETA	12,399,753,873	427,027,712	11,972,726,161	106,791,901	11,865,934,260	11,517,794,187	348,140,073	3.02%
NORCO	3,070,099,530	56,750,389	3,013,349,141	28,081,200	2,985,267,941	2,869,322,737	115,945,204	4.04%
PALM DESERT	14,272,341,711	177,182,717	14,095,158,994	67,417,332	14,027,741,662	13,676,360,170	351,381,492	2.57%
PALM SPRINGS	11,645,678,225	248,294,657	11,397,383,568	60,181,033	11,337,202,535	10,611,925,311	725,277,224	6.83%
PERRIS	5,260,169,698	62,427,955	5,197,741,743	42,537,361	5,155,204,382	4,701,427,764	453,776,618	9.65%
RANCHO MIRAGE	8,800,691,414	547,774,373	8,252,917,041	29,367,800	8,223,549,241	7,902,324,250	321,224,991	4.06%
RIVERSIDE	28,238,701,299	1,258,881,996	26,979,819,303	240,204,427	26,739,614,876	25,457,203,551	1,282,411,325	5.04%
SAN JACINTO	2,686,709,160	53,470,350	2,633,238,810	37,396,030	2,595,842,780	2,450,518,477	145,324,303	5.93%
TEMECULA	14,978,634,970	211,399,196	14,767,235,774	107,238,640	14,659,997,134	13,956,583,981	703,413,153	5.04%
WILDOMAR	3,076,506,781	78,932,764	2,997,574,017	34,419,940	2,963,154,077	2,792,309,928	170,844,149	6.12%
CITY TOTALS	216,762,951,752	5,047,889,347	211,715,062,405	1,716,851,129	209,998,211,276	199,582,563,143	10,415,648,133	5.22%

Table 13: Unincorporated Riverside County Property Values

RIVERSIDE COUNTY ASSESSOR

ASSESSED VALUE FOR UNINCORPORATED AREAS 2016/2017

AREA	TOTAL 2016/2017 LOCAL ROLL	LESS NON-REIMBURSED EXEMPTIONS	NET TANGIBLE VALUE	LESS HOMEOWNER'S EXEMPTIONS	2016/2017 NET TAXABLE VALUE	2015/2016 NET TAXABLE VALUE	ASSESSED VALUE CHANGE	PERCENTAGE CHANGE
Alvord	1,230,054,315	4,293,168	1,225,761,147	13,185,200	1,212,575,947	1,168,289,865	44,286,082	3.79%
Banning	857,212,468	6,125,583	851,086,885	4,479,983	846,606,902	852,236,383	(5,629,481)	-0.66%
Beaumont	648,297,773	15,075,109	633,222,664	10,993,484	622,229,180	586,683,054	35,546,126	6.06%
Coachella	1,671,093,056	80,010,632	1,591,082,424	8,069,138	1,583,013,286	1,510,147,344	72,865,942	4.83%
Colton	116,664,357	2,395,678	114,268,679	1,022,000	113,246,679	109,632,339	3,614,340	3.30%
Corona-Norco	3,875,856,489	25,066,596	3,850,789,893	37,439,128	3,813,350,765	3,662,399,145	150,951,620	4.12%
Desert Center	225,135,919	268,078	224,867,841	286,731	224,581,110	230,368,870	(5,787,760)	-2.51%
Desert Sands	3,278,845,921	24,635,707	3,254,210,214	29,894,896	3,224,315,318	3,160,090,327	64,224,991	2.03%
Elsinore	1,751,940,102	26,941,744	1,724,998,358	20,938,252	1,704,060,106	1,619,779,503	84,280,603	5.20%
Hemet	4,630,913,679	178,713,683	4,452,199,996	60,345,499	4,391,854,497	4,219,200,805	172,653,692	4.09%
Menifee	723,454,268	4,564,864	718,889,404	5,084,800	713,804,604	633,826,810	79,977,794	12.62%
Moreno	675,058,135	6,544,761	668,513,374	1,183,000	667,330,374	667,642,315	(311,941)	-0.05%
Murrieta	2,324,077,841	6,592,272	2,317,485,569	11,002,600	2,306,482,969	2,232,361,878	74,121,091	3.32%
Nuview	748,064,054	5,474,709	742,589,345	9,152,982	733,436,363	684,809,351	48,627,012	7.10%
Palm Springs	2,056,242,569	80,765,934	1,975,476,635	25,297,200	1,950,179,435	1,901,356,909	48,822,526	2.57%
Palo Verde	632,543,996	2,784,631	629,759,365	2,604,106	627,155,259	595,860,635	31,294,624	5.25%
Perris	690,091,152	2,975,783	687,115,369	7,771,056	679,344,313	639,320,863	40,023,450	6.26%
Riverside	3,199,609,739	36,371,239	3,163,238,500	33,399,108	3,129,839,392	2,912,917,501	216,921,891	7.45%
Romoland	477,974,775	4,577,213	473,397,562	9,274,571	464,122,991	429,229,956	34,893,035	8.13%
San Jacinto	253,872,969	124,842,772	129,030,197	1,572,281	127,457,916	122,212,421	5,245,495	4.29%
Temecula	6,526,157,456	97,664,677	6,428,492,779	48,139,000	6,380,353,779	5,988,694,048	391,659,731	6.54%
Val Verde	1,597,610,712	148,031,619	1,449,579,093	14,465,706	1,435,113,387	1,369,550,576	65,562,811	4.79%
Yucaipa	99,434,526	135,778	99,298,748	917,000	98,381,748	94,389,584	3,992,164	4.23%
TOTALS	38,290,206,271	884,852,230	37,405,354,041	356,517,721	37,048,836,320	35,391,000,482	1,657,835,838	4.68%

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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 *Understanding Your Risks—Identifying Hazards and Estimating Losses* (FEMA 386-2, 2002), 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 County Local Hazard Mitigation 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 the jurisdiction's 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 similar to those described here for the entire Riverside County Operational Area LHMP.

The Riverside County Operational Area LHMP 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 County Local Hazard Mitigation Steering Committee utilized the existing 2012 Local Hazard Mitigation Plan identified hazards. Using existing hazard data and input gained through planning meetings, the Hazard Mitigation Steering Committee agreed upon a list of natural, man-made 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. Man-made and technological hazards were evaluated in the same manner. During the assessment of the identified County hazards the Steering Committee realized the need to add Cyber Attack and Communication Failure to the Local Hazard Mitigation Plan. The Committee based this decision off of the history of events and probability of future occurrences.

Please see table 4.1 Hazard Identification Table for justification of each hazards ranking.

Table 14: 2017 LHMP Top 5 Identified Hazards

Riverside County Multi-Jurisdictional Local Hazard Mitigation Plan Risk Assessment Chart						
Jurisdiction	Priority Risk/ Hazards					Differs from County Priorities?
County	**#1**	**#2**	**#3**	**#4**	**#5**	
Riverside OA	Earthquake	Pan Flu	Wildfire	Electrical Failure	Emergent. Disease	See Section 5.3
Cities						
Banning	Earthquake	Fire	Transportation	HazMat	Flood	Yes
Beaumont	Earthquake	Fire	Flood	HazMat	Transportation	Yes
Blythe	Extreme Weather	Wind	Power Failure	Transportation	HazMat	Yes
Calimesa	Fire	Earthquake	Flood	Extreme Weather	Drought	Yes
Canyon Lake	Flood	Earthquake	Fire	Transportation	Nuclear Incident	Yes
Cathedral City	Earthquake	Flood	Wind	Landslide	Extreme Weather	Yes

Coachella	Earthquake	Extreme Weather	HazMat	Power Failure	Wind	Yes
Corona	Earthquake	Fire	Power Failure	Terrorism	Flood	Yes
Desert Hot Springs	Earthquake	Flood	Fire	Extreme Weather	Wind	Yes
Eastvale	Earth	Flood	Fire	Pipeline	Insect Infestation	Yes
Hemet	Earthquake	Pan Flu	Fire	Electrical Failure	Emergent Disease	No
Indian Wells	Earthquake	Flood	Extreme Weather	Power Failure	Wind	Yes
Indio	Earthquake	Extreme Weather	Emergent Disease	Pan Flu	Drought	Yes
Jurupa Valley	Earthquake	Pan Flu	Fire	Power Failure	Emergency Disease	No
La Quinta	Earthquake	Flood	Power Failure	Extreme Weather	Drought	Yes
Lake Elsinore	Fire	Flood	Power Failure	Extreme Weather	Drought	Yes
Murrieta	Earthquake	Pan Flu	Fire	Power Failure	Emergent Disease	No
Norco	Flood	Fire	Earthquake	Extreme Weather	Agricultural Hazard	Yes
Palm Desert	Earthquake	Flood	Extreme Weather	Power Failure	Drought	Yes
Palm Springs	Earthquake	Power Failure	Transportation	Extreme Weather	Wind	Yes

Perris	Fire	Flood	Earthquake	HazMat	Power Failure	Yes
Rancho Mirage	Earthquake	Flood	Fire	Drought	Civil Unrest	Yes
Riverside	Earthquake	Flood	Drought	Terrorism	Fire	Yes
San Jacinto	Earthquake	Extreme Weather	Flood	Landslide	Drought	Yes
Temecula	Transportation	Earthquake	Flood	Terrorism	Fire	Yes
Wildomar	Earthquake	Fire	Drought	Flood	Extreme Weather	Yes
Tribes						
Morongo	Wildfire	Severe Wind Event	Earthquake	Electrical Failure	Transportation	Yes
Special Districts						
Eastern Municipal Water	N/A	N/A	N/A	N/A	N/A	See Annex
High Valleys Water	Extreme Weather	Drought	Fire	Wind	Power Failure	Yes
Idyllwild Fire Protection	Fire	Drought	Insect Infestation	Earthquake	Pan Flu	Yes
Imperial Irrigation District	Earthquake	Extreme Weather	Terrorism	N/A	N/A	Yes
Kaiser	Earthquake	Fire	Extreme Weather	Drought	Wind	Yes

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

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

5.2 Agency Inventory Description

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

1. Economic loss and recovery
2. Physical loss of structures (residential, commercial, and critical facilities)
3. Infrastructure loss or damage
4. Continuity of operations for a normal daily governmental activities
5. Ability to quickly recover from the event and return to normal daily activities
6. Loss of life and potential injuries from the event.

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 2012 plan update and again for the 2017 update. Participants were informed that the county hazards were likely to be re-ranked and Communication Failure and Cyber-attack would be added.

Figure 27: 2012 and 2017 Participant Ranking Chart

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 MAN-MADE					
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. PANDEMIC					

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

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

The County Ranking used a similar format when looking at the probability and severity of a potential hazard but also included information on Healthcare Impact and Mitigation Capabilities. The following chart was used by the Local Hazard Mitigation Steering Committee while ranking the 2017 Hazards.

Figure 28: 2017 County Hazard Ranking and Risk Scores

HAZARD	PROBABILITY	SEVERITY	HEALTHCARE	EMS	BEHAVIORAL / MENTAL HEALTH	RESPONDER AGENCIES	COMMUNITY AGENCIES	*RISK SCORE*
	Improbable: 0 Remote: 1 Occasional: 2 Probable: 3 Frequent: 4	NA: 0 Negligible: 1 Marginal: 2 Critical: 3 Catastrophic: 4	NA: 0 Negligible: 1 Marginal: 2 Critical: 3 Catastrophic: 4	NA: 0 Negligible: 1 Marginal: 2 Critical: 3 Catastrophic: 4	NA: 0 Negligible: 1 Marginal: 2 Critical: 3 Catastrophic: 4	NA: 0 Low: 1 Moderate: 2 High: 3 Extreme: 4	NA: 0 Low: 1 Moderate: 2 High: 3 Extreme: 4	
Aqueduct	2	3	2	2	2	2	3	**0.38**
Drought	3	3	2	2	2	2	2	**1.13**
Earthquake	2	4	4	4	3	2	2	**3.50**
Extreme Weather	2	3	2	2	2	2	2	**0.75**
Flood	3	3	2	3	2	2	3	**1.13**
Insect Infestation	3	2	2	1	1	2	2	**0.00**
Landslide	3	3	1	1	1	2	2	**-0.56**
Tornado	1	2	2	2	2	2	2	**0.25**
Wildland Fire	4	3	3	3	3	3	3	**2.25**
Civil Disorder	2	3	3	3	1	4	0	**1.13**
Communications Failure	2	3	3	3	3	3	3	**1.13**
Cyber Attack	4	2	3	2	2	3	1	**1.50**
Dam Failure	1	3	2	3	2	2	3	**0.38**
Electrical Failure	4	4	2	2	2	2	2	**2.00**
HazMat Incident	4	3	2	2	1	3	3	**-0.75**
Jail/Prison Event	1	2	1	1	1	4	0	**-0.13**
Nuclear/Radiological Incident	1	4	2	3	3	2	2	**1.00**
Pipeline Disruption	2	3	2	2	1	3	3	**-0.38**
Terrorist Event - MCI	1	3	3	3	4	3	1	**1.13**
Transportation Failure	2	3	2	2	1	2	2	**0.38**
Water Supply Disruption/Contamination	3	2	0	0	0	2	2	**-1.50**
Emergent Disease/Contamination	3	3	3	3	2	3	2	**1.69**
Pandemic Flu	2	4	4	4	4	3	2	**3.50**

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 the individual cities and special districts. Cal OES MyPlan was used for information about floods, earthquake, fire and some critical facilities locations. Additionally, Riverside County Transportation and Land Management Agency provided maps detailing where hazards and critical facilities are located.

All participating jurisdictions and special 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)

Identification of Hazards

With its varying topography; a mix of urban and rural areas and rapidly growing permanent, transient, and recreational populations, the Riverside County Operational Area is subject to potential negative impacts from a broad range of hazards and threats. There are three broad categories of hazards that threaten the OA:

- Natural hazards
- Technological hazards
- Man-Made hazards

5.3.1 Earthquake

Severity: 4

Probability: 2

Risk Score: 3.50

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 the breaking and shifting of rock beneath the Earth's surface. 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 construction. Bridges are particularly 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 of time. 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 as a result of the ground shaking.

Figure 29: Historical Earthquakes in the Riverside County Area - 5.0 and Above

Year	Richter Scale Magnitude	Description
1812	7.0	Occurred on the southern section of the San Andreas fault near Wrightwood.
1857	7.9	Occurred 60 miles northwest of Fort Tejon and ruptured 225 miles of the San Andreas fault.
1890	6.5	Occurred in the "San Jacinto or Elsinore Fault region" on the Rockhorse Truck Trail, north of the Borrego Valley Airport.
1890	6.5	Occurred in the same region as the 1890 earthquake.
1899	6.4	San Jacinto earthquake destroys San Jacinto and Hemet
1910	5.0	Occurred on the Elsinore fault northwest of the City of Lake Elsinore.
1918	6.9	San Jacinto earthquake strikes the same area that was damaged by an earthquake 19 years earlier.
1923	6.3	North San Jacinto Fault earthquake damaged the San Bernardino and Redlands area. This the last known time that this fault, which runs under the I-215/I-10 interchange, ruptured in this area.
1937	6.0	Terwilliger Valley earthquake was in the same general area as the 1890 earthquake.
1942	6.3	Fish Creek Mountains earthquake was south of the Ocotillo airport.
1954	6.2	Arroyo Salada earthquake was west of the Salton Sea.
1968	6.5	Borrego Mountain Earthquake was northeast of Ocotillo Wells
1987	6.6	Superstition Hills earthquake near the Salton Sea
1992	7.2	Occurred near Landers, California and caused the rupture of five different faults. Those faults were: Johnson Valley, Landers, Homestead Valley, Emerson, and Camp Rock.
1992	7.3	Occurred 3 hours after the Landers Earthquake with an epicenter near Big Bear, CA
1994	6.8	Northridge Earthquake
1999	7.4	Hector Mine Earthquake
2010	5.4	Borrego Springs earthquake believed by seismologists to have been possibly triggered by the strong earthquake which occurred near Calexico in 2010.

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 centers devoted to the detection and logging of earthquake events record the ongoing weekly activity of small magnitude in Riverside County faults. The most recent earthquake in Riverside County was located in Banning on July 7, 2017, and had a magnitude of 1.1. There are a number of small scale earthquakes that happen weekly but larger scale or catastrophe shaking is less likely.

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 several dams in Riverside County. The community needs would most likely exceed the response capability of the County's 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 **catastrophic** earthquake in Riverside County could cause thousands of casualties, extensive major 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 of Riverside County and most of southern California, causing a critical demand on mutual aid resources and competition for national relief.

Key effects and response considerations:

- **Effects on people and housing.** In any earthquake, the primary consideration is saving lives. Time and effort must also be dedicated to providing for mental health for reuniting families, providing shelter to displaced persons, and restoring basic needs and services. Major efforts will be required to remove debris and clear roadways, demolish unsafe structures, assist in re-establishing public services and utilities, and provide continuing care and temporary housing for affected citizens.

  A survey of local, State, and Federal government emergency plans indicate that although there is a general capacity to respond to small and intermediate-sized earthquakes, it is unlikely that any of these governmental units will be able to cope with the immediate impact of a great quake, such as a Magnitude (M) 8.3 event on the south-central San Andreas fault. The general public must realize that the assistance that they have been used to expecting simply will not be immediately available. In fact, in the event of an earthquake of such magnitude, citizens must be prepared to wait for up to 72 hours or more for any type of organized response.

- **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 and/or facilities. With business losses, the County of Riverside and the cities in the Riverside County Operational Area will lose revenue. Economic recovery from even a minor earthquake will be critical to the communities involved.

- **Effects on infrastructure.** The damage caused by an earthquake can lead to the paralysis of the local infrastructure: police, fire, medical and governmental services.

- **Effects on Critical Facilities.** A large number of critical facilities have been identified as being adjacent to the various faults in the County and surrounding counties. The list of facilities includes hospitals, fire stations, law enforcement facilities, and schools.

  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.

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 within the earth. The San Andreas Fault in California forms a continuous, narrow break in the earth's crust that extends from northern California southward to Cajon Pass near San Bernardino; southeastward from Cajon Pass. Several branching faults, including the San Jacinto and Banning faults, share the movement of the crustal plates as the fault continues to the south east, on to the Salton Sea and on to Baja California Sea of Cortez.

Recent studies of the eastern section 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, has prompted scientists to increase their studies of this area.

The San Jacinto fault has had a higher level of moderate-to- large earthquakes during the past 50 to 100 years, although the rate of slip is not as high. Geodetic data indicates there is an "appreciable" strain accumulation across both faults, implying that either one or both may be primed for release. One of the larger and more active fault segments of

the San Jacinto fault, the Casa Loma Faults, runs from near Perris Reservoir to just north of Anza. Also, another large and active named segment is the Clark Fault, which runs from near Hemet to just 9 miles southwest of the shore of the Salton Sea. Historically, 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. The last slip occurred on the Superstition Hills and Elmore Ranch sequence in1987. 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.

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, a magnitude 6 shock near Temescal Valley.

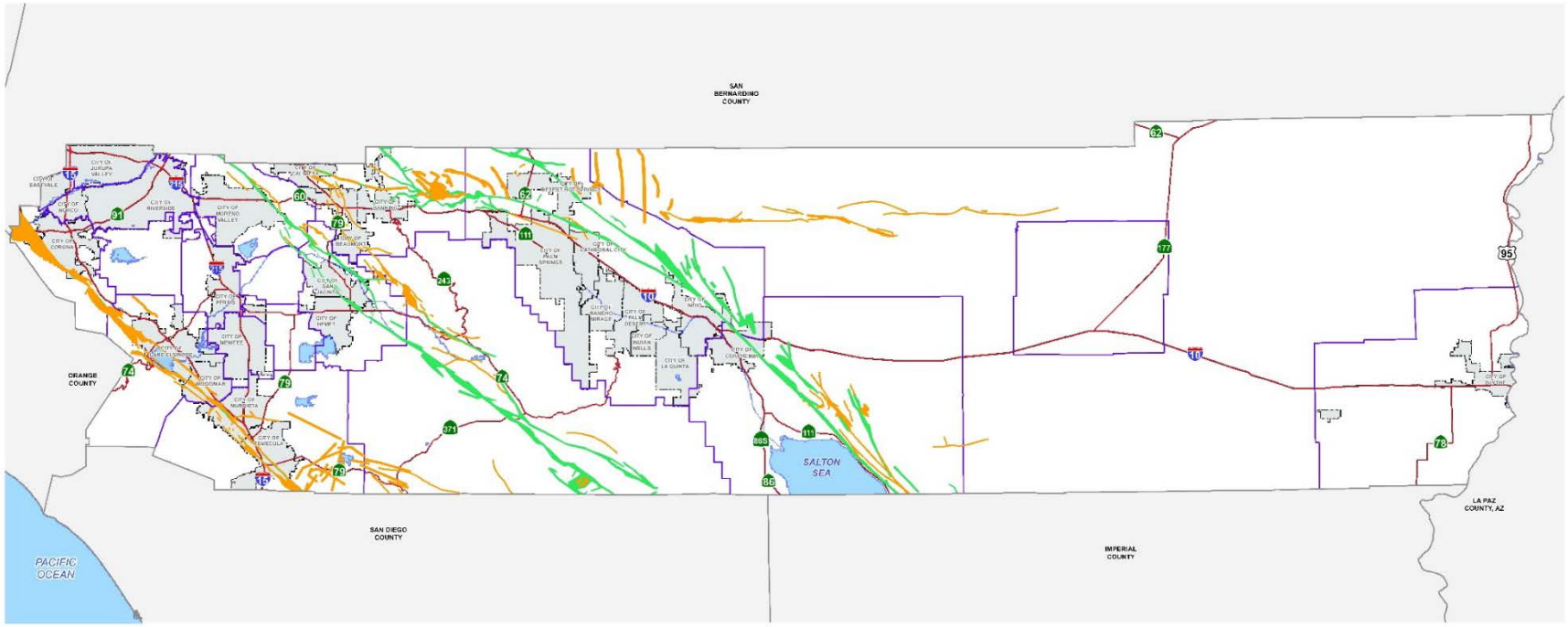
Risk Assessment Conclusion.

Riverside County is at risk for a significant earthquake 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 and tremblers each month from the myriad of 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 the most heavily populated western portion of the County and the Coachella Valley, due to the presence of two of California's most active faults, the San Andreas and San Jacinto. The risk is moderate in the eastern portion of the County beyond the Coachella Valley.

The following maps have been provided by the Riverside County Transportation and Land Management Agency and developed using Cal OES MyPlan.

Map 2: Riverside County Faults and Zones



Data Source: Riverside County Geology (2013)/California Geological Survey (2008)

Figure S-2

EARTHQUAKE FAULT STUDY ZONES

Map 3: Fault Activity



Data Source:County Geology (2013)/California Geological Survey (2008)

Faults Activity

- Historic
- Historic (Creep)
- Holocene
- Late Quaternary
- Quaternary
- Pre-Quaternary
- Highways
- Area Plan Boundary
- City Boundary
- Waterbodies

Figure S-1

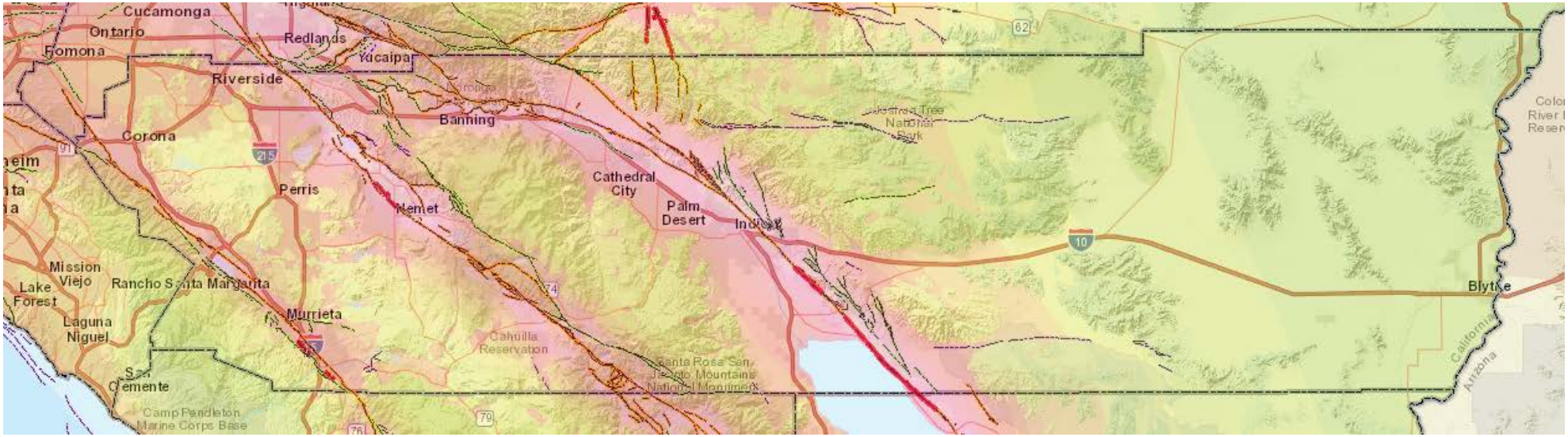
December 8, 2015

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 precis or shall be the sole responsibility of the user.

MAPPED FAULTING IN RIVERSIDE COUNTY

Map 4: Ground Shaking Potential



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 the possible failure of several dams in Riverside County.

Hazus Assessment

HAZUS®MH was used to generate general building stock and essential facility loss estimates for five different natural hazard scenarios. Two of the scenarios were large scenario earthquakes. The earthquakes chosen for analysis were an M6.8 Elsinore Fault Scenario Earthquake, and the M7.8 "ShakeOut" Scenario Earthquake on the Southern San Andreas Fault.

Risk assessment results were generated using the following HAZUS®MH analysis options:

- **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
  - Waste Water
  - Oil
  - Natural Gas

- Electric Power
- Communication

- **Induced Physical Damage**
  - Fire following
  - Debris
- **Direct Social Losses**
  - Casualties
  - Shelter

Table 18 (ES-2) provides a summary of HAZUS®MH-estimated regional impacts for Riverside County for the two earthquake scenarios. As shown in the tables, the total estimated direct economic loss related to building damage ranges from $1.8B to $9.8B in the two scenario events. It should be noted that these totals are for Riverside County only. Both earthquake scenarios have the potential to cause additional damage in adjacent counties (for example, the Elsinore scenario would also significantly impact San Diego and Orange counties), whose losses are not tabulated here.

Table 15: Summary of HAZUS estimated Impacts on Riverside County for Two Earthquake Scenarios

Table ES-2. Summary of HAZUS®MH-estimated Impacts on Riverside County for Two Earthquake Scenarios

Impact Category	M6.8Elsinore	M7.8"ShakeOut" San Andreas*
Economic Loss due to Building Damage	$1.2B	$6.9 B
Total Building-related Direct Economic Loss	$1.8B	$9.8 B
# Buildings in Complete Damage State	100	25,000* (many MH)
Debris Generated (million tons)	0.3	3.5
Displaced Households	110 Households	19,000 Households*
People Needing Short-term Shelter	90 People	8,600 People*
Fatalities (2 am, 2 pm, 5 pm)	<10,<10,<10	60 bldg (70 all causes)*
Total Injuries (2 am, 2 pm, 5 pm)	200, 200, 220	11,600 bldg (11,900 all)*
% of Households without Water	<1%	99%
# Highway Bridges w/ at least Moderate Damage (potentially closed)	None expected	100

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

Table 19 summarizes expected essential facility performance in the two earthquake events. Estimated building damages to essential facilities in Riverside County ranges from about $64M - $351M. These loss totals should not be considered all-inclusive, as replacement cost data was not available for many hospitals, and a small number of schools and police facilities.

Table 16: Summary of HAZUS – estimated Impacts for Riverside County Essential Facilities in Two Earthquake Scenarios

Essential Facility	Category	M6.8 Elsinore		M7.8 "ShakeOut" San Andreas	
		Mean Damage	Economic Loss ($1,000)	Mean Damage	Economic Loss ($1,000)
Hospitals*	Medium	2%	$4,858	14%	$3,842
	Large	0%	$899	26%	$5,180
Schools	K-12 (default data)	1%	$2,375	2%	$3,708
	K-12 (providing data)	1%	$54,774	6%	$314,182
	CCD (providing data)	0%	$706	5%	$24,465
EOCs		1%	$3	6%	$20
Police Stations		0%	$3	7%	$35
Fire Stations		1%	$3	4%	$14
TOTALS			**$63,620**		**$351,446**

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

Elsinore Earthquake Scenario – Regional Impacts

The M6.8 Elsinore scenario earthquake will impact the western-most communities and infrastructure of Riverside County. A summary of regional impacts is provided in Figure 29. These impacts are described below.

Of the approximately 647,000 buildings modeled within the improved general building stock data for Riverside County, less than 1% (approximately 100) are expected to suffer "complete" damage in the Elsinore scenario earthquake. These buildings 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

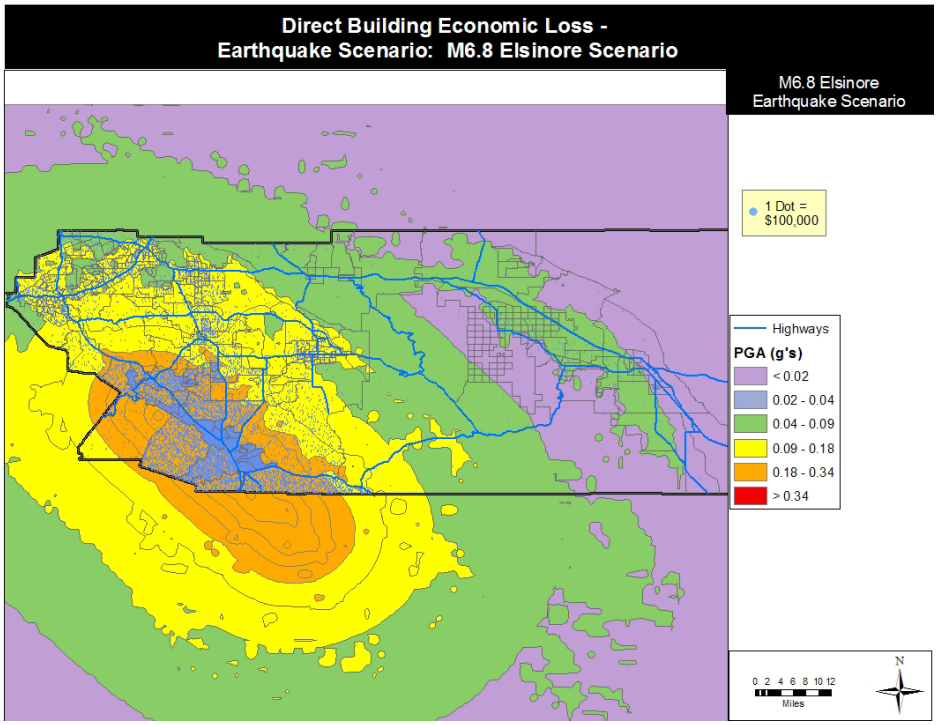
Search & Rescue (USAR). Approximately 2,200 buildings (0.3%) are expected to suffer "extensive" damage, and would be considered "yellow-tagged", with restrictions on continued use. While the remainder of buildings would be considered "green-tagged" (safe for occupancy, although some damage may have occurred), as many as 3% (20,500) would be expected to suffer "moderate" damage, and an additional 13% (82,700) would suffer "slight" damage.

As much as 0.3 million tons of debris may result from these damaged buildings – 47% is expected to be heavy debris (concrete and steel), requiring heavy equipment to break down and remove, while 53% is expected to be light debris (wood, brick and other debris).

The number of people killed as a result of shaking-induced and transportation system damage is expected to be less than 10, regardless of the time of day that the earthquake occurs.

Total injuries, including the range of injuries from minor injuries treated with basic medical care to mortal injuries (deaths), are expected to be on the order of 200-220. Transportation of the injured for treatment is not expected to be impacted by transportation system damage, as no bridge in the County is expected to suffer "moderate" damage or greater.

Figure 30: Direct Building Economic Loss



"ShakeOut" San Andreas Earthquake Scenario Regional Impacts

The M7.8 "ShakeOut" San Andreas scenario earthquake will impact most of the populated portions of Riverside County. A summary of impacts is provided in Table 19. It should be noted, however, that some 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.

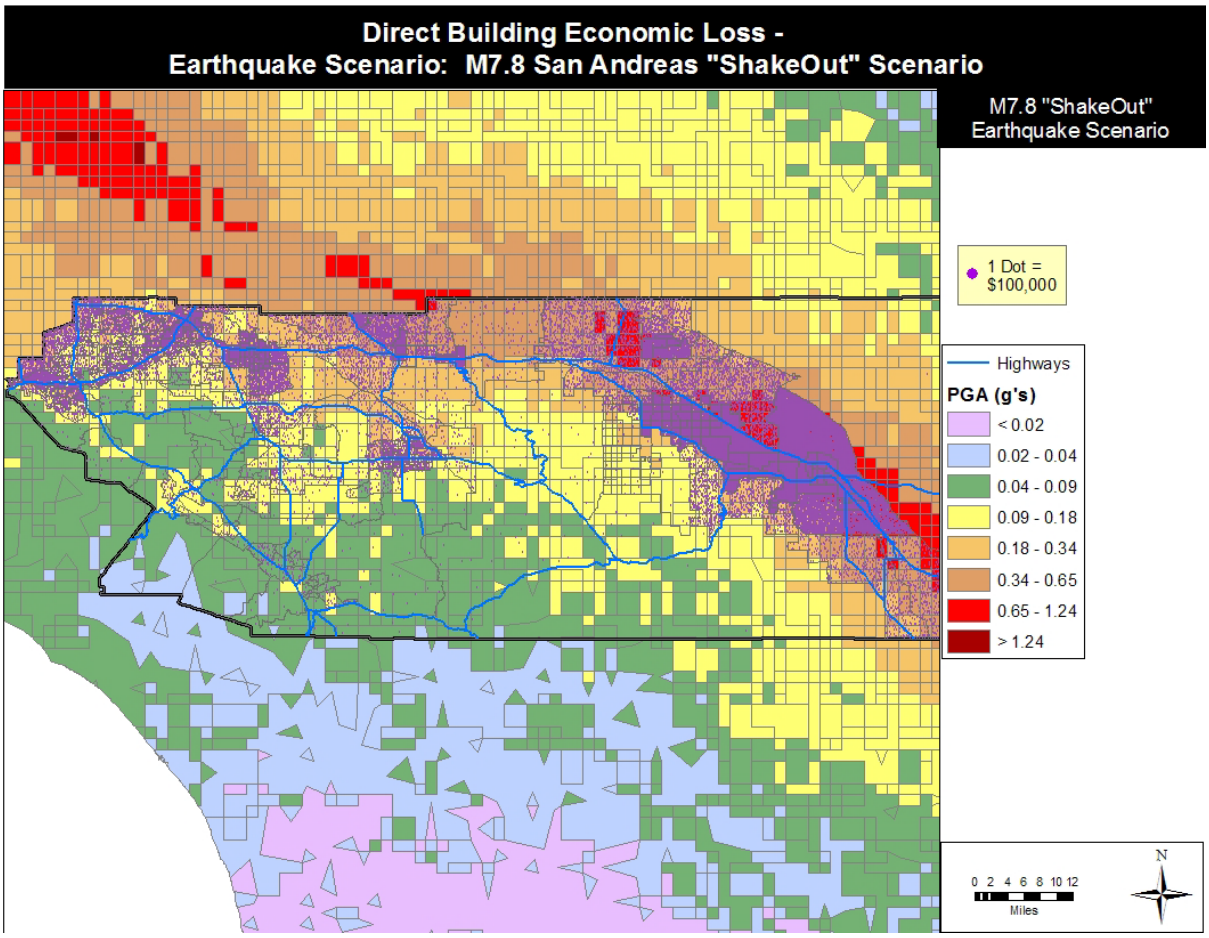
Table 17: Summary of HAZUS – Estimated Impacts for Riverside County Due to an M7.8 Scenario Earthquake on the "ShakeOut" San Andreas Fault

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

*Note: selected custom estimates for the "ShakeOut" scenario have been taken from: http://pubs.usgs.gov/of/2008/1150

In the M7.8 "ShakeOut" Scenario earthquake on the San Andreas Fault, dollar losses related to shaking-induced building damage are estimated to reach $6.9 billion, while total direct economic losses are expected to be approximately $9.8 billion. The geographic distribution of total direct economic loss is mapped in Figure 4-9.

Figure 31: 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 building, 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% is expected to be heavy debris (concrete and steel), requiring heavy equipment to break down and remove, while 42% 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 as a result of shaking-induced building, 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.

Essential Facility Impacts

Table 19 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% damage or less for EOCs, fire stations, police stations, and schools, but as much as 26% damage for large hospitals. The total economic loss for essential facilities has been estimated to exceed $351 million, with 97% 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.

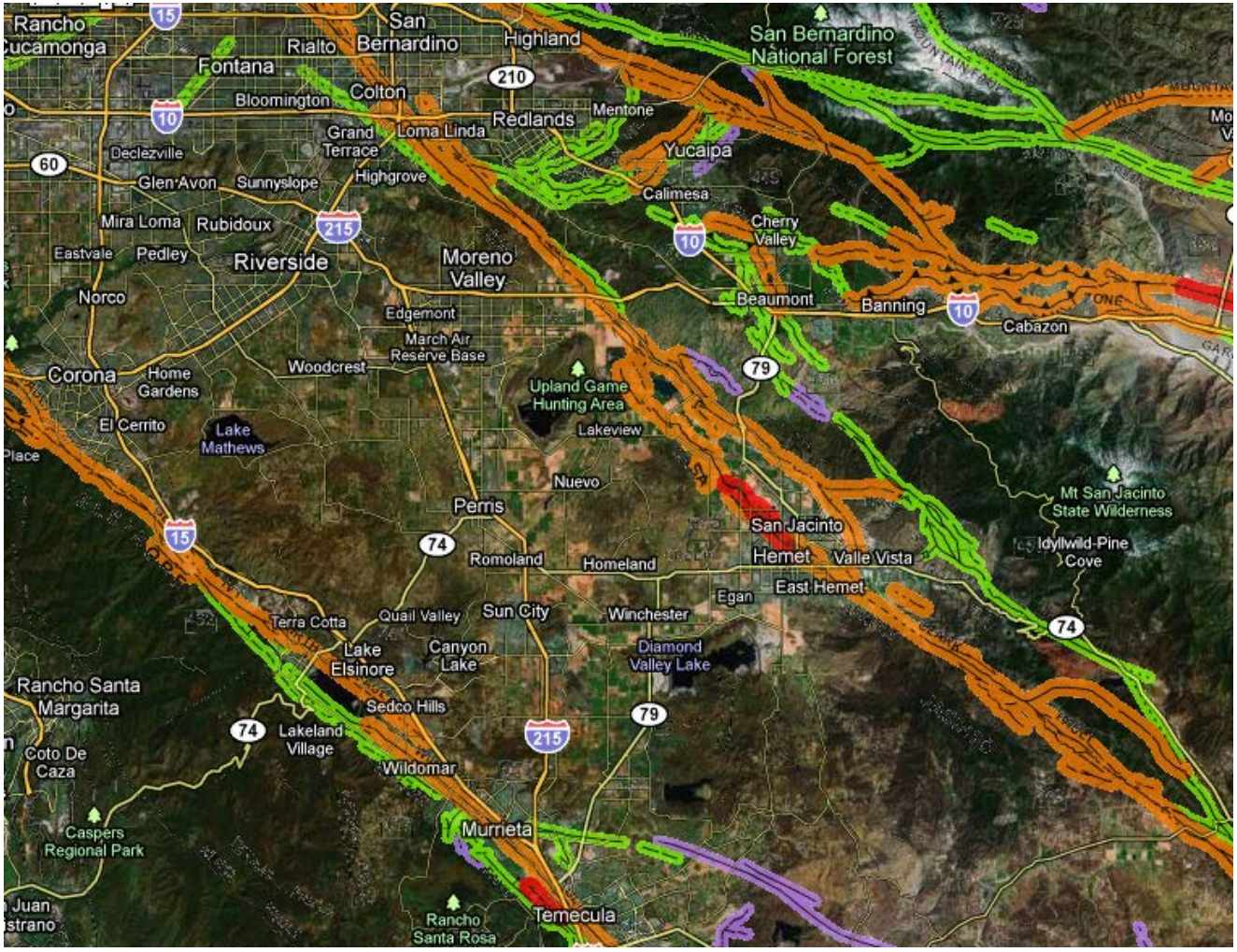
Table 18: Riverside County Essential Facility Loss Estimates – M7.8 "ShakeOut" San Andreas Fault Scenario Earthquake

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 5: Fault Activity Map of California, Western Riverside County



Explanation

Fault traces on land are indicated by solid lines where well located, by dashed lines where approximately located or inferred, and by dotted lines where concealed by younger rocks or by lakes or bays. Fault traces are queried where continuation or existence is uncertain.

FAULT CLASSIFICATION COLOR CODE
(Indicating Recency of Movement)

Fault along which historic (last 200 years) displacement has occurred.

Holocene fault displacement (during past 11,700 years) without historic record.

Late Quaternary fault displacement (during past 700,000 years).

Quaternary fault (age undifferentiated).

Pre-Quaternary fault (older that 1.6 million years) or fault without recognized Quaternary displacement.

ADDITIONAL FAULT SYMBOLS

Bar and ball on downthrown side (relative or apparent).

Arrows along fault indicate relative or apparent direction of lateral movement.

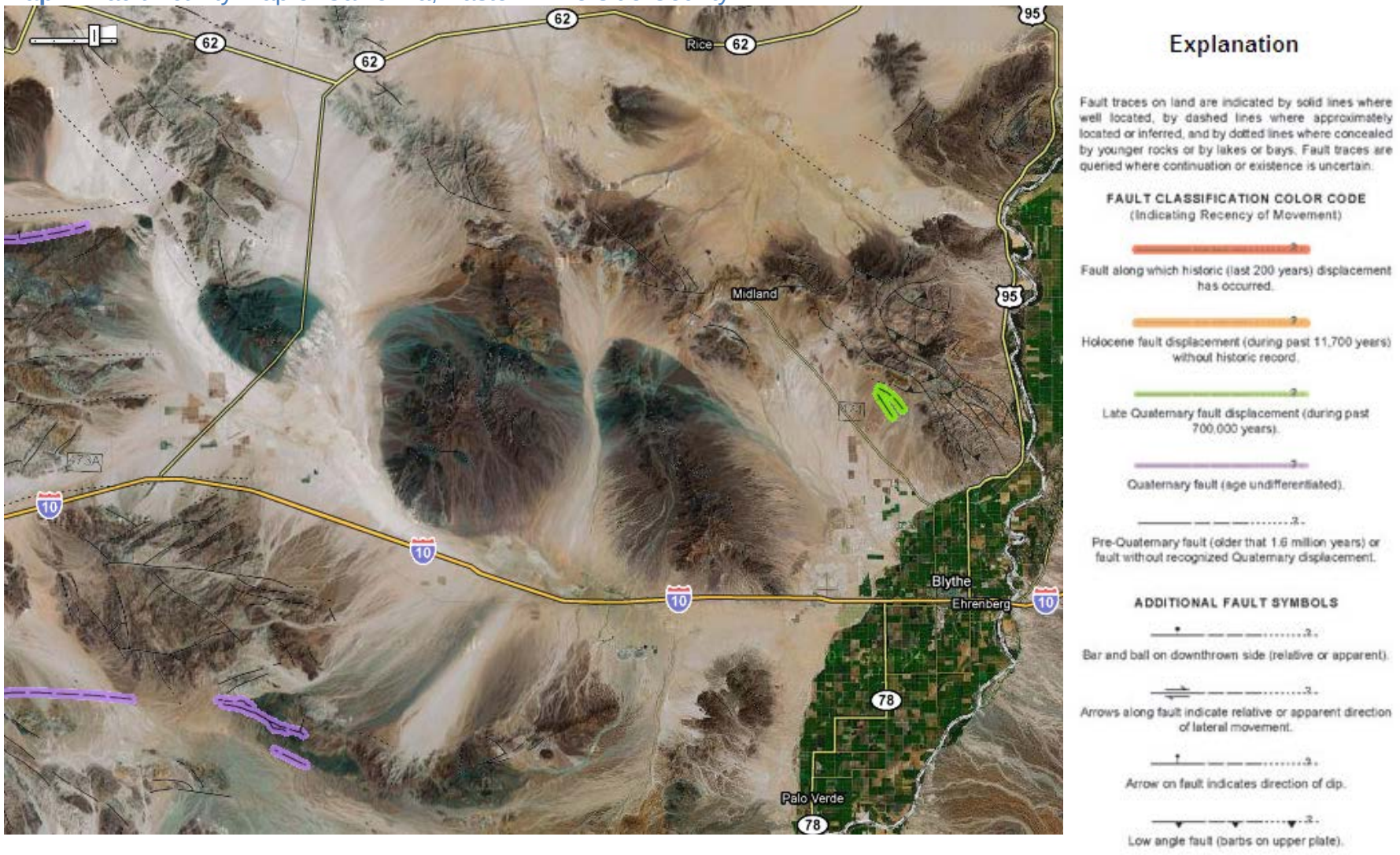
Arrow on fault indicates direction of dip.

Low angle fault (barbs on upper plate).

Map 6: Fault Activity Map of California, Central Riverside County



Map 7: Fault Activity Map of California, Eastern Riverside County



5.3.2 Pandemic Flu

Severity: 4

Probability: 2

Risk Score: 3.50

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. In 2009 the H1N1 flu was first identified in Imperial and San Diego counties, killing more than 550 Californians, sent thousands more to hospitals, caused widespread fear and anxiety and the declaration of a public health emergency. H1N1 in 2009 tested the State's medical infrastructure as never before. H1N1 quickly spread nationwide and then around the globe, taking a heavy toll on people not usually susceptible to serious influenza.

History

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

California Department of Public Health

The 2009 H1N1 influenza (flu) pandemic occurred against a backdrop of pandemic response planning at all levels of government including years of developing, refining and regularly exercising response plans at the international, federal, state, local, and community levels. At the time, experts believed that avian influenza A (H5N1) viruses posed the greatest pandemic threat. H5N1 viruses were endemic in poultry in parts of the world and were infecting people sporadically, often with deadly results. Given that reality, pandemic preparedness efforts were largely based on a scenario of severe human illness caused by an H5N1 virus. Despite differences in planning scenarios and the actual 2009 H1N1 pandemic, many of the systems established through pandemic planning were used and useful for the 2009 H1N1 pandemic response.

http://www.cdc.gov/h1n1flu/cdcresponse.htm (see attachment for complete document report)

The California Department of Public Health (CDPH) monitors flu conditions on an annual bases, 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 possibly loss of life. Damage to housing as a result of Pandemic Flu is not likely.

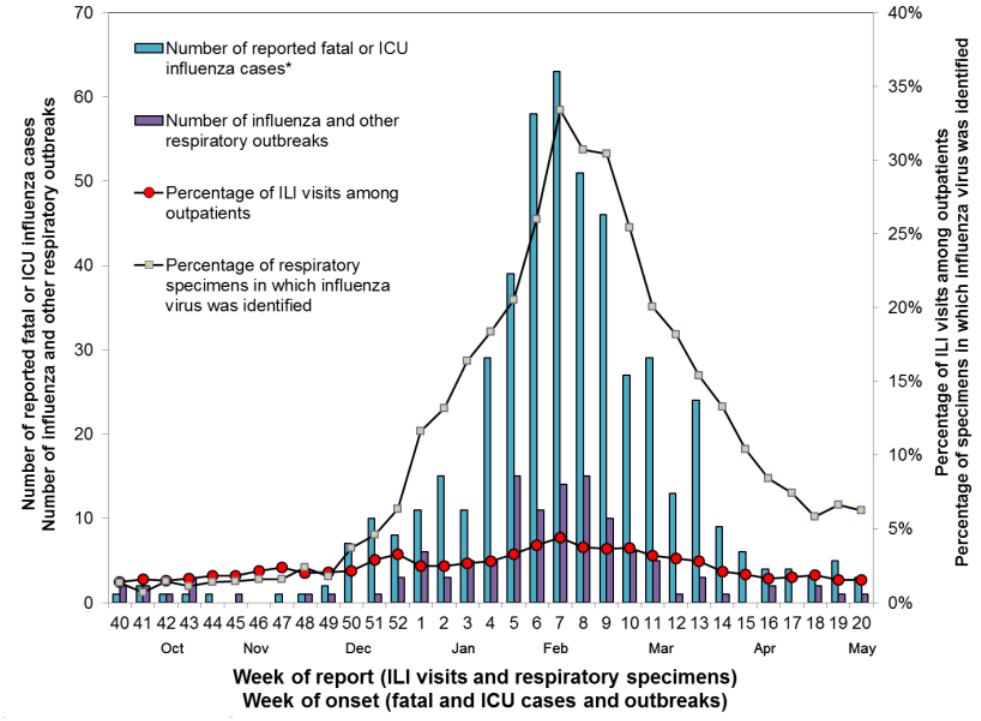
- **Effects on commercial and industrial structures**. The risks are minimal to structures.

- **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 following charts are from the CDPH Influenza and Other Respiratory Diseases

Figure 32: Surveillance Report for the 2015–2016 Flu Season.



October 4, 2015–October 1, 2016

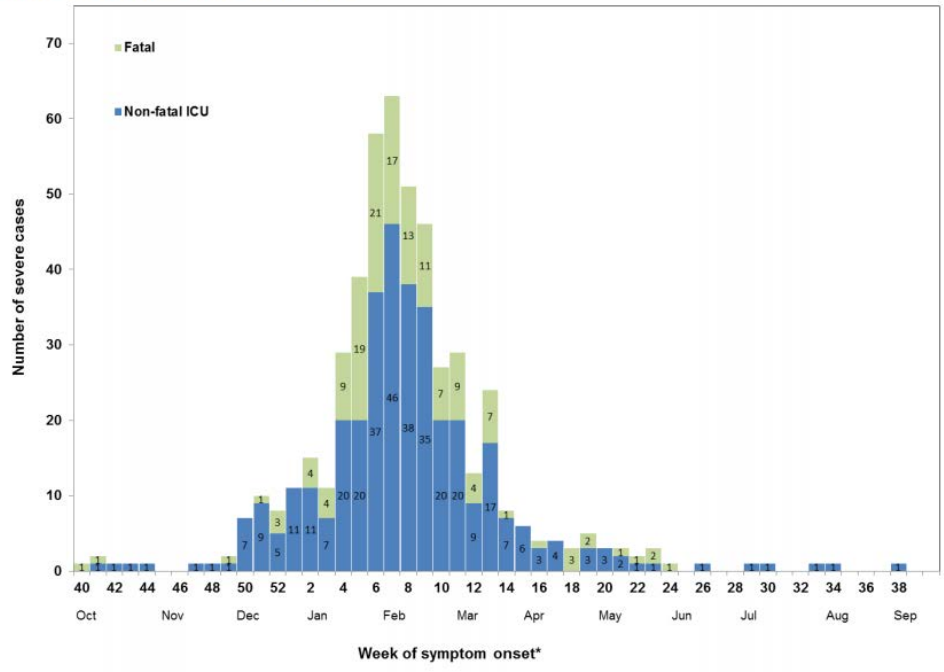


Table 19: Statewide 2011-2016 Influenza Cases0

Appendix I. Number of fatal and non-fatal ICU cases of laboratory-confirmed influenza in persons <65 years of age reported to the California Department of Public Health, by local health jurisdiction, 2011–2012 influenza season through 2015–2016 influenza season

	2011-2012*		2012-2013*		2013-2014*		2014-2015*		2015-2016*	
Jurisdiction	Fatal	Non-fatal ICU	Fatal	Non-fatal ICU	Fatal	Non-fatal ICU	Fatal	Non-fatal ICU	Fatal	Non-fatal ICU
CALIFORNIA	51	166	116	241	416	837	79	290	144	355
Alameda†	6	9	3	3	12	26	2	12	5	19
Berkeley City	0	0	0	0	0	1	0	0	0	1
Alpine	0	0	0	0	0	0	0	0	0	0
Amador	0	0	0	0	0	3	0	1	0	1
Butte	0	2	0	1	3	3	0	0	0	1
Calaveras	0	0	0	0	2	2	0	0	0	0
Colusa	0	0	0	0	0	1	0	0	0	0
Contra Costa	0	9	1	12	9	40	1	8	1	11
Del Norte	0	0	1	0	0	0	0	0	0	0
El Dorado	0	0	0	0	3	8	0	1	0	3
Fresno	3	10	7	14	22	18	4	14	5	8
Glenn	0	0	0	0	1	1	0	0	0	0
Humboldt	0	0	0	3	1	6	1	1	1	1
Imperial	0	0	0	0	2	6	0	0	0	1
Inyo	0	0	0	0	0	0	0	0	0	1
Kern	1	2	2	0	11	23	0	5	1	1
Kings	0	0	0	0	7	5	0	2	1	2
Lake	0	2	0	0	1	5	0	3	0	1
Lassen	0	0	0	0	1	1	0	0	0	0
Los Angeles†	12	0	32	0	75	22	16	7	36	0
Long Beach City	1	2	1	0	8	4	1	5	1	10
Pasadena City	0	0	0	0	0	0	0	0	0	0
Madera	0	0	2	1	3	6	1	1	1	1
Marin	0	0	0	1	2	1	0	2	0	0
Mariposa	0	0	0	0	0	0	0	1	0	0
Mendocino	0	1	0	1	4	12	0	0	0	1
Merced	0	1	0	0	5	6	0	0	0	1
Modoc	0	0	0	0	0	0	0	0	0	0
Mono	0	0	0	0	0	0	0	0	0	0
Monterey	0	1	0	4	7	12	2	6	1	2
Napa	0	0	0	0	0	7	1	1	0	3
Nevada	1	0	0	0	1	4	0	2	0	0
Orange	2	18	6	31	22	35	11	23	14	40
Placer	0	0	0	2	1	9	1	3	1	3
Plumas	0	0	0	0	0	0	0	1	0	0
Riverside	0	16	6	14	23	43	2	14	9	22
Sacramento	3	25	10	40	29	96	4	27	8	42
San Benito	0	0	0	1	0	0	0	0	0	1
San Bernardino	5	15	7	13	31	52	4	15	6	32
San Diego	5	10	17	43	44	112	8	59	28	64
San Francisco	0	1	2	1	4	28	1	0	0	0
San Joaquin	2	5	0	8	8	23	3	8	2	9
San Luis Obispo	0	0	2	2	1	7	0	3	0	3
San Mateo	2	10	1	3	6	18	5	12	2	6
Santa Barbara	0	2	1	4	3	9	2	6	4	10
Santa Clara	1	8	9	10	20	45	2	14	6	17
Santa Cruz	0	1	0	4	5	6	0	6	0	4
Shasta	0	0	0	0	3	10	0	1	0	5
Sierra	0	0	0	0	0	0	0	0	0	0
Siskiyou	0	0	0	0	2	5	0	0	0	0
Solano	0	1	0	7	3	14	2	10	2	6
Sonoma	0	0	0	1	7	19	1	2	5	4
Stanislaus	2	6	1	3	13	31	2	2	1	2
Sutter	0	0	0	1	1	3	0	0	0	0
Tehama	0	0	1	2	0	2	0	0	0	1
Trinity	0	0	0	0	0	0	1	0	0	0
Tulare	1	1	1	2	5	25	0	2	0	3
Tuolumne	0	0	0	0	1	1	0	0	0	0
Ventura	4	7	3	6	3	11	1	9	3	7
Yolo	0	1	0	3	1	10	0	1	0	4
Yuba	0	0	0	0	0	0	0	0	0	1

* 2011–2012: October 2, 2011–September 29, 2012; 2012–2013: September 30, 2012–September 28, 2013; 2013–2014: September 29, 2013–September 27, 2014; 2014-2015: September 28, 2014-October 3, 2015; 2015-2016: October 4, 2015-October 2, 2016

† Does not include city counts

Source:Https://archive.cdph.ca.gov/HealthInfo/discond/Documents/CA%20Year%20End%20Flu%20Summary_2015-2016_final.pdf

5.3.3 Wildland Fire

Severity: 3

Probability: 4

Risk Score: 2.25

OA Jurisdictions Affected by Wildfire

- Fern Valley Water District
- Idyllwild Fire Protection District
- Idyllwild Water District
- Menifee Union School District
- Temecula Valley Unified School District
- Riverside County Office of Education
- Riverside Unified School District
- San Jacinto Unified School District

Cities in which CAL FIRE has made recommendations on Very High Fire Hazard Severity Zones (VHFHSZ) in Riverside County (22 cities)

- 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 8: Riverside County Wildland Fire Threat

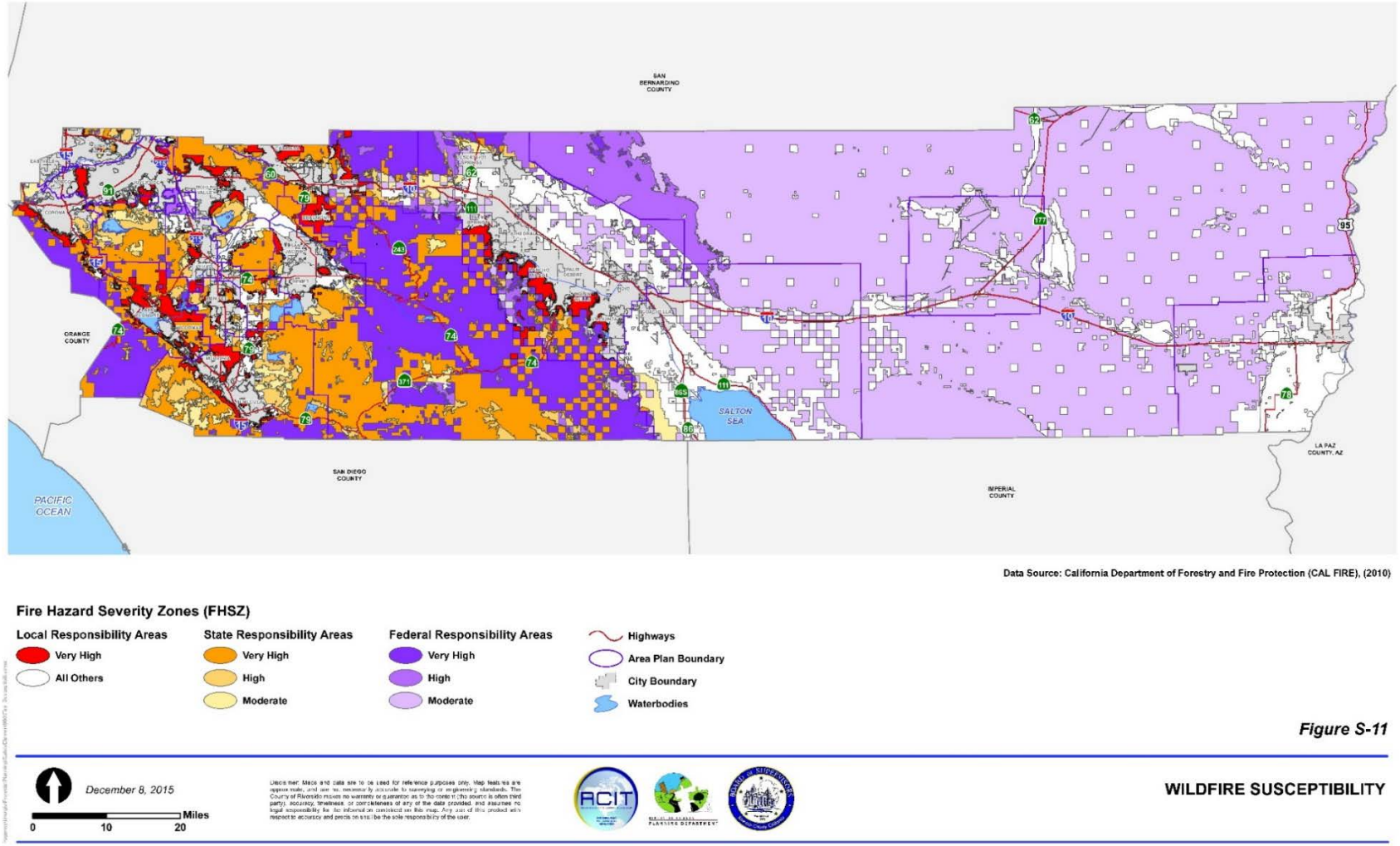


Figure S-11

WILDFIRE SUSCEPTIBILITY

Hazard Definition

A wildfire is an uncontrolled fire spreading through vegetative fuels, posing danger and destruction to property. Wildfires can occur in undeveloped areas and spread to urban areas.

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 automatic and 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. 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 timber, property, wildlife

History

There is a long history of wildfires in Riverside County. The table below represents Wildland Fires of 100 acres or greater from 2001 to 2017. The source of the information is the California Department of Forestry and Fire Protection.

Table 20: Riverside County Large Fires 300 Acres and Greater (2001-2017)

Wildland Incidents within Riverside to include Local and State Incidents.

YEAR	NUMBER OF LARGE FIRES
2017	6 (as of July 2017)
2016	3
2015	5
2014	1
2013	5
2012	7
2011	1
2010	4
2009	3
2008	3
2007	6
2006	12
2005	7
2004	6
2003	9
2002	5
2001	5

Source: http://cdfdata.fire.ca.gov/incidents/incidents_search_results?search=riverside

Interestingly, the preceding Riverside County Wildland Fire Threat map points out the distinct bi-lateral character of Riverside County. The western end of the County is more

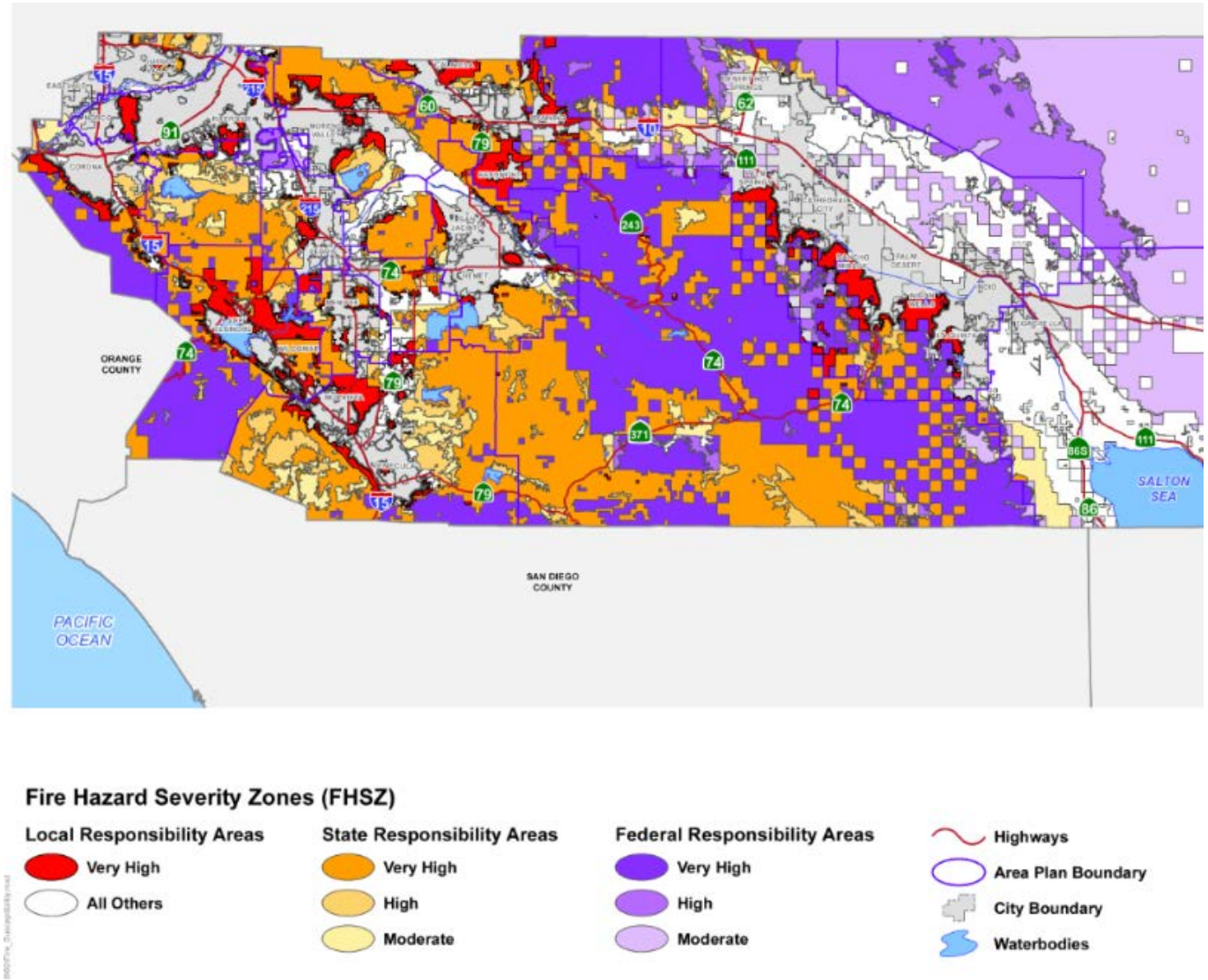
urban, densely populated, and covered with vegetation that is susceptible to wildfires. The eastern end of the County is primarily desert, with far less population and far less vegetation than the western end of the County.

The categories are:

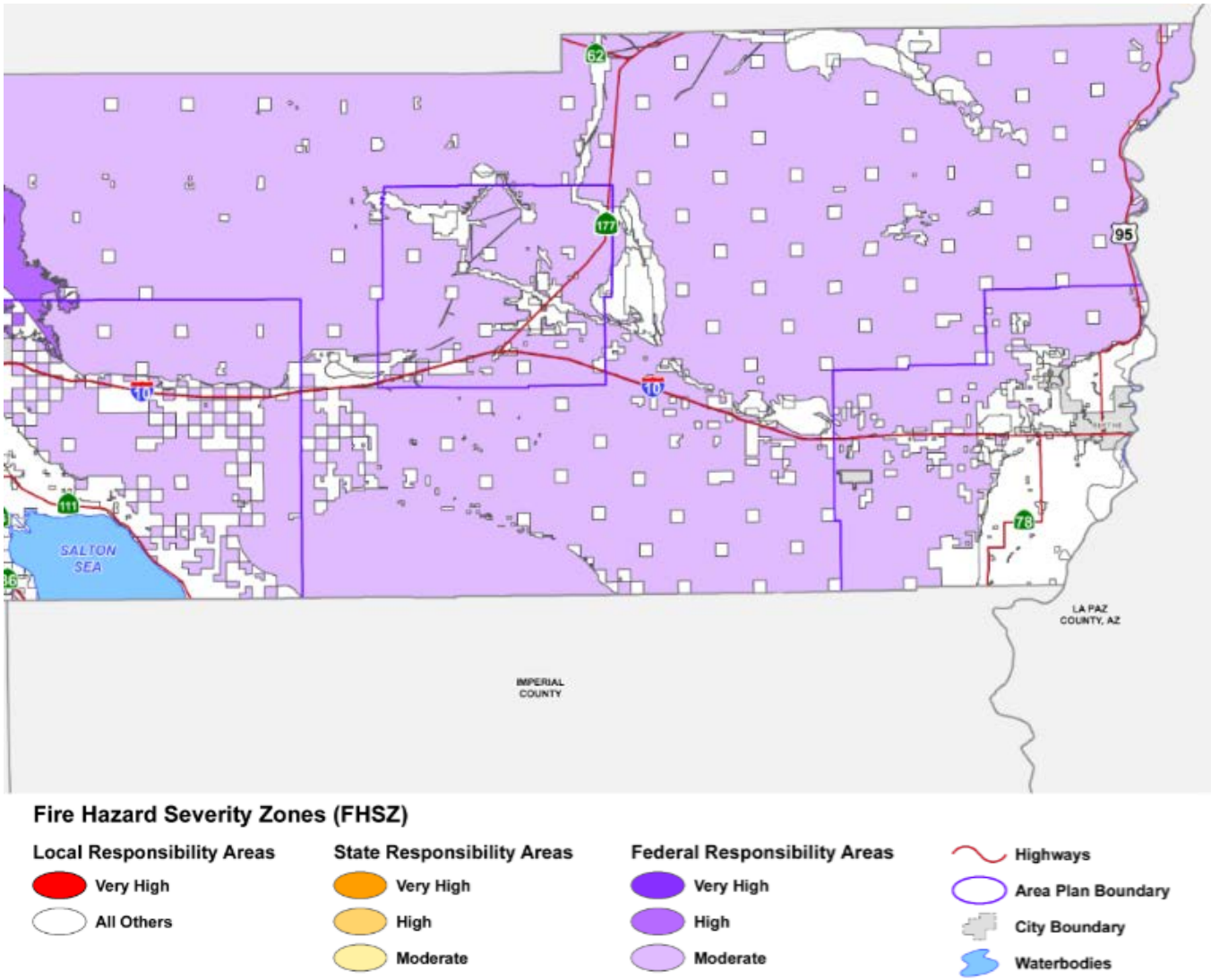
- Little or No Threat
- Moderate
- High
- Very High
- Extreme

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 9: Western Riverside County Wildfire Susceptibility Risks Map



Map 10: Eastern Riverside County Wildfire Susceptibility Risks Map



Risk Assessment

Fire is a continuous threat in Southern California, particularly in Riverside County. The major areas of concern are 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.

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.

- **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 deleterious effects on soil and water that will affect agriculture for an extended period of time.

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 ruinous impacts on people, structures, infrastructure, and agriculture.

Risk Assessment Conclusion.

The western end of Riverside County is far 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.

5.3.4 Electrical Failure – Power Outage

Severity: 4

Probability: 4

Risk Score: 2.00

OA Jurisdictions Affected by Power Outage Incidents

- Cathedral City
- City of La Quinta
- City of Palm Springs
- Desert Water Agency
- Imperial Irrigation District
- Western Municipal Water District

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. Predicted increases in heat waves, as well as increasingly severe winter storms, will put ever greater strain on California's electricity system.

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 2000 and 2001 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): 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.

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 21: Riverside County Power Outages (1993-2017)

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 for
Riverside	10/26/2017	Load shedding caused loss of power to 104,000 residents

Risk Assessment

The possibility of catastrophic damage to property or loss of life due directly to power failure is slight. 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.

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. If the persons require electric powered medical equipment, they will be at greater risk. In the areas of the county that can be impacted by high temperatures, or very cold temperatures, a power outage can have an on the heating or cooling abilities.

- **Effects on commercial and industrial structures**. Impacts due directly to power failure are slight. If the outage lasts many days, the impact would be of a 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, but there is no official list of "all" critical having and maintain working back- up generators. 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.

- **Effects on agriculture.** 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 restore power should there be a failure due to downed lines caused by another hazardous condition or any other reason.

5.3.5 Emergent Disease/Contamination

Severity: 3

Probability: 3

Risk Score: 1.69

OA Jurisdictions Affected by Emergent Disease/Contamination

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

Hazard Definition

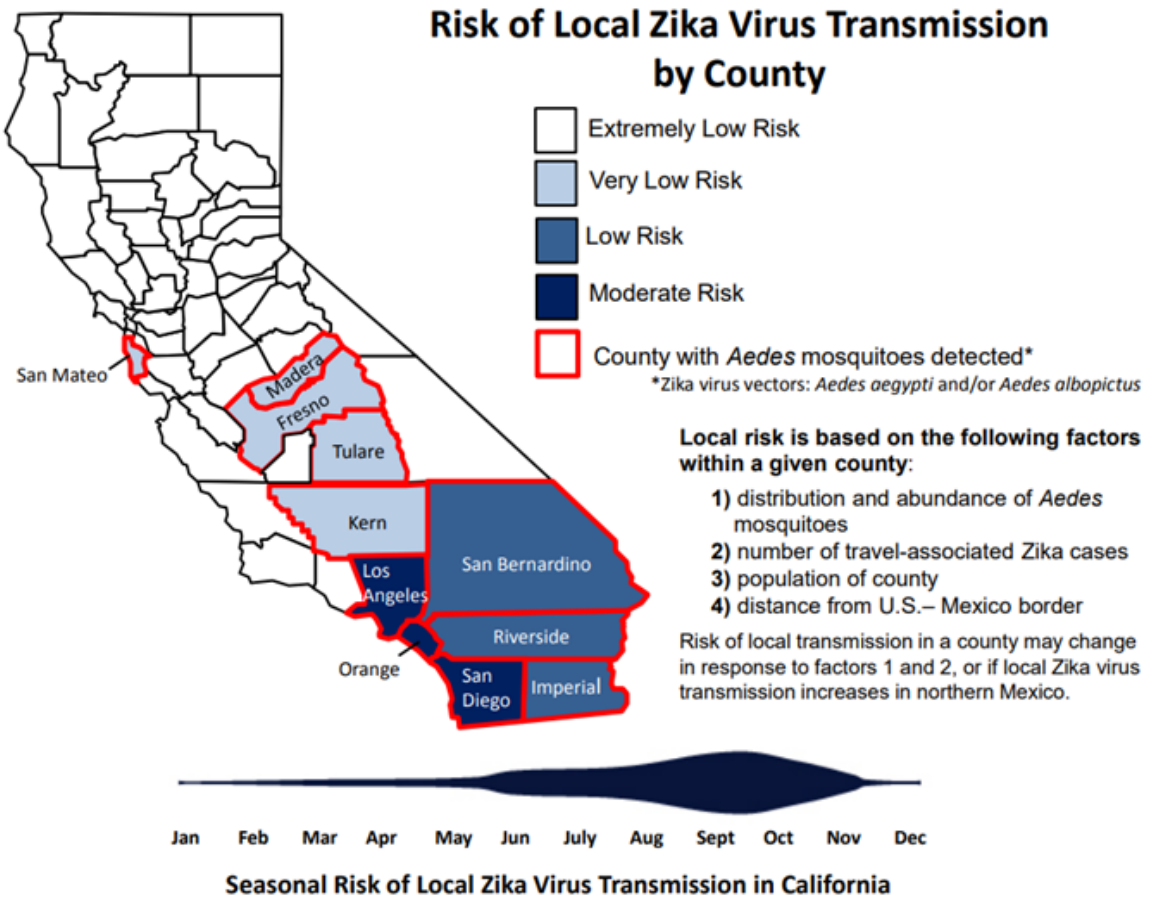
According to the Center for Disease Control, the term "emerging infectious diseases" refers to diseases of infectious origin whose incidence in humans has either increased within the past two decades or threatens to increase in the near future. Emergent diseases are new, new to the area, reappearing 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.

Figure 33: Zika Risk Map by County



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

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 Pandemic Flu are not likely.

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

- **Effects on infrastructure.** The risks are minimal, but if there is an emergent 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:** Agriculture can be devastatingly affected by emergency 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.

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 where 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 with in 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 diseases. This gives medical personnel the necessary time to prepare or mitigate possible effects of an emerging disease.

As a result of the Ebola and Zika outbreaks, Riverside County EMS Agency released Policy 3307, Emerging Viruses. 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: 2

Probability: 4

Risk Score: 1.50

OA Jurisdictions Affected by Cyber Attack

- 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. 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.

- **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.

- **Effects on agriculture.** Depending on levels of contamination and exposure, effects could range from minimal to devastating.

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 DOC shared drive, which could have hindered response to a disaster.

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.

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 real-time alerting of malicious network connections to blacklisted IP address 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 ISO to rapidly detect, respond to, contain, and prevent cyber-attacks, malware outbreaks, network reconnaissance, data exfiltration, and C2 (command & control) and botnet activities.

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 damages could be very damaging.

5.3.7 Terrorist Event

Severity: 3

Probability: 1

Risk Score: 1.13

OA Jurisdictions Affected by Terrorism

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

Hazard Definition

Terrorism is the use of force or violence against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political or social objectives. Terrorist acts or and acts of war may cause casualties, extensive property damage, fires, flooding, and other ensuing hazards.

Terrorism takes many forms, including:

- Chemical
- Biological
- Radiological
- Nuclear
- Explosive
- Cyber-terrorism
- Active shooters
- Vehicle Ramming

Chemical: Chemical weapons have been used primarily to terrorize an unprotected civilian population and not as a weapon of war. This is because of fear of retaliation and the likelihood that the agent would contaminate the battlefield for a long period of time.

Some analysts suggest that the possibility of a chemical attack would appear far more likely than either the use of nuclear or biological materials, largely due to the easy availability of many of the necessary precursor substances needed to construct chemical weapons. Additionally, the rudimentary technical knowledge needed to build a working chemical device is taught in every college level chemistry course in the world.

Some chemical agents are odorless and tasteless and are difficult to detect. They can have an immediate effect (a few seconds to a few minutes) or a delayed effect (several hours to several days).

Biological: Biological weapons are defined as any infectious agent such as a bacteria or virus used to produce illness or death in people, animals, or plants. This definition is often expanded to include biologically-derived toxins and poisons. Biological agents can be dispersed as aerosols or airborne particles. Terrorists may use biological agents to contaminate food or water because the agents are extremely difficult to detect.

Radiological: A radioactive material is a material made up of unstable atoms which give off excess energy in the form of radiation through the process of radioactive decay.

Radiation cannot be detected by human senses. Wherever radioactive materials are used, transported, or stored there is a potential for a radiological accident to occur. Some of their most common uses include:

- By doctors to detect and treat serious diseases.
- By educational institutions and companies for research.
- By the military to power large ships and submarines.
- By companies in the manufacture of products.
- As a critical base material to help produce the commercial electrical power that is generated by a nuclear power plant.
- As one of the critical components in nuclear weapons, which are relied upon to help deter the threat of war.

Nuclear: 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.

Explosive: The possibility exists that a terrorist may attack with conventional explosives, particular in a public setting. Innumerable incidents have occurred around the world involving car bombs, truck bombs, and bombs attached directly to terrorist individuals.

Cyber Terrorism: Please see Section 5.3.6

Active shooters: Active shooter events in the nation have increased dramatically over the last 17 years. According to the report "a Study of Active Shooter Incidents in the United States Between 2000 and 2013" produced by the Department of Justice, it states that there have been 160 Active Shooter incidents from 2000-2013. Furthermore, in the updated version of that report for 2014-2015, it states that there has been an additional 40 Active Shooter incidents spanning 26 states. These attacks have led to 92 casualties and 139 wounded.

Vehicle Ramming: The use of vehicle ramming has steadily increased and it is likely that this tactic will continue to rise. This attack style required little specialized training or skill and poses little risk to the assailant. It is seen as an effective style due to its minimal detection when acquiring the weapon and overall flexibility when planning target location and targets. Known terrorist organizations encourage ramming and have even released tips on maximizing casualties.

History

Fortunately, Riverside County has little history of incidents of terrorism. However, threats and incidents have been on the rise over the last 17 years.

Riverside County has also been impacted by terrorist acts in surrounding counties. On December 2nd, 2015 a disgruntled employee shot and killed many former coworkers in San Bernardino County. The "Waterman Incident" affected Riverside County in the following ways:

- Activation of the Riverside County Medical Health Operational Area Coordinator (MHOAC) for outreach to Riverside Environmental Health and Riverside Behavioral Health representatives.
- The MHOAC completed a comprehensive list of available Riverside resources (to include name, contact info, and wrap around service requirements).
- The MHOAC provided the resource list to the Regional Disaster Medical Health Specialist (RDMHS).
- Riverside Environmental Health sent 63 employees and Behavioral Health sent 89 employees to San Bernardino County to support the initial response and re-establishment of the San Bernardino County Environmental Health Division from December 2015 through June 2016.

Risk Assessment

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 has the potential to cause a cascading event. After a terrorist incident people may display signs of civil disorder driven by fear.

Risk Assessment Conclusion.

The western end of Riverside County is far more susceptible to terrorism than the eastern end of the County. 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

Risk Score: 1.13

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.

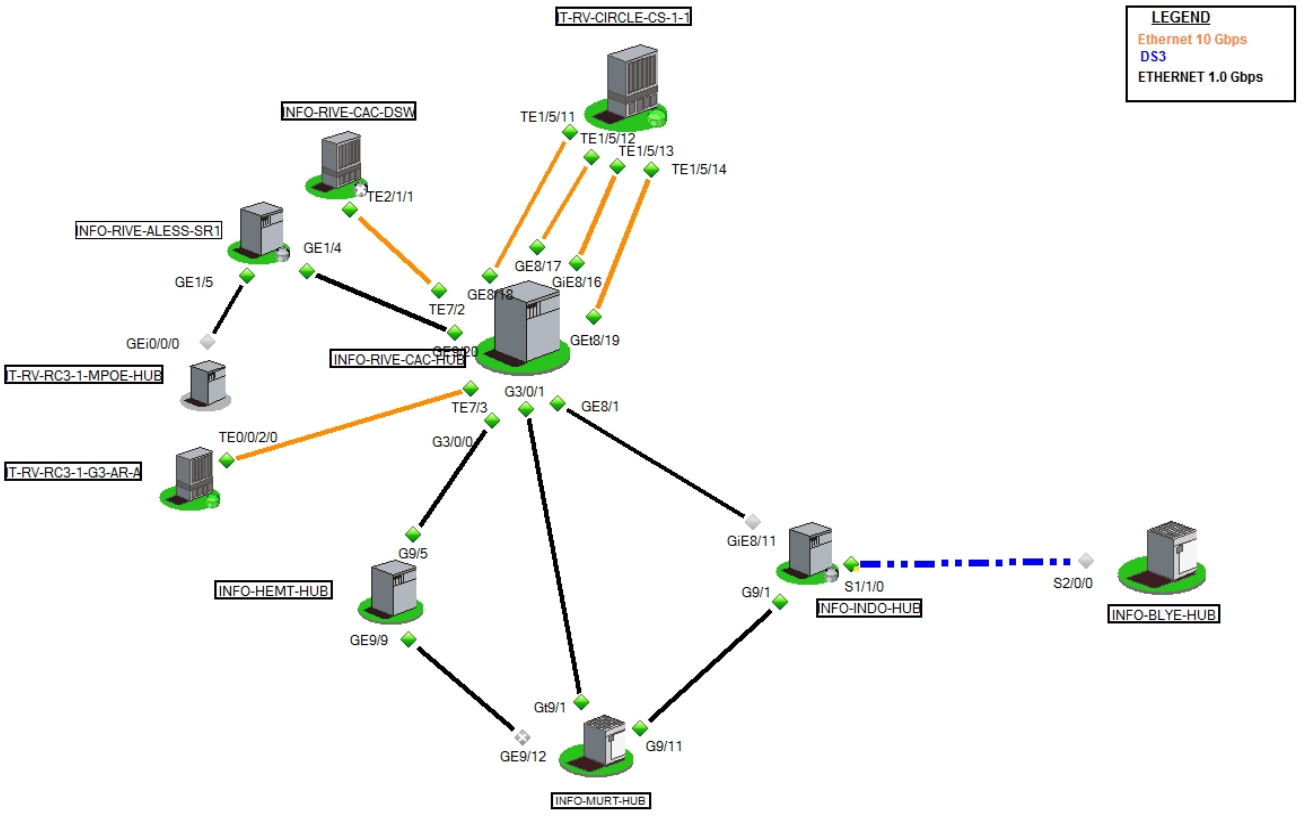
Voice Services are controlled from the County Administration Center Hub with redundancy provided by the Indio Hub location. Application Services and Internet Services for the County are delivered via the County Administration Center Hub location and soon from the RC3 Data Center.

With the completion of the Converged Network Project in 2016, CoRNet now provides both Voice and Data over the same network infrastructure. The same network connection that provided a data connection for the customers hardwired PC's now provides the connectivity for all phone communications and wireless devices.

A loss of Network connectivity now impacts both Voice and Data and wireless (Wi-Fi) communications. In the event of a Communication Failure, the entire County would be affected.

There are multiple hazards that could result in a "Network" failure such as Earthquake, Power Outage and other Natural Disasters.

Network Map



Indio Hub Failure

- Sites impacted
  - All CoRNet connected Desert locations
- Services impacted
  - All Voice, Data and Wifi services for this region.

Murrieta (SWJC) Hub Failure

- Sites impacted
  - All CoRNet connected South County locations
- Services impacted
  - All Voice, Data and Wifi services for this region.

Hemet Hub Failure

- Sites impacted
  - All CoRNet connected Hemet area County locations
- Services impacted

- All Voice, Data and Wifi services for this region.

Riverside Hub Failure

- Sites impacted
  - All Central Riverside locations (Voice, Data and Wifi)
  - All County Hubs will lose all application and Internet based services
  - All State and Vendor provided application services.
- Services impacted
  - All Voice communications for Central Riverside locations.
  - All other Hubs would fail over to the Indio Hub for Voice.
  - All County Hubs will lose all application, Internet and Wifi based services.

PSEC

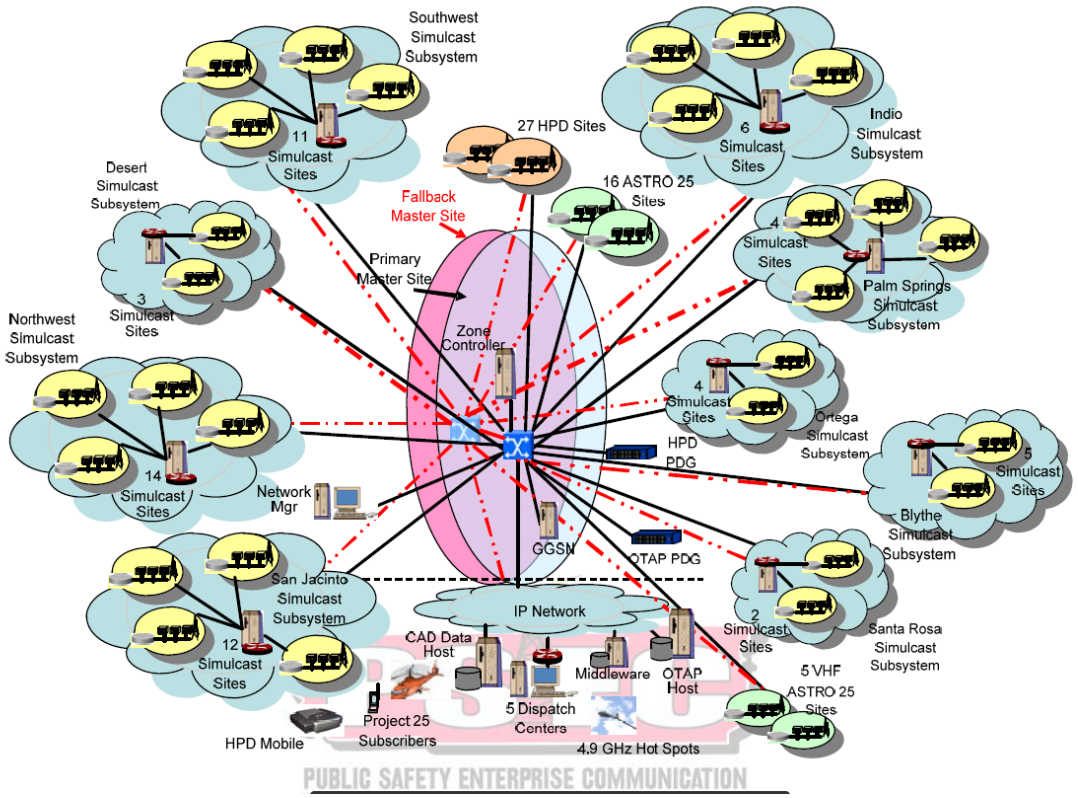
The Riverside County Information Technology/Public Safety Enterprise Communications (RCIT/PSEC) Division provides public safety communications for all participating City and County law enforcement, fire service, public works, and allied agencies in Riverside County. In January of 2014, RCIT/PSEC replaced 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 and a High-Performance Data system with a mobile VPN client for multiple network access. PSEC provides and manages all aspects of Public Safety Radio Services and mobile data for participating agencies which include almost all County agencies and the city police departments of Banning, Murrieta, Riverside, and Corona.

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:

- 76 radio and microwave remote sites
- 75 PSEC radio Voice and Data transmitter Sites
- 1 – Primary Motorola (M)- Core Site
- 1 Motorola (M) Core Dynamic System Resilience (DSR) Site
- 86 licensed Microwave Hops
- Approximately 5500 Voice Users
- Approximately 1300 Mobile and Tablet Data Users
- 8 Dispatch Centers

The PSEC Division of RCIT processed 24,421,574.0 Public Safety Transmissions for FY16/17

Figure 34: PSEC System Architecture



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. In the event of a catastrophic failure of the one Master site, the second 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, one Master site can take over system operations in the east county, while the second will continue to control the west county. In this scenario, dispatchers at either location of the Master sites would not be able to reach units operating on the east side of the county, nor 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.

While a single Hub failure would only impact the locations serviced through that Hub. Other hub locations would not be affected. A failure of the Riverside Hub would have a widespread impact. A failure at the Riverside Hub would result in the loss of all Application, Internet and Wi-Fi services for the entire county.

PSEC

The RCIT/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 RCIT/PSEC Public Safety Voice and Data 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

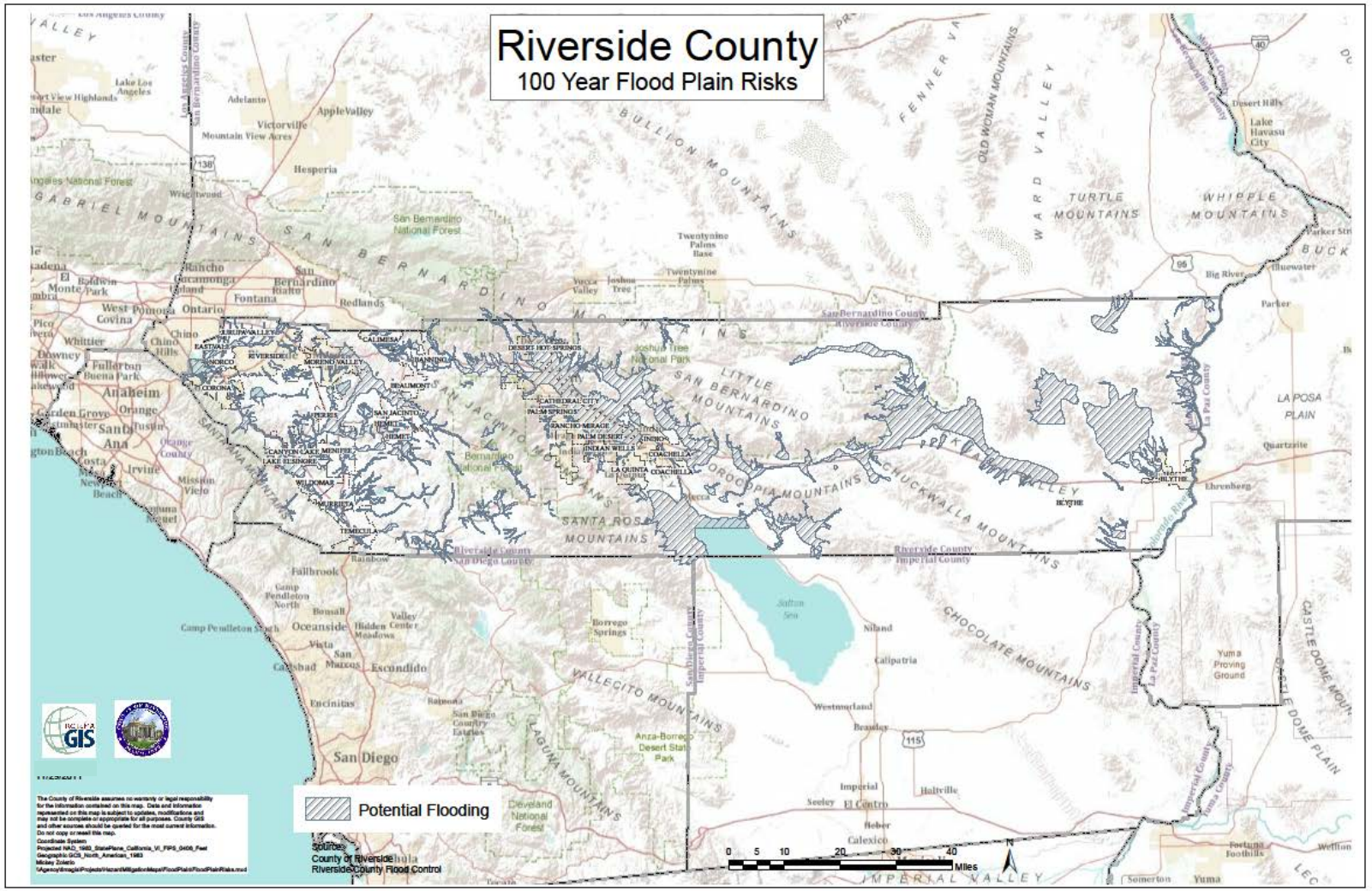
Probability: 3

Risk Score: 1.13

OA Jurisdictions Affected by Flooding

- City of Blythe
- City of Calimesa
- City of Canyon Lake
- City of Cathedral City
- City of Desert Hot Springs
- City of Eastvale
- City of Indian Wells
- City of Jurupa Valley
- City of La Quinta
- City of Lake Elsinore
- City of Norco
- City of Palm Desert
- City of Perris
- City of San Jacinto
- City of Temecula
- City of Wildomar
- Rancho California Water District
- Riverside County Office of Education
- Riverside Unified School District

Map 11: Riverside County 100 Year Flood Plain Risks



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 actually 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 up 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 snow pack.
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, dams, 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

Table 22: 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	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.

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 1 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.

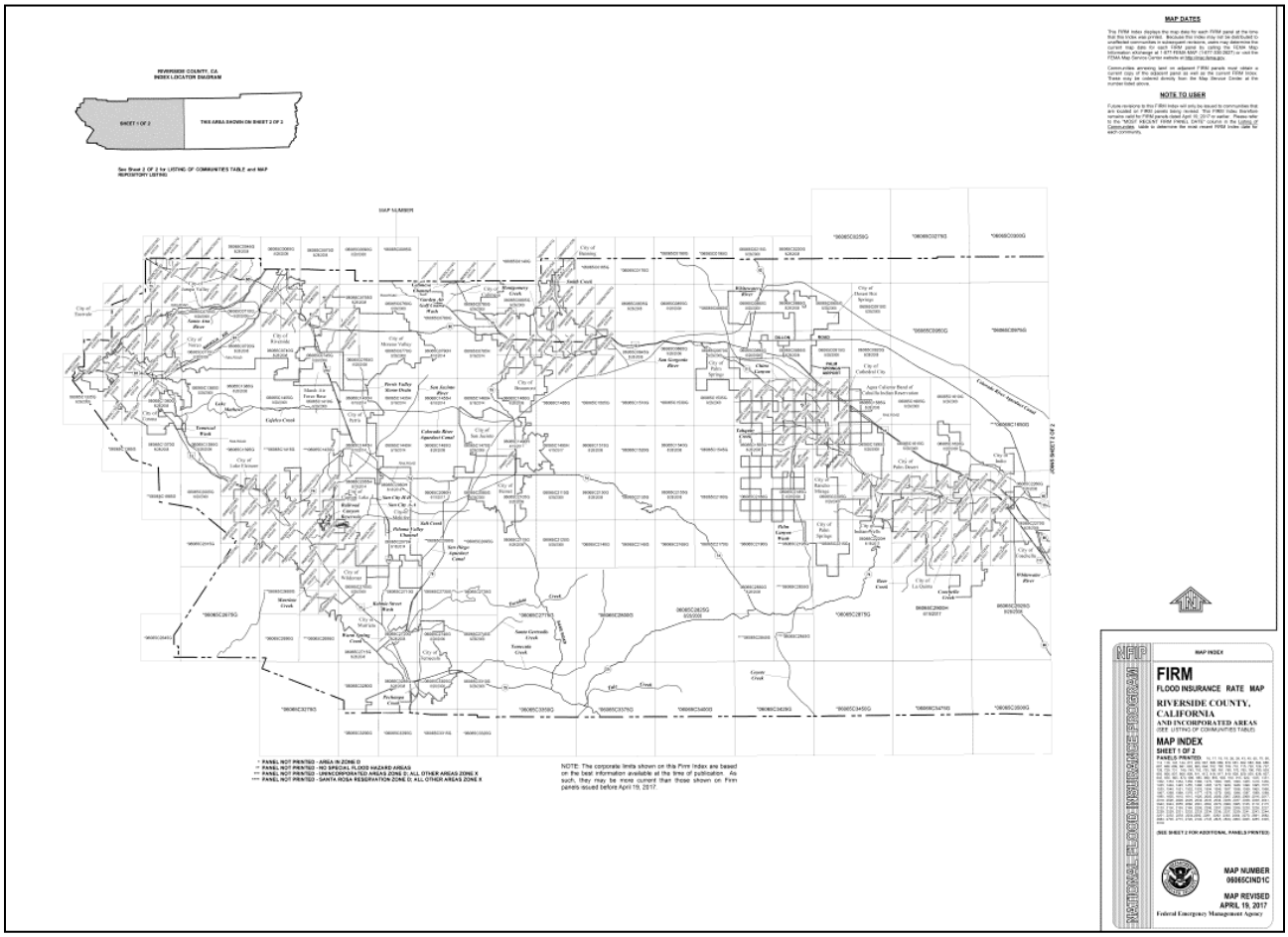
Riverside County utilizes several sources to determine local flood hazards: FEMA Flood Insurance Rate Maps, DWR Awareness Maps, and local flood zone delineation maps as identified in Riverside County Ordinance 458 (updated 6/9/2017). For floodplain management purposes, the County regulates unincorporated development within each of the above 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.

FEMA Flood Insurance Rate Mapping

FEMA updated the Digital Flood Insurance Rate Maps (DFIRMS) effective range from August 28, 2008, to April 19, 2017, depending on when jurisdictions requested maps to be updated. The DFIRMS are available for public viewing from FEMA's website:

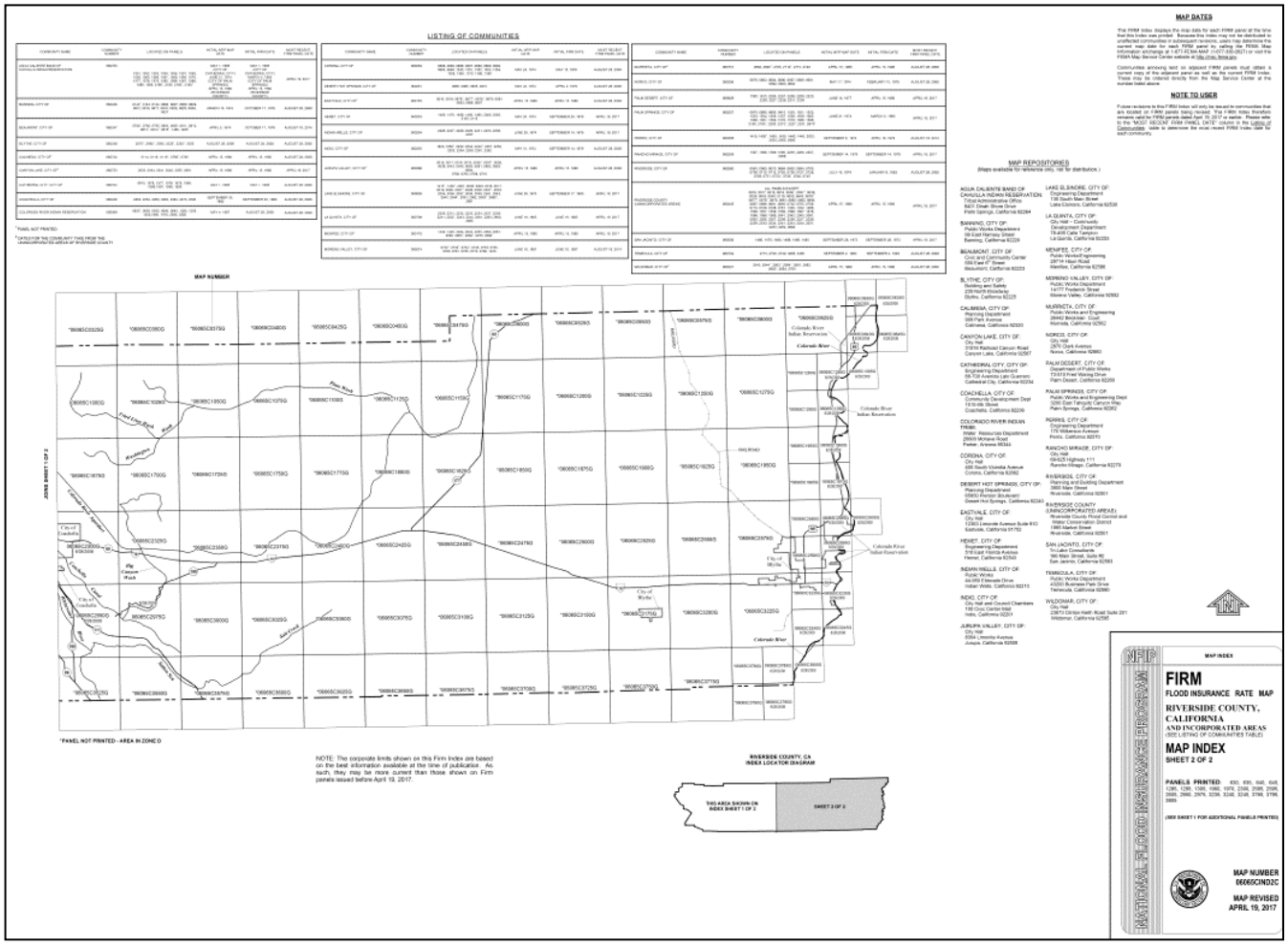
Source: http://msc.fema.gov/portal/advanceSearch#searchresultsanchor

Map 12: FEMA FIRM Map 2017 – West County



Source: http://msc.fema.gov/portal/advanceSearch#searchresultsanchor

Map 13: FEMA FIRM Map 2017 – East County



Source: http://msc.fema.gov/portal/advanceSearch#searchresultsanchor

Table 23: FIRM Flood Zones

Zone	Description
A	Area with a 1% 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% 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% 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% 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% 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% 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.

Figure 24: Flood Insurance Study Areas

Water Source Studied	Water Source Studied	Water Source Studied
Acacia Creek Drain	Lincoln Avenue Drain	San Sevaine Channel
Alessandro Wash	Little Morongo Wash	Santa Ana River
All American Canal	Long Canyon Wash	Sheet Flow along Ocotillo Road
Arlington Canal	Macomber Palms Channel	Smith Creek
Arroyo Del Toro	Magnesia Falls Road	Smith Creek West Tributary
Bear Creek	Magnesia Springs Channel	South Norco Channel and Trib.s A and B
Beaumont Chanel	Main Street Drain	Spring Brook
Bedford Canyon Wash	Mangular Channel	Spring Brook Wash
Big Morongo Wash	Marshall Creek	Stetson Avenue Channel
Biskra Palms Channel	McVicker Canyon Wash	Stovepipe Canyon Creek
Blind Canyon Channel	Metz Road Basin	Stream A (Vicinity of Des. Hot Springs)
Bly Channel	Mirage Indian Trail Wash	Sun City Channels A-A, C-C, H-H and X-X
Box Springs Wash	Mission Creek	Sun City Southeast Tributary
Calimesa Channel	Mockingbird Canyon Wash	Sunny Slope Channel
Carrizo Alluvial Fan	Montgomery Creek	Sunnymead Storm Channel
Channel H	Mountain Avenue Wash	Taylor Avenue Drain
Cherry Avenue Channel	Murrieta Creek	Temecula Creek
Coachella Valley Stormwater Channel	North Cathedral Channel	Temescal Wash
Country Club Creek and North Tributary	North Norco Channel and Trib.s A, B and C	Tequesquite Arroyo
Day Creek Santa Ana River	North Palm Springs Wash	The Veldt
Dead Indian Alluvial Fan	North Side Wolf Valley Creek	Third Street Basin
Deep Canyon Alluvial Fan	Oak Street Channel	Thousand Palms Canyon Wash
Deep Canyon Storm Water Channel	Ocotillo Drive Wash	Thousand Palms Main Channel
Desert Hot Springs Channel	Orange Lateral	Thousand Palms Tributaries A, B and C
Dunes View Road Channel	Ortega Wash	Thunderbird Wash
Dry Morongo Wash	Ortega Channel	Tramview Wash
East Cathedral Channel	Palm Canyon Wash	Tramview Wash Tributary
East Gilman Home Channel	Palm Valley Drain	University Wash
East Rancho Mirage Storm Channel	Park Hill Drain	Wash G
El Cerrito Channel	Pechanga Creek	Wash I
Elsinore Spillway Channel	Perris Valley Storm Drain	Wasson Canyon Creek
Garden Air Gold Course Wash	Pigeon Pass Channel	West Cathedral Channel
Gilman Home Channel	Prenda Wash	West Norco Channel
Harrison Wash	Pushawalla Canyon Wash	West Pershing Channel
Hemet Storm Channel	Pyrite Channel	Whitewater River
Highland Springs Channel	Rache Channel	Whitewater River (C.V.S.C.)
Interstate-10 Wash	Ramsey Street Drain	Whittier Avenue Channel
Kalmia Street Wash	Rice Canyon Wash	Woodcrest Wash
Lake Elsinore	Salt Creek and Tributary	Unnamed Stream A
Lakeland Village Channel	Salt Creek Overflow	Unnamed Stream B
Lakeview Wash	San Gorgonio River	Unnamed Stream C
Leach Canyon Channel	San Jacinto River	1001 Ranch Drain
Lime Street Channel	San Jacinto Lateral	1001 Ranch Drain West Tributary

DWR Awareness Floodplain Mapping

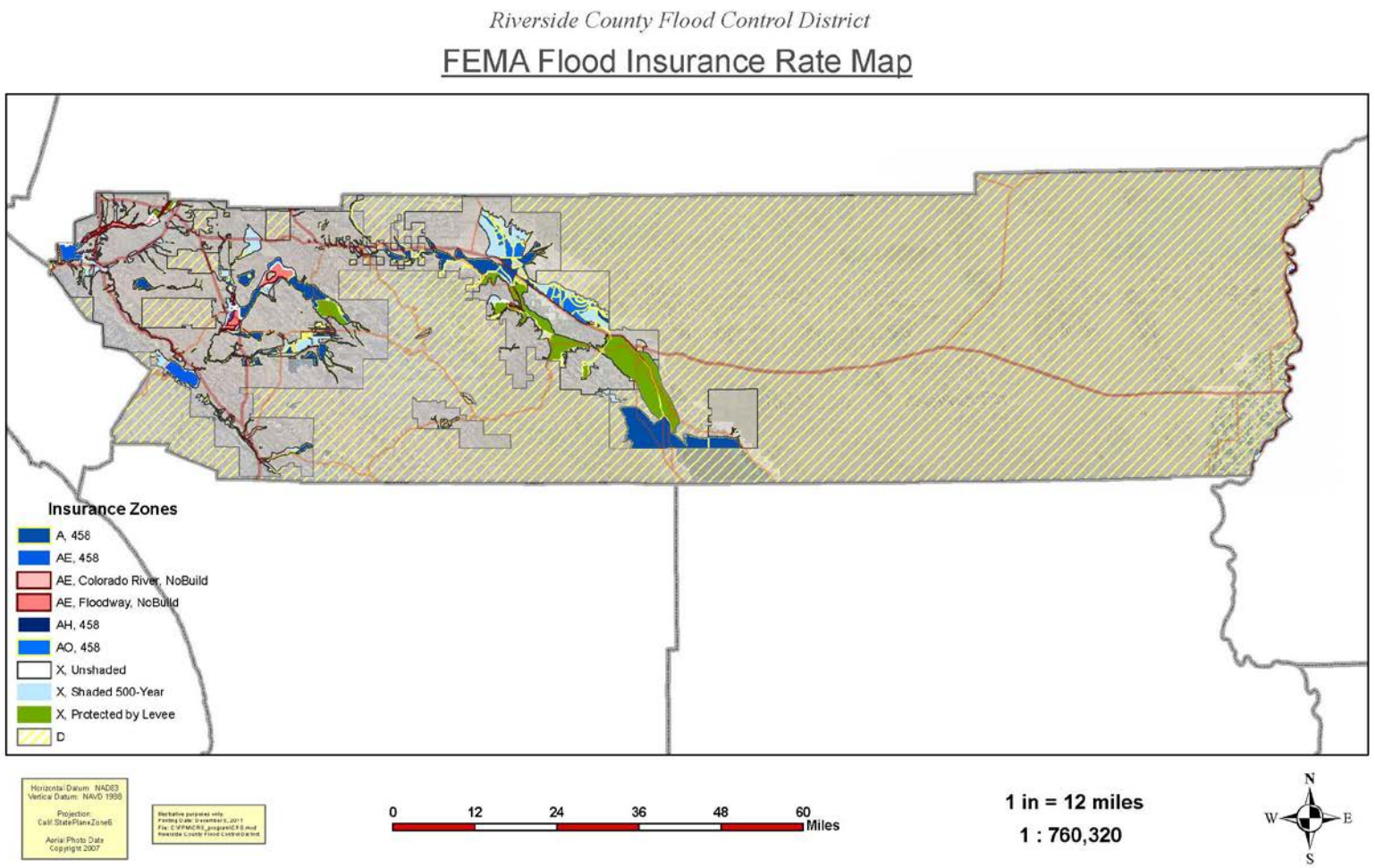
The intent of the California Department of Water Resources (DWR) Awareness Floodplain Mapping project was to identify all pertinent flood hazard areas by 2015 for areas that are not mapped under the FEMA National Flood Insurance Program (NFIP) and to provide the community and residents an additional 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.

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:

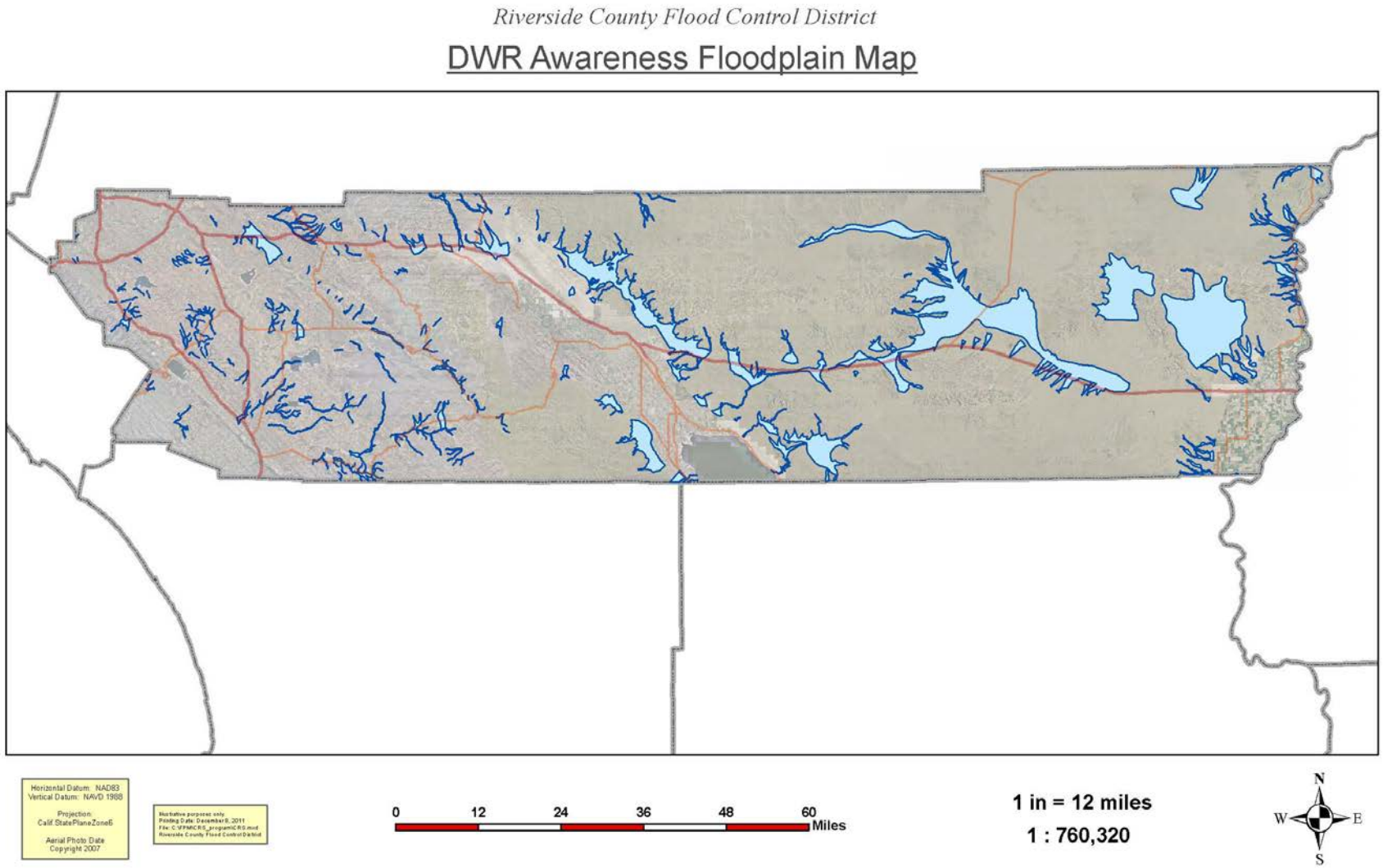
http://rcflood.org/FloodDetermination/FloodDetermination_V09.aspx

California Department of Water Resources Awareness Floodplain Maps can be found at http://www.water.ca.gov/floodmgmt/lrafmo/fmb/fes/awareness_floodplain_maps/

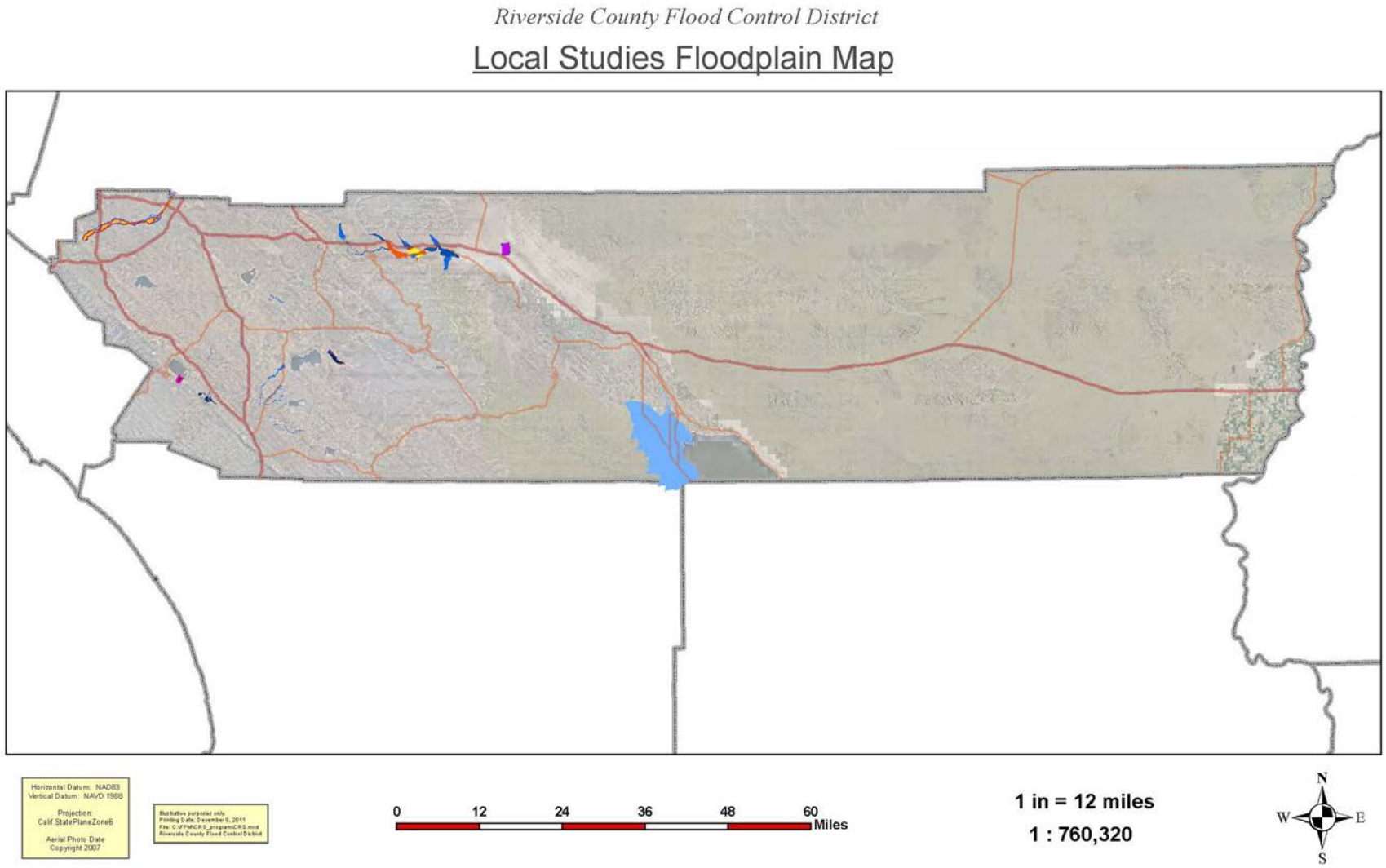
Map 14: FEMA Flood Insurance Rate Map



Map 15: DWR Awareness Floodplain Map



Map 16: Local Studies Floodplain Map



Risk Assessment

As stated in the State of California Multi-Hazard Mitigation Plan, Riverside County has 27 declared flood disasters from the period of 1950 – December 2012. The total can be updated to 29 when adding the two flood disaster declarations in 2015 and 2017. 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 2017 Southern California Association of Governments (SCAG) Unincorporated Area of Riverside County Report, the number of residents living in the unincorporated area has increased to 364,413.

HAZUS was used to generate general building stock and essential facility loss estimates for three different floods in the County – a 1% annual chance flood event (100-year flood) with the existing certified levee system in the County intact, a 1% 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.

Table 24: 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 w/ at least Moderate Damage (potentially closed)	0 (of 4 damaged)	0 (of 4 damaged)	0 (of 4 damaged)

Table 25: 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)

- **Effects on People and Housing:** Of the approximately 647,000 buildings modeled within the general building stock for Riverside County, about 1% (6,262) are expected to suffer “complete” damage in the 0.2% annual chance flood event (500-year flood) scenario. These building would be considered “red-tagged” or unsafe for continued occupancy. About 94% 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% damage or more while about 18,000 buildings are estimated to suffer flood damage of less than 20%. As much as 0.78 million tons of debris may result from these damaged buildings – 21% is expected to be heavy debris (concrete and steel), requiring heavy equipment to break down and remove, while 79% 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.

- **Essential Facility Impacts:** Table 29 provides an overview of essential facility performance in the 0.2% 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% damage for numerous essential facility types with some, but minimal, flooding, to as much as 7.1% mean damage for one school district. The total economic loss for essential facilities has been estimated to reach about $83 million, almost 91% of which ($75 million) will occur in schools and about 6% 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 26: Riverside County Essential Facility Loss Estimates – 0.2% 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 27: Estimated Impacts on Riverside County Fire Stations in a 1% 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 28: Estimated Impacts on Riverside County EOCs in a 0.2% 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 29: Estimated Impacts on Riverside County Police Facilities in a 0.2% 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 30: Estimated Impacts on Riverside School Districts in a 0.2% 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 31: Estimated Impacts on Riverside County Hospitals in a 0.2% 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:** 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.

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

Risk Score: 1.13

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.

May 1, 2017 – "May Day" protest in Riverside to oppose President Trump's actions against undocumented workers, LGBT rights, fair wages, Black Lives Matter, refugees and immigrants.

January 31, 2017 – Protests held in Riverside to protest President Trumps Travel restrictions from seven primarily Muslim countries.

January 21, 2017 – Thousands marched in Downtown Riverside for Woman's rights.

November 10, 2016 – UC Riverside students marched in an anti-Trump rally.

May 7, 2016 – Trump supporters rally in Temecula approximately 350 people attended.

July 13, 2012 – Rally against violent crimes at the Riverside Public Library.

January 31, 2012 – Union Strike at various locations in Riverside County.

December 2, 2011 - Protests at all of the main entrances to the Mission Inn where Buster was holding a re-election fundraiser.

November 6, 2011 - There was an "Occupy" protest near City Hall, and 8 protesters were arrested.

November 22, 2011 - 200 to 300 students gathered at UCR's bell tower at the center of campus to protest. (Occupy UC Riverside).

April 15, 2010 - Riverside County Tax Day Tea Parties' Protest Rally (Tea Party).

January 13, 2009 - The Riverside County Board of Supervisors today temporarily suspended an ordinance it passed last week to limit protests outside a large Church of Scientology compound near Hemet. Protesters show up about once a month outside Golden Era Productions, home to 500 Scientologists, on Gilman Springs Road.

December 2004 - A demonstration at county administrative buildings that was 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.

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. It also has the potential to affect first responder response times by traffic blocking protesting techniques.

5.3.11 Drought

Severity: 3

Probability: 3

Risk Score: 1.13

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.

California's last major statewide drought was 2014-2017. On April 17, 2017, Governor Jerry Brown issues EO B-40, officially ending the drought state of emergency.

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 Progress as of 2017:

In January 2014, with California facing one of the most severe droughts on record, Governor Brown proclaimed a State of Emergency due to drought conditions beginning in 2012 through 2016. An interagency Drought Task Force was convened to monitor drought impacts and advise on actions to be taken if drought conditions worsened. The Drought Task Force also developed a plan for the provision of emergency food supplies, financial assistance and unemployment services in communities that suffer high levels of unemployment due to drought conditions.

In September 2014, Governor Brown issued an Executive Order authorizing Cal OES to provide California Disaster Assistance Act (CDAA) funding for local government assistance to provide emergency water supplies to households without water for drinking and/or sanitation purposes.

In April 2017, Governor Brown lifted the Executive Order Proclaiming a drought, however, he retained prohibition on wasteful practices.

The Drought Contingency Plan (DCP) contains strategies and actions that state agencies have taken or may take to prepare for, respond to, and recover from droughts. Its purpose is to minimize drought impacts by improving agency coordination and enhancing monitoring and early warning capabilities, water shortage impact assessments, and preparedness, response, and recovery programs. The DCP identifies an integrated, regional approach to addressing drought, drought action levels, and appropriate agency responses as drought conditions change. It calls for coordination and clearly defined roles and responsibilities of federal, state, and local agencies, and timely dissemination of information to decision-makers.

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 35: California's drought level first week of March 2011-2015

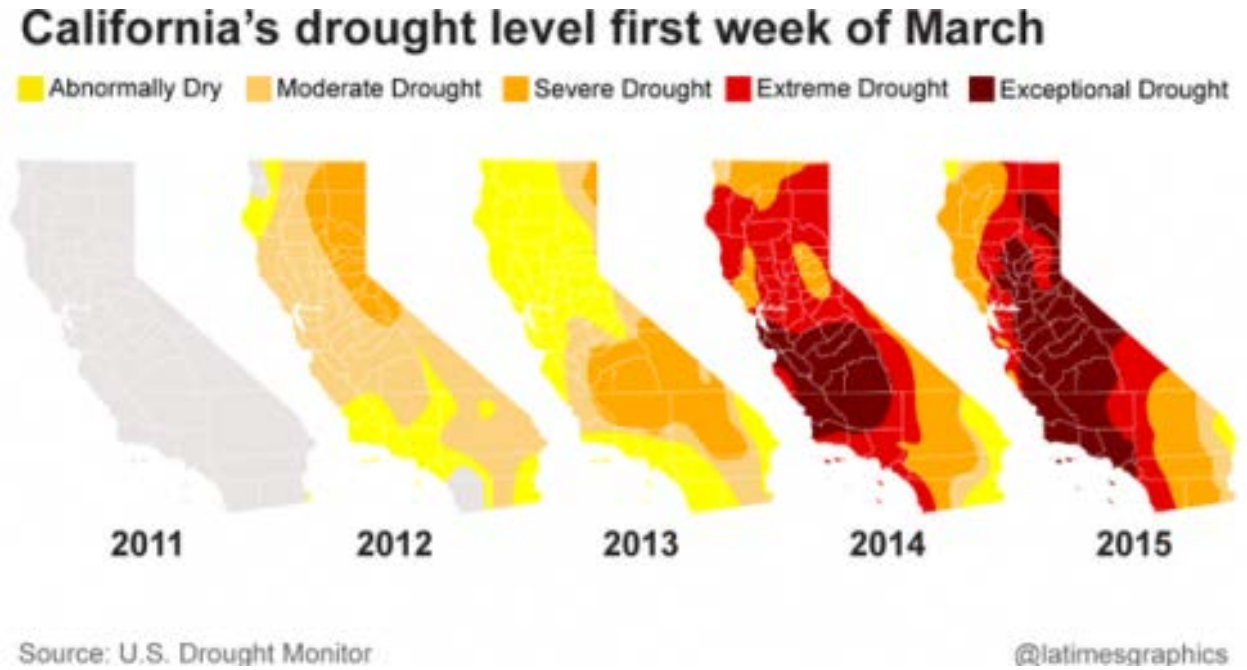
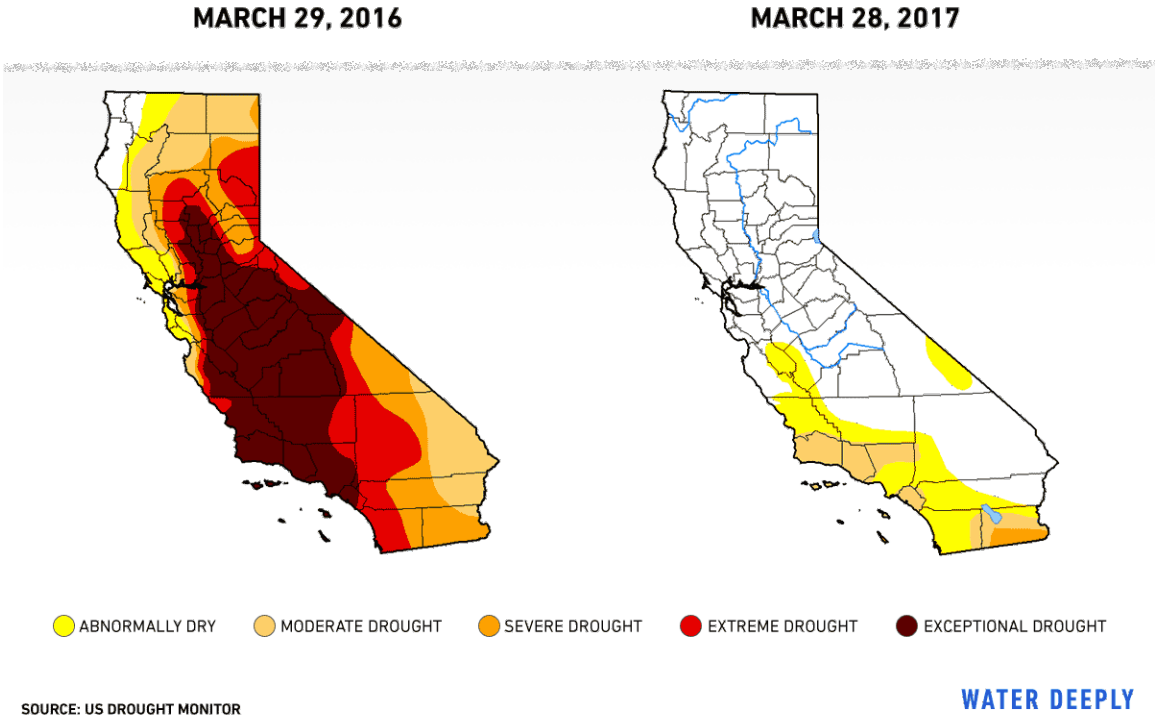


Figure 36: California's drought level March 2016-2017



Drought Risk Assessment

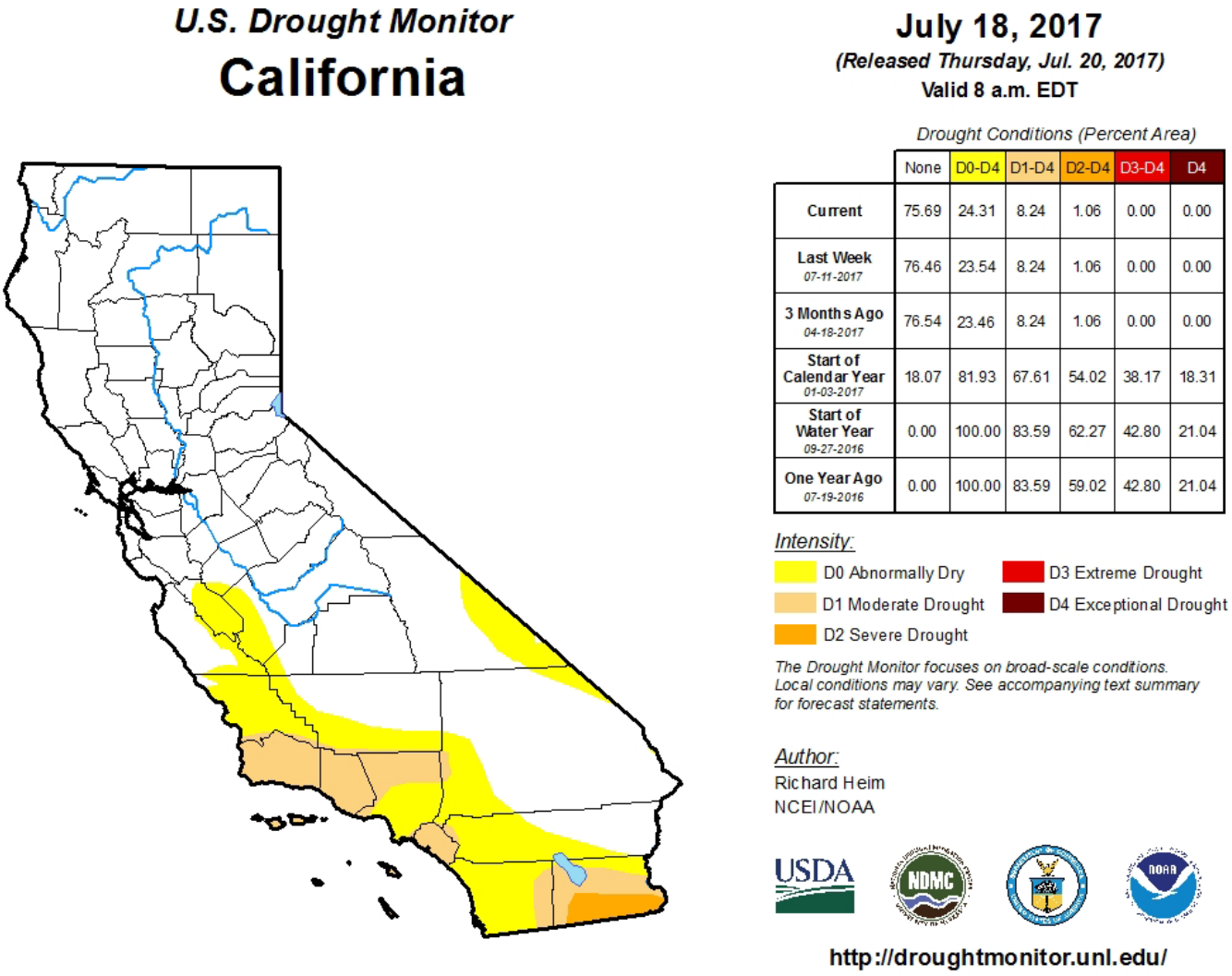
The Department of Water Resources produces a California Water Plan every five years that not only includes a statewide water budget but also regional watershed water budgets. These water budgets are based on California Department of Finance population projections and indicate clearly that demand for 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.

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 37: U.S Drought Monitor – California



5.3.12 Nuclear/Radiological Incident

Severity: 4

Probability: 1

Risk Score: 1.00

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 particular areas are inside or outside of these zones:

- 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.

- 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.

There are three general situations that could affect Riverside County, namely:

1. A situation involving nuclear weapons, which is discussed in the Terrorism section of this LHMP (Section 5.3.7);

2. A situation involving the transportation of nuclear materials; and

3. An incident involving the San Onofre Nuclear Generating Station (SONGS).

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

Fortunately, 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.
- **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.** 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: 2

Risk Score: 0.75

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 because of time and 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 32: Storm Data Table (4/30/1950 to 8/7/2017)

Type	# of Events	Property Loss	Crop Loss	Deaths	Injuries
Drought	26	N/A	N/A	N/A	N/A
Dust Storm	26	405 K	100 K	0	77
Flood	246	88.405 M	5.200 M	7	26
Fog	18	25K	0	0	21
Funnel Cloud	26	0	0	0	0
Hail	30	131.5 K	10 K	0	2
High Winds	227	65.579 M	36.705 M	8	71
Lightning	30	254.5 K	10.1K	1	6
Precipitation	25	40.400 M	0	0	26
Snow and Ice	57	1.386 M	0	4	102
Strong Winds	19	999 K	0	1	2
Temp Extremes	25	1.330 M	1.175 M	31	39
Thunderstorm Winds	119	4.980 M	10 K	0	0
Tornado	24	21.537 M	0	0	4

Type	# of Events	Property Loss	Crop Loss	Deaths	Injuries
Wild and Forest Fire	161	190.892 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 basically 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 portray the averages 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.

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

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

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/idyllwild/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.

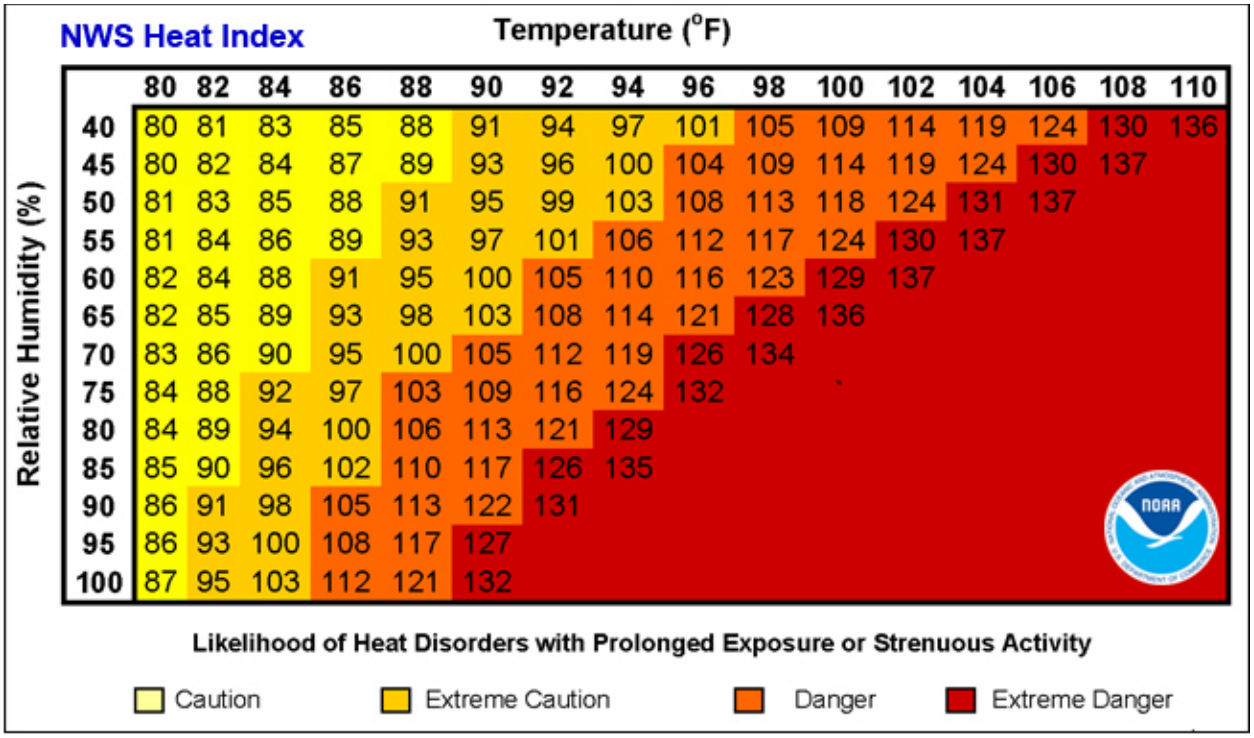
Riverside County has a wide range of temperatures, from freezing in some areas during the winter months to extremely hot temperatures for long periods of time during the summer in the deserts and other areas. In 2011 Riverside County and several other counties were impacted by a power outage during a 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 actually 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.

Figure 38: 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 infrastructure

Extreme heat can not only result in loss of life and injury but it can also cause damages to infrastructures. According to the 2017 update Draft of the Safeguarding California Plan, highway systems can be affected by extreme heat by roads buckling and rutting.

Profiling Extreme Heat Hazards (from the 2013 SHMP)

"Heat waves do not cause damage or elicit the immediate response that floods, fires, earthquakes, and other disasters do. They have, however, claimed many lives in comparison with other disasters. 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. However, according to the 2013 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 2013 SHMP also states that the July 2006 heat wave in California caused the deaths of at least 136 people over a 13-day period (6 deaths were still under investigation in 2007). Another source, the Spatial Hazard Events and Loss Data for the United States (SHELDUS), estimates that approximately 47 heat events occurred in California between the years 1960 and 2008. Adjusted to 2008 dollars, SHELDUS reports that severe heat events in California caused roughly $1.8 million in property damage and $531.7 million in crop damage. From 2012 to 2014 there were 159 fatalities related to extreme Heat events within California.

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. Though no formal explanation exists for this seeming contradiction, scholars have written about the exclusion of heat events as declared disasters. For example, Eric Klinenberg, author of an account of a heat wave which killed 739 people in the City of Chicago in July 1995, suggests that the hidden nature of social vulnerability combined with the inconspicuous nature of heat events (unlike earthquakes, floods, wildfires, tornados, etc.) prevent them from being declared as legitimate disasters.61 Further, although heat events can have a devastating effect on agriculture, heat-caused property damage over the last 48 years has been relatively small.

Treating Heat as a "Legitimate Disaster" (from the 2013 SHMP)

These facts raise several issues. First, since the primary goal of the SHMP is to significantly reduce the loss of life and injuries in the state of California, heat is considered a legitimate disaster type. Though heat does not cause much economic damage or damage to the built environment, the number of people it has killed 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 a disaster. For example, the increased use of air conditioners during heat waves can lead to power outages, which makes the events even more deadly. Upgrading water and power infrastructure, then, is a form of heat disaster mitigation.

Situational and physical characteristics help to identify vulnerable populations that may not comfortably or safely access 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:

- Infants and small children under age three
- Women who are pregnant
- Elderly people (age 65 and older)
- Homeless
- The obese
- The bedridden
- Mentally ill
- Those with cognitive disorders
- Those with medical conditions (e.g., heart disease, diabetes, high blood pressure)
- Those requiring life-saving medications (e.g., for high blood pressure, depression, insomnia)
- Individuals with drug or alcohol addictions
- Those with mobility constraints
- People who are non-ambulatory
- Those under extreme working conditions
- The poor
- People who are socially isolated
- Non-English speakers who may not have access to information

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.

Table 33: 1991 -2013 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***
Total	***12***	***12***	***2***	***4***	***11***	***28***	***187***	***213***	***155***	***47***	***671***

*Current as of June 2017
Source: CDPH Vital Statistics Death Statistical Master Files
Prepared by: California Department of Public Health, Safe and Active Communities Branch
Report generated from http://epicenter.cdph.ca.gov on: August 07, 2017

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.

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 (2013 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).

5.3.13.3 Wind Event

Overview

Windstorms are a hazard for many of the participating.

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.

Figure 39: 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.

Wind Erosion

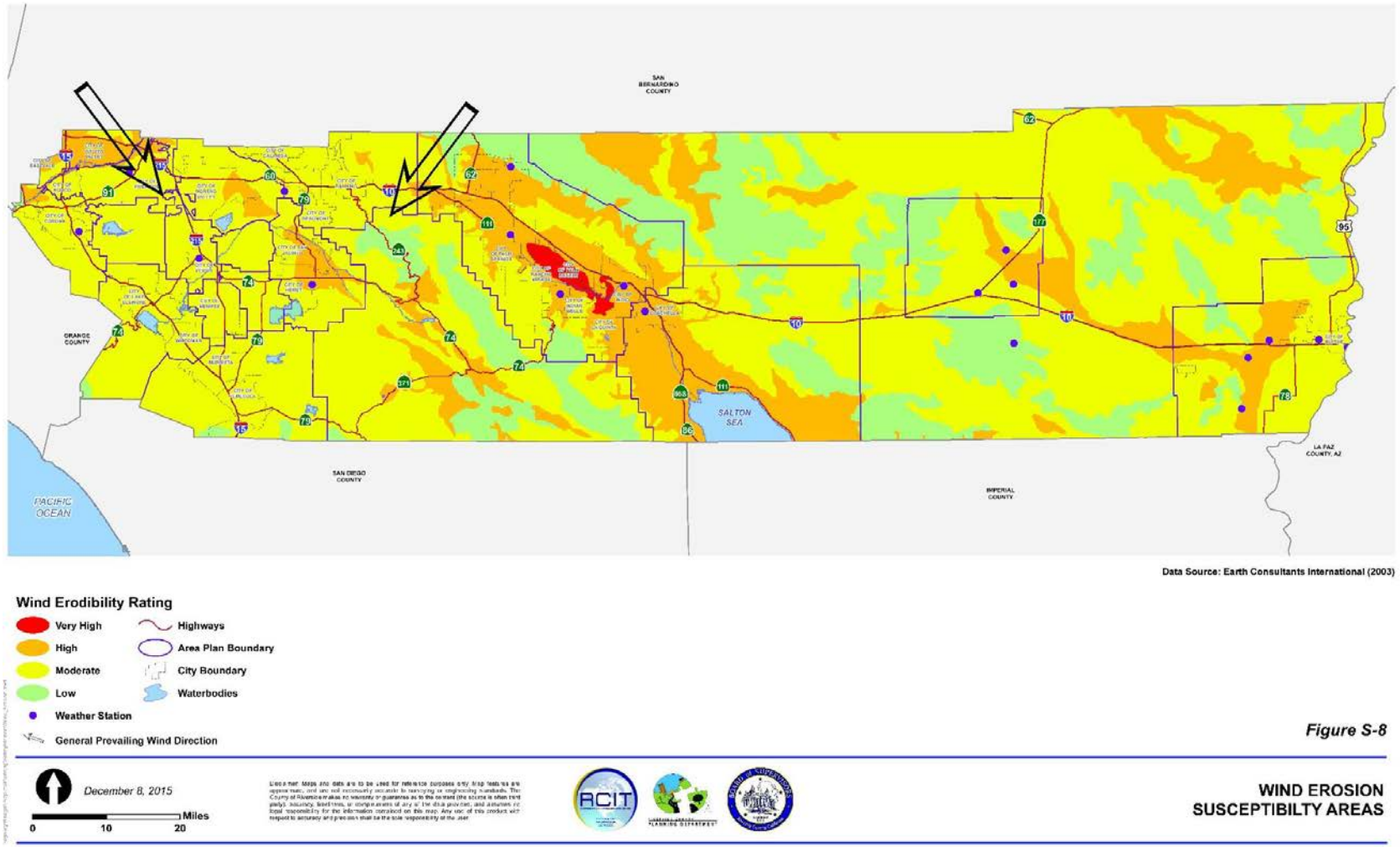
Soil erosion is also a natural on-going process that transports, erodes and displaces soil particles through a transport mechanism, such as flowing water or the wind. Loose texture and steep slopes primarily result in high wind erosion potential in soils. Wind erosion is most severe in arid regions, 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.

Map 17: Riverside County Wind Erosion Map



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.

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. In 2014, Riverside County ranked in the top fourteen leading agricultural counties in California, with an agricultural production value of $1.36 billion. Major agricultural industries include milk, nursery products, citrus and avocado, grapes, vegetables and hay.

Riverside County is divided into two general agriculture regions (Desert and Western Riverside County), with the San Bernardino National Forest acting as a natural dividing line.

Desert - Coachella Valley & Palo Verde Valley

Agriculture is the second largest industry in the Desert Valleys and is primarily crop- related. Over 61% 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% 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)

Statistics for Riverside County Agriculture

Table 11: USDA statistics for Riverside County Agriculture for 2012 show the following:

Payroll	$16 million
Farms	3,440
Farm Acreage	344,044
Crop Value Production	$1.03 billion +
Livestock, poultry value including production	$146 million +
Dairy cows	42,954
Sheep and Lambs	36,846
20 week old and older layers	4,127,452
Wheat for Grain Acreage	6,400

United States Department of Agriculture, National Agricultural Statistics Service reports listed the following as the Top 5 commodities in 2015.

Table 12: Top 5 Commodities

Milk Products	$165,124 million
Table Grapes	$143,988 million
Nursery Stock	$137,707 million
Lemons	$120,557 million
Hay	$81,760 million

History

Table 13: 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,	All Agricultural Commodities		Countywide
2013-2016	Drought	Crops damaged due to		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 have to be milked and without the ability to transport the milk off property, that milk has to 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 through the use of 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 man-made 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 or not 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 37: 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 HONEY BEE
BARK BEETLE
CITRUS LEAFMINER
GLASSY-WINGED SHARPSHOOTER
GYPSY MOTH
HONEY BEE 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/HONEY BEE
ASIAN CITRUS PSYLLID
SILVERLEAF WHITEFLY
POLYPHAGOUS SHOT-HOLE BORER

Figure 40: 2015 Pest Interceptions Chart

PEST INTERCEPTIONS - 2015

Scientific Name	Common Name	Pest Rating	Interceptions
Solenopsis invicta	Red Imported Fire Ant	A	30
Maconellicoccus hirsutus	Pink Hibiscus Mealybug	A	8
Lopholeacaspsis cockerelli	Cockerell Scale	A	3
Pseudaulacaspis cockerelli	Magnolia White Scale	A	1
Ceroplastes floridensis	Florida Wax Scale	A	1
Paropeas achatinaceum	Land Snail	A	1
Aspidiotus destructor	Coconut Scale	A	1
Homalodisca vitripennis	Glassy-Winged Sharpshooter	B	2
Aonideilla aurantii	California Red Scale	B	1
Pulvinaria urbicola	Urban Soft Scale	B	1
Bradybaena similaris	Asian Tramp Snail	B	1
Fatoua villosa	Crabweed	B	1
Nipaecoccus sp.	Mealybug	Q	2
Paracoccus sp.	Mealybug	Q	2
Aspindiella sacchari	Armored Scale	Q	1
Phenacoccus peruvianus	Mealybug	Q	1
Ferriasia sp.	Mealybug	Q	1
Milviscutulus sp.	Scale	Q	1
Ophelimus mastielli	Gall Wasp	Q	1
Bambusaspis miliaris	Bamboo Pit Scale	Q	1

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

Risk Score: 0.38

OA Jurisdictions Affected by Transportation Hazard Incidents

- Riverside Community College District
- San Gorgonio Memorial Hospital
- Banning
- Beaumont
- Blythe
- Calimesa
- Canyon Lake
- Cathedral City
- Coachella
- Corona
- Desert Hot Springs
- Eastvale
- Hemet Indian Wells
- Indio
- Jurupa Valley
- La Quinta
- Lake Elsinore
- Menifee
- Moreno Valley
- Murrieta
- Norco
- Palm Desert
- Palm Springs
- Perris
- Rancho Mirage
- Riverside
- San Jacinto
- Temecula
- Wildomar

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 one out of every ten trucks on the freeway carries some sort of hazardous materials. (In addition, California Highway Patrol statistics show that 20 – 25 percent of them are usually driven in an unsafe mechanical condition.)

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 flight-paths 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

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.

- **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**. 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."

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 (if the incident occurs in the desert when the temperatures are very high, citizens in vehicles stopped for several hours can suffer from the heat and lack of conveniences). In all cases, health and life may be threatened.

5.3.15 Dam Failure

Severity: 3

Probability: 1

Risk Score: 0.38

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** can be catastrophic, both for crops 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 obviously causes downstream flooding. It may also lead to power failures and downed power lines. 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.

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Table 38: Dams within the County of Riverside

Listed Alphabetically By County

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	Offstream	1996	92	5	0.1	1651.2
35-014	CA01085	Henry J Mills Reservoir	Metropolitan Water Dist	Riverside	Offstream	1979	83	6	0	1651
35-017	CA01374	Hj Mills Reclamation	Metropolitan Water District	Riverside	Offstream	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

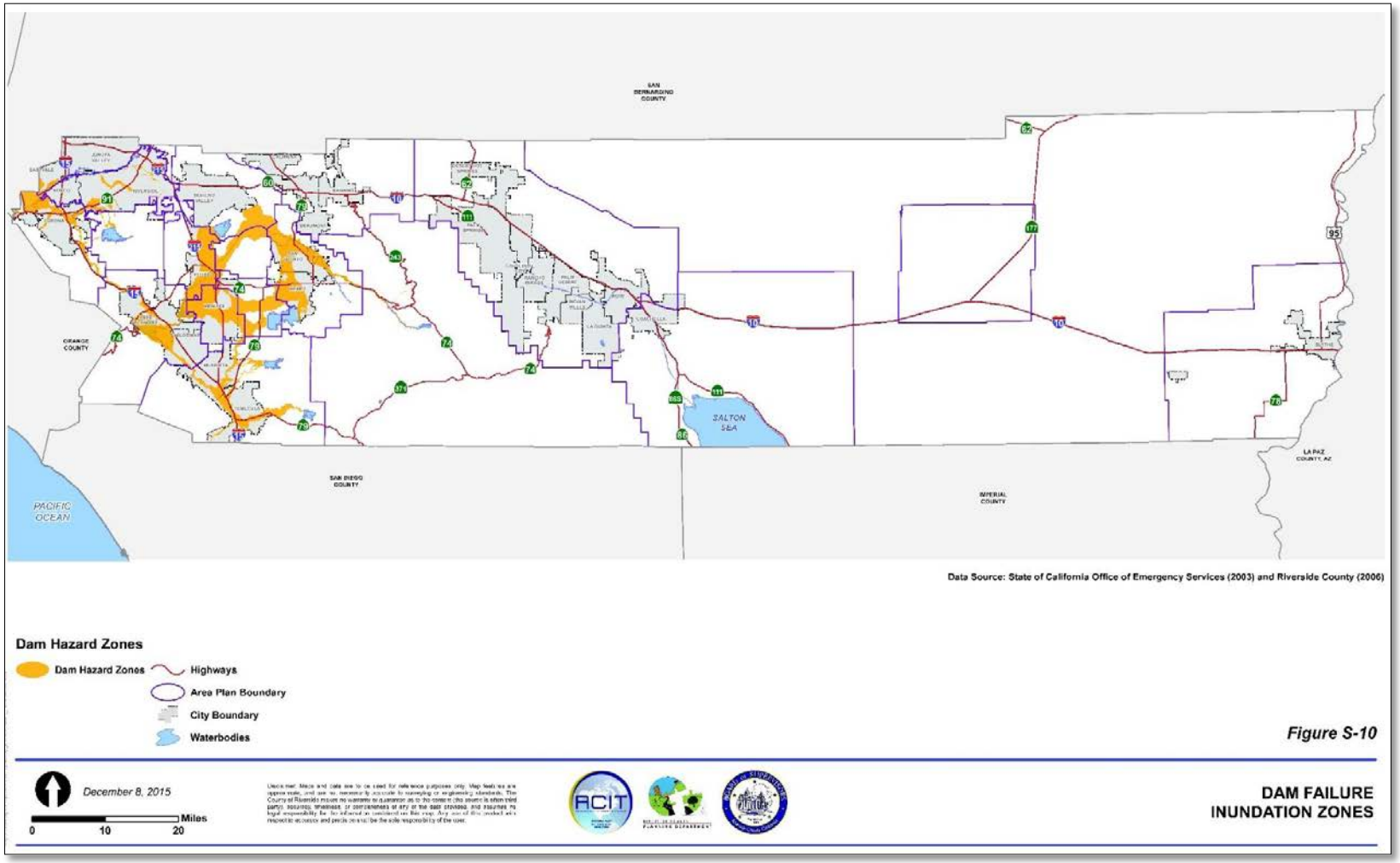
1003-010	CA01179	Oak Street	Riverside County Flood Control And Water Conservation	Riverside	Oak Street Cr	1979	138	36	6.02	1034
1-068	CA00054	Perris	California Department Of Water Resources	Riverside	Bernasconi Pass	1973	131452	2340	10	1600
1003-006	CA00801	Pigeon Pass	Riverside County Flood Control 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 damn 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 2015 Draft version of the Flood and Dam Inundation Plan, maintained by Riverside County Transportation and Land Management Agency.

Map 18: Riverside County Dam Inundation Risks



5.3.16 Aqueduct

Severity: 3

Probability: 2

Risk Score: 0.38

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.

Figure 41: California Aqueducts



Source: 2013 (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 render them out of service. In this event the water supply to the County 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.

- **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.** In the event of an aqueduct failure crops 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

Risk Score: 0.25

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 39: 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; windows broken; light trailer houses pushed or overturned; some trees uprooted or snapped; moving automobiles pushed off the road. 74 mph is the beginning of hurricane wind speed.
F2	113-157	**Considerable damage.** Roofs torn off frame houses leaving strong upright walls; weak buildings in rural areas demolished; trailer houses destroyed; large trees snapped or uprooted; railroad boxcars pushed over; light object missiles generated; cars blown off highway.
F3	158-206	**Severe damage.** Roofs and some walls torn off frame houses; some rural buildings completely demolished; trains overturned; steel-framed hangar-warehouse-type structures torn; cars lifted off the ground; most trees in a forest uprooted snapped, or leveled.
F4	207-260	**Devastating damage.** Whole frame houses leveled, leaving piles of debris; steel structures badly damaged; trees debarked by small flying debris; cars and trains thrown some distances or rolled considerable distances; large missiles generated.
F5	261-318	**Incredible damage.** Whole frame houses tossed off foundations; steel-reinforced concrete structures badly damaged; automobile-sized missiles generated; trees debarked; incredible phenomena can occur.
F6-F12	319 to sonic	**Inconceivable damage.** Should a tornado with the maximum wind speed in excess of F5 occur, the extent and types of damage may not be conceived. A number of missiles such as iceboxes, water heaters, storage tanks, automobiles, etc. will create serious secondary damage on structures.
Source: http://weather.latimes.com/tornadoFAQ.asp		

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 high number of tornados and microbursts that have occurred in the County.

Figure 42: Historical Tornados Statistics for Riverside

DATE	FORCE	DEATH(S)	INJURED	DISTANCE
10/17/2015	0	0	0	22
09/09/2012	0	0	0	14
08/12/2012	0	0	0	16
05/22/2008	0	0	0	11
05/22/2008	2	0	1	8
05/22/2008	0	0	0	8
05/22/2008	0	0	0	10
07/23/2006	0	0	0	20
07/23/2005	0	0	0	27
03/04/2005	0	0	0	11
02/26/2005	0	0	0	17
01/09/2005	0	0	0	29
12/21/2001	0	0	0	28
02/24/2001	0	0	0	27
02/16/2000	0	0	0	30
05/13/1998	0	0	0	21
02/07/1994	0	0	0	28
02/08/1993	0	0	0	28
01/17/1993	0	0	1	28
03/20/1991	0	0	0	1
03/20/1991	0	0	0	16
02/28/1991	0	0	0	27
01/18/1988	0	0	0	27

Source:http://www.homefacts.com/tornadoes/California/Riverside-County/Riverside.html

Map 19: Past Riverside Count Tornadoes



Source: http://www.tornadohistoryproject.com/tornado/California/Riverside/map

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.

- **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.** 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.

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 is high dollar recovery costs.

Relationship to Other Hazards – Cascading Effects

Tornados can destroy powerlines causing disruption in power to residents and commercial properties. They can damage critical facilities and devastate homes.

5.3.18 Insect Infestation

Severity: 2

Probability: 3

Risk Score: 0.00

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 40: Example Insect Species

NAME
AFRICANIZED HONEY BEE
BARK BEETLE
CITRUS LEAFMINER
GLASSY-WINGED SHARPSHOOTER
GYPSY MOTH
HONEY BEE 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/HONEY BEE
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

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

Presently - Parts of Riverside County (Moreno Valley, Indio, Rancho Mirage, Palm Desert, Bermuda Dunes, and Palm Springs) are 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 Honey Bees 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 seventy three 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, 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: 1

Risk Score: -0.13

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. Indio Jail
4. Southwest County Jail (Murrieta)
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

It is important that law enforcement remains 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 as a way to stop state prison overcrowding. The effects of this change are just now being seen. Time will tell what the overall impact to Riverside County and its citizens will actually 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.** Relatively speaking, the risks are minimal. However, violent offenders escaping custody in a disaster could lead to residents in the surrounding areas being at risk of harm.
- **Effects on commercial and industrial structures**. The risks are minimal.
- **Effects on infrastructure.** The risks are minimal.
- **Effects on agriculture.** The risks are minimal.

Risk Assessment Conclusion.

Relatively speaking, the risks of jail and prison incidents will remain a minimal threat to the County. 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

Risk Score: -0.38

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

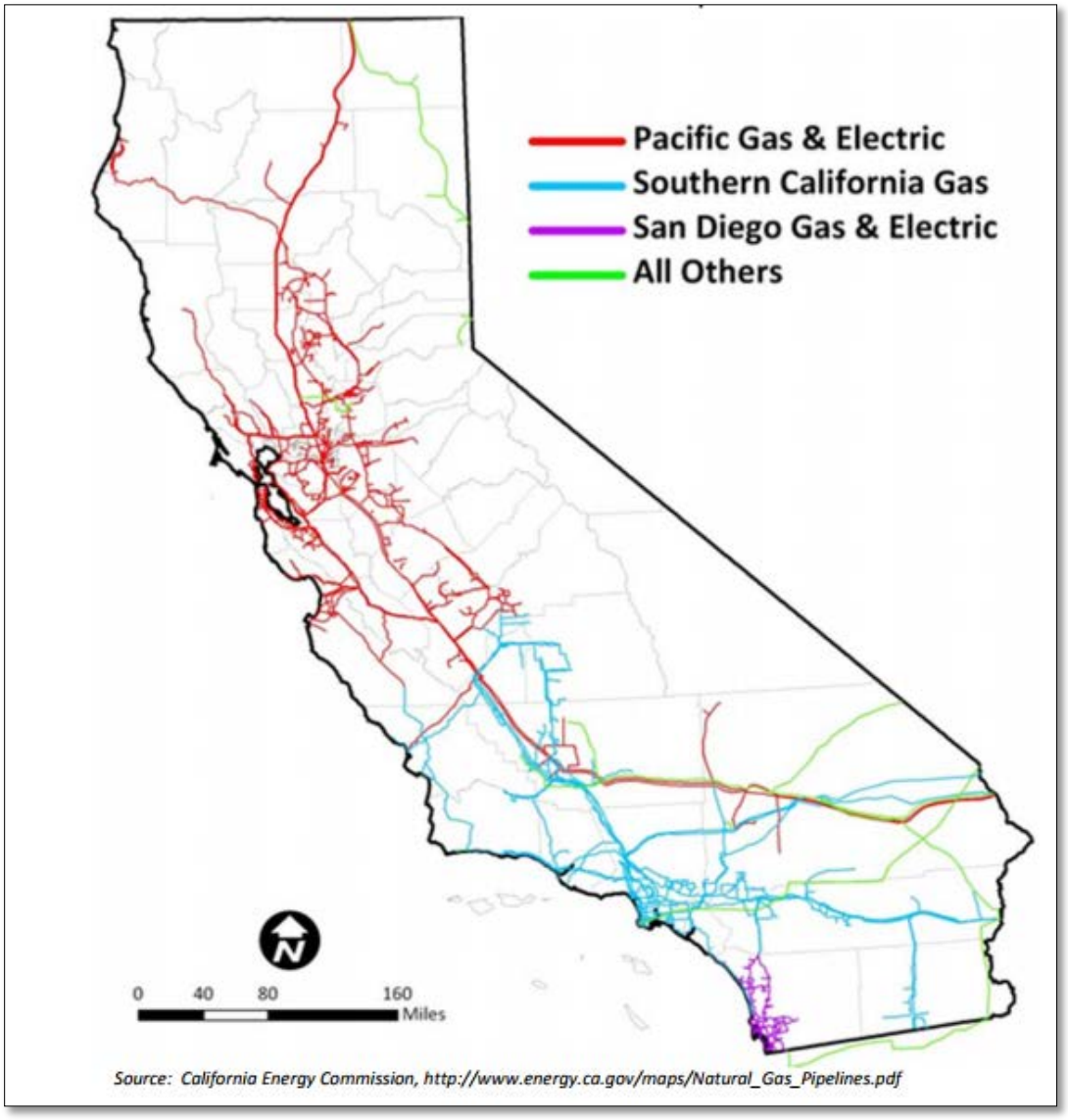
There are many pipeline distribution systems that transit Riverside County, including systems for water, natural gas, and petroleum products.

Identifying Natural Gas Pipeline Hazards (SHMP)

The United States is heavily dependent on transmission pipelines to distribute energy and fuel sources. Virtually all natural gas, which accounts for about 28 percent of the energy consumed annually, is transported by transmission pipelines. Energy demand in the United States continues to increase. Although California is a leader in exploring and implementing alternative energy sources such as the wind and solar, the expansion of traditional energy sources, such as natural gas, continues. Increased urbanization is resulting in more 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 43: California Gas Lines



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

Fortunately, 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.

- **Effects on commercial and industrial structures.** Similarly, the effects on commercial and industrial structures from flooding or explosion could be severe.

- **Effects on agriculture.** In the same way, the effects on agriculture 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 air, water and land contamination. Incidents with natural gas or petroleum product pipelines may lead to explosion and fire.

5.3.21 Landslide

Severity: 3

Probability: 3

Risk Score: -0.58

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 man-made undercutting.

Riverside County has a history of landslides during seasons of high precipitation.

History

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.

- **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**. 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.

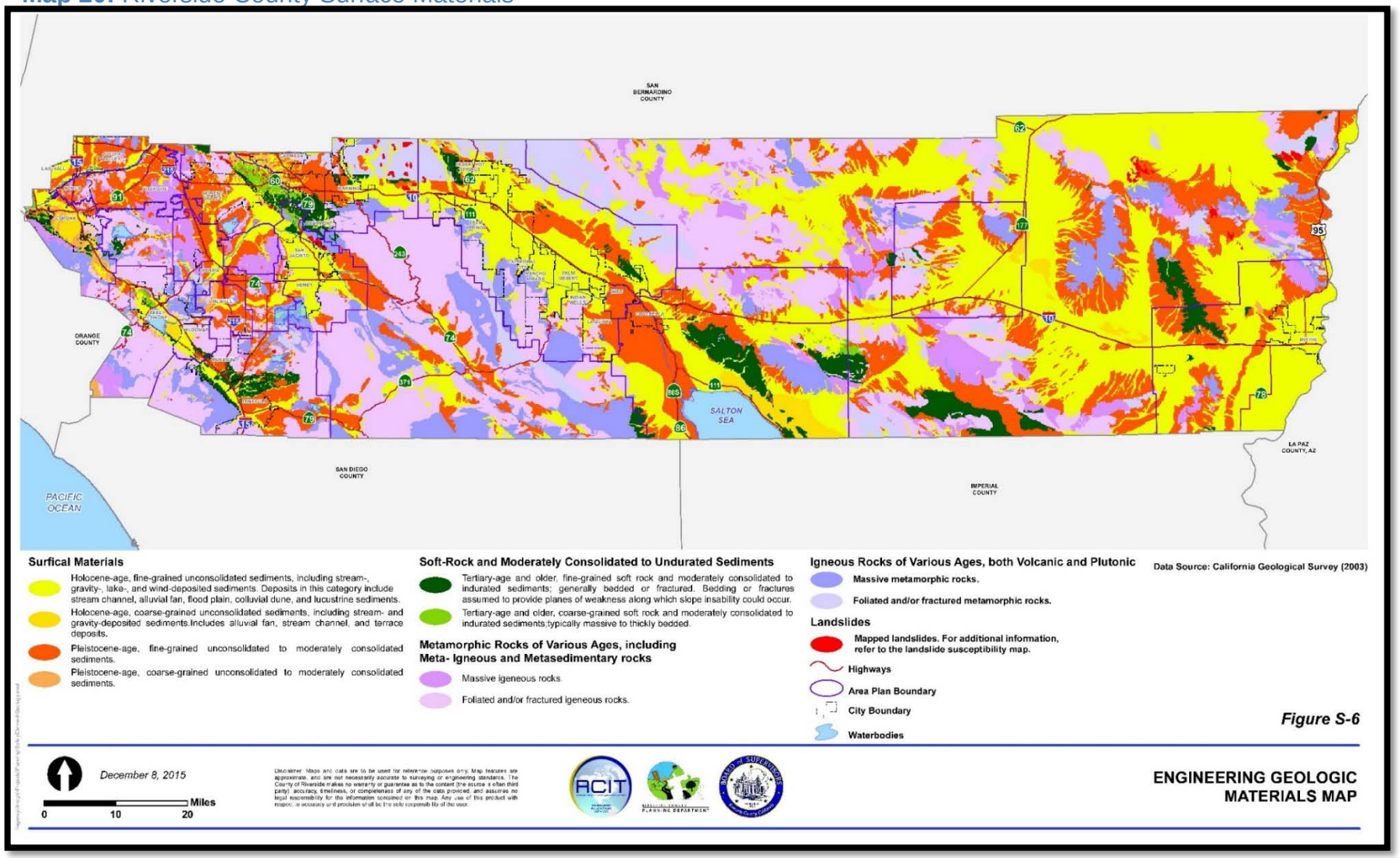
Risk Assessment Conclusion

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.

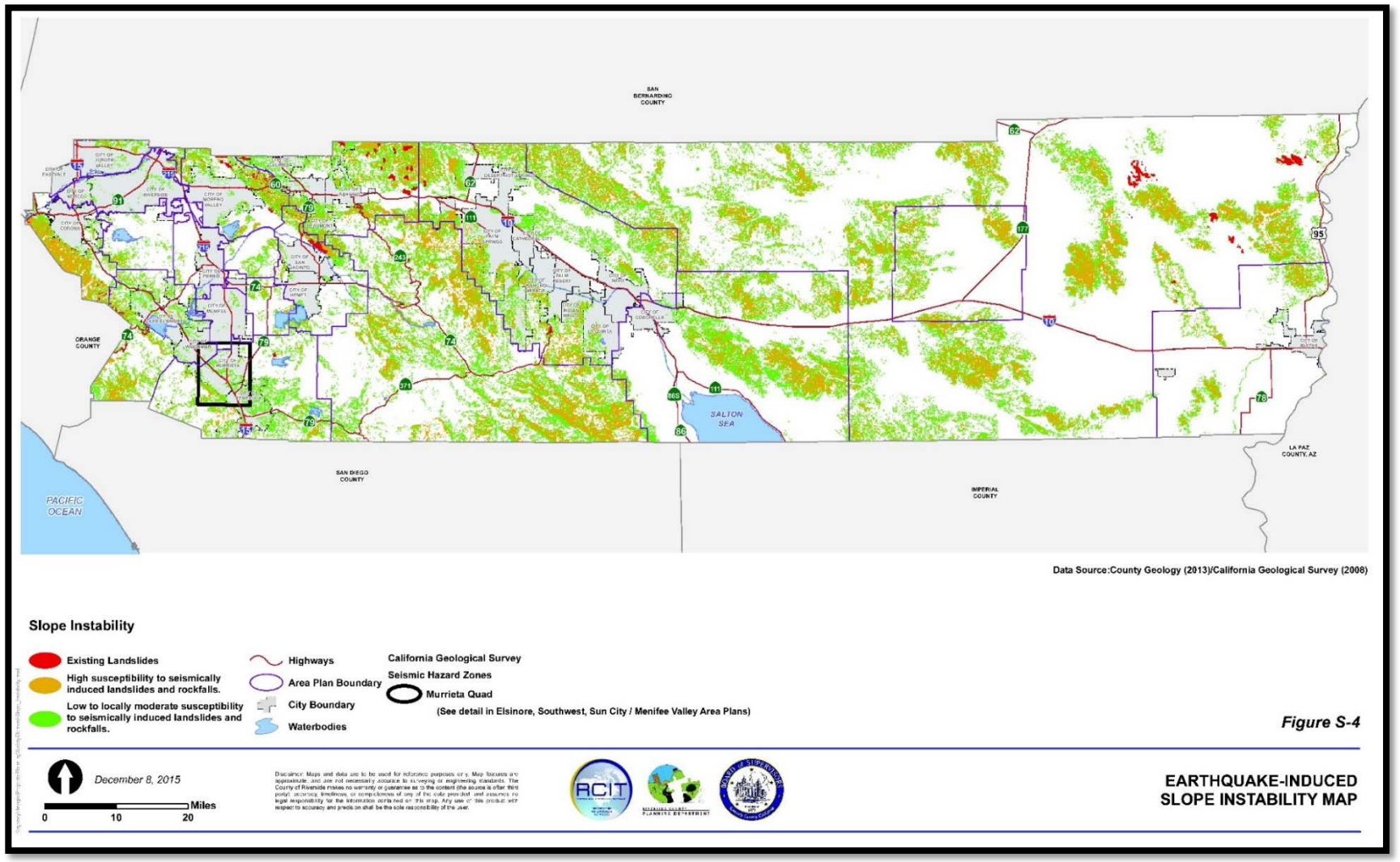
Relationship to Other Hazards – Cascading Effects

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 20: Riverside County Surface Materials



Map 21: Riverside County Slope Instability Map



5.3.22 Hazardous Materials Incident

Severity: 3

Probability: 4

Risk Score: -0.75

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 actually happens.

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 41: History of Hazmat Incidents in 2016

Riverside County Department of Environmental Health Hazmat Incidents July 1, 2015 to June 30, 2016	
HAZARDOUS MATERIALS INCIDENT TYPE	TOTAL NUMBER
General Emergency Response (do not fit other categories)	28
Drug Labs	23
Drug Dumps	3
Facility Incidents	122
Roadway Incidents	119
Aircraft Incidents	3
Railroad Incidents	7
Mercury Incidents	5
Dielectric Fluid Incidents	40
Radiological Incidents	0
Pesticide Incidents	2
Medical Waste Incidents	9
Noxious Odor Incidents	39
Illegal Disposal of Substances	207
Transportation/Manifesting Violations	0
Suspected Terrorism	4
TOTAL Hazardous Materials Incidents:	**611**

The Riverside County Department of Environmental Health Hazardous Materials Emergency Response Program handled over 611 incidents in fiscal year (FY15/16) 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.

In 2016 The Riverside County Fire department responded to 613 Hazardous Materials Incidents.

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 amount 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.

- **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.** 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.

5.3.23 Water Supply Disruption/Contamination

Severity: 2

Probability: 3

Risk Score: -1.50

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 man-made. Examples of chemical contaminants include nitrogen,

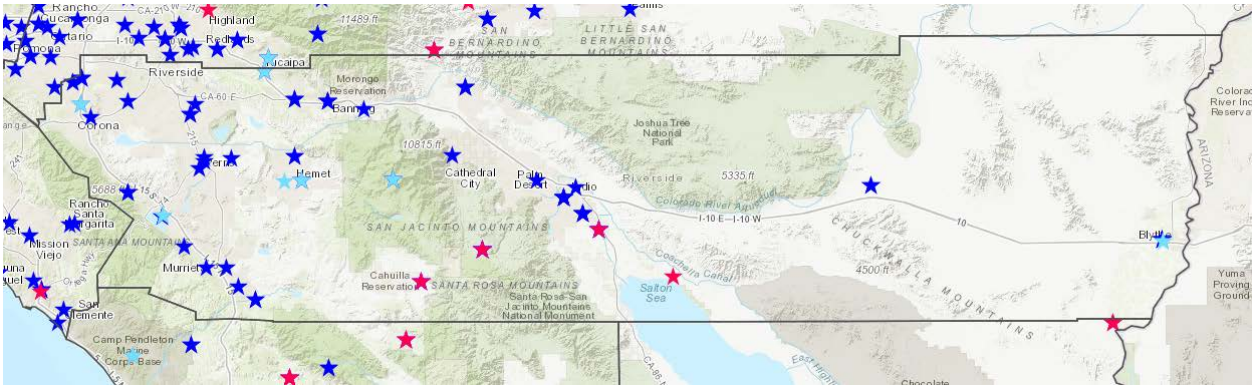
bleach, salts, pesticides, metals, toxins produced by bacteria, and human or animal drugs.

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.



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 as of July 2017.

- **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.

- **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.** 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.

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 man-made and natural hazards. In the event of an earthquake and 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.

Section 6.0 – 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 August 14, 2014.

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, four cities participate in CRS: Lake Elsinore, Moreno Valley, Murrieta, and Palm Springs.

The most active in the Community Rating System within the County is Palm Springs. Their high scores in the system allow the city to offer the highest discount off of flood insurance (20% for SFHA and 10% for Non-SFHA).

Community Number	Community Name	CRS Entry Date	Current Effective Date	Current Class	% Discount for SFHA	% Discount for Non-SFHA	Status
060245	Riverside County*	10/01/10	05/01/16	7	15	5	C
060636	Lake Elsinore	10/01/09	05/01/14	8	10	5	C
065074	Moreno Valley	10/01/91	10/01/96	8	10	5	C
060751	Murrieta	10/01/97	10/01/97	9	5	5	C
060257	Palm Springs	10/01/92	05/01/11	6	20	10	C

Note: SFHA, Special Flood Hazard Areas

6.1 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 five properties so as to avoid future flooding incidents. Options being considered are both structural and non-structural mitigation measures.

Table 42: 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

6.2 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 43: 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
060763C	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
060753C	CANYON LAKE	-	11/20/96	04/19/17	09/15/98	No
060704#	CATHEDRAL CITY	-	05/01/85	08/28/08	11/12/82	No
060249#	COACHELLA	05/17/74	09/30/80	(NSFHA)	09/30/80	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
060253C	HEMET	05/24/74	09/29/78	04/19/17	09/29/78	No
060254C	INDIAN WELLS	06/28/74	09/14/79	04/19/17	09/14/79	No
060255#	INDIO	05/31/74	09/14/79	08/28/08	09/14/79	No
060286#	JURUPA VALLEY	-	08/18/14	08/18/14	09/23/13	No

060709C	LA QUINTA	-	06/19/85	04/19/17	07/01/85	No
060636C	LAKE ELSINORE	06/28/74	09/17/80	04/19/17	09/17/80	No
060176C	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
060629C	PALM DESERT	06/14/77	04/15/80	04/19/17	04/15/80	No
060257C	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
060259C	RANCHO MIRAGE	-	09/14/79	04/19/17	09/14/79	No
060245C	RIVERSIDE COUNTY *	-	04/15/80	04/19/17	04/15/80	No
060260#	RIVERSIDE	07/19/74	01/06/83	08/28/08	01/06/83	No
065056C	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

Section 7.0 – Capabilities Assessment

7.1 Regulatory Mitigation Table

Table 44: Regulatory Tools

Regulatory Tool	Yes/No	Comments
General Plan	Yes	General Plan December 15, 2015
Zoning Ordinance	Yes	Adopted updates to General Plan on December 15, 2015, Ordinance No. 348: Providing For Land Use Planning And Zoning Regulations and Related Functions of the County of Riverside effective 1/05/17
Subdivision Ordinance	Yes	Adopted updates to General Plan on December 15, 2015, Riverside County Ordinance No. 460: Subdivision Regulations, Riverside County Code of Ordinances, Title 16
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, 2016

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	Last Report, Lakeland Village in March 2015

7.2 Administrative/Technical Mitigation Table

Table 45: 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 Responder's
Sheriff's Office	Yes	Sherriff's Emergency Response Team (SERT) members, EOC Responder's
Roads	Yes	Engineers, EOC Responder's, Highway Operations Superintendent
Building and Safety Planning Dept.	Yes	Planners, Principle Building Inspectors, Engineers, EOC Responder's
Geographic Information System	Yes	GIS Specialist, CIS Supervisors, GIS Analysts, EOC Responder's
Information Technology	Yes	Chief Information Officer, IT Officers, EOC Responder's, 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 46: 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 for fiscal year 11/12 per 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

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 take critical mitigation measures to reduce the risk of loss of life and property from future disasters during the reconstruction process following a disaster. HMGP is available, when authorized under a Presidential major disaster declaration, in the areas requested by the California 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).

The Pre-Disaster Mitigation (PDM) program is authorized by Section 203 of the Stafford Act, 42 U.S.C. 5133. The PDM program is designed to assist States, Territories, Tribal governments, and local communities in implementing a sustained pre-disaster hazard mitigation program to reduce the overall risk to the population and structures from future hazard events, while also reducing Federal disaster response expense.

Table 47: Grant Funding Opportunities for Mitigation

Grant Name	Agency	Purpose	Contact
Pre-Disaster Mitigation Program **(PDM)**	U.S. Department of Homeland Security, Federal Emergency Management Agency	To provide funding for States, and communities for cost-effective hazard mitigation activities which complement a comprehensive hazard mitigation program to reduce injuries, loss of life, property damage, and reconstruction of property.	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 the State and local level 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 and 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 and 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 currently Twenty (22) jurisdictions supporting CERT Programs within the County: 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 emergent 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 2015. 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 LHMP 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 LHMP.

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 man-made 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 2017 LHMP, the County assessed each strategy based on the goals and objectives in the LHMP 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 2012 LHMP reviewing any events that occurred 2012 to 2017, 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 2015, includes the following policies and recommendations for new construction and proposals in Safety Element 4:

Earthquake Hazards:

S 1.1 Mitigate hazard impacts through adoption and strict enforcement of current building codes, which will be amended as necessary when local deficiencies are identified.

S 1.2 Enforce state laws aimed at identification, inventory, and retrofit of existing vulnerable structures.

S 2.1 Minimize fault rupture hazards through enforcement of Alquist-Priolo Earthquake Fault Zoning Act provisions and the following policies: (AI 80, 91)

a. Require geologic studies or analyses for critical structures, lifeline, high-occupancy, schools, and high-risk structures within 0.5 miles of all Quaternary historic faults shown on the Earthquake Fault Studies Zones map.
b. Require geologic trenching studies within all designated Earthquake Fault Studies Zones, unless adequate evidence, as determined and accepted by the Riverside County Engineering Geologist, is presented. The County of Riverside may require geologic trenching of non-zoned faults for especially critical or vulnerable structures or lifelines.
c. Require that lifelines be designed to resist, without failure, 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 through-going fault cannot be reliably located.

S 2.2 Require geological and geotechnical investigations in areas with potential for earthquake-induced liquefaction, landsliding or settlement, for any building proposed for human occupancy and any structure whose damage would cause harm, except for accessory buildings.

S 2.5 Require that engineered slopes be designed to resist seismically- induced failure. For lower-risk projects, slope design could be based on pseudo-static stability analyses using soil engineering parameters that are established on a site-specific basis. For higher-risk projects, the stability analyses should factor in the intensity of expected ground shaking, using a Newmark-type deformation analysis.

S 2.6 Require that cut and fill transition lots be over-excavated to mitigate the potential of seismically-induced differential settlement.

S 2.7 Require a 100% maximum variation of fill depths beneath structures to mitigate the potential of seismically-induced differential settlement.

Flood Hazards:

S 4.1 For new construction and proposals for substantial improvements to residential and nonresidential development within 100-year floodplains as mapped by FEMA or as determined by site specific hydrologic studies for areas not mapped by FEMA, Riverside County shall apply a minimum level of acceptable risk; and disapprove projects that cannot mitigate the hazard to the satisfaction of the Building Official or other responsible agency.

S 4.2 The County shall enforce provisions of the Building Code in conjunction with the following guidelines: (AI 25)

a. All residential, commercial and industrial structures shall be flood-proofed from the mapped 100-year storm flow. This may require that the finished floor elevation be constructed at such a height as to meet this requirement. Non-residential (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 shall be constructed above grade to the satisfaction of the Building Official, based on federal, state, or other reliable hydrologic studies. To the extent that residential, commercial, or industrial structures cannot meet these standards, they shall not be approved.
b. Critical facilities shall not be permitted in floodplains unless the project design ensures that there are two routes for emergency egress and regress, and minimizes 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.
c. Development using, storing, or otherwise involved with substantial quantities of onsite hazardous materials shall not be permitted within a 100-year floodplain or dam inundation zone, unless all standards for evaluation, anchoring, and flood-proofing have been satisfied; and hazardous materials are stored in watertight containers, not capable of floating, to the extent required by state and federal laws and regulations.
d. Specific flood-proofing measures may require: use of paints, membranes, or mortar to reduce water seepage through walls; installation of water tight doors, bulkheads, and shutters; installation of flood water pumps in structures; and proper modification and protection of all electrical equipment, circuits, and

appliances so that the risk of electrocution or fire is eliminated. However, fully enclosed areas that are below finished floors shall require openings to equalize the forces on both sides of the walls.

S 4.3 Prohibit construction of permanent structures for human housing or employment to the extent necessary to convey floodwaters without property damage or risk to public safety. Agricultural, recreational, or other low intensity uses are allowable if flood control and groundwater recharge functions are maintained.

S 4.4 Prohibit alteration of floodways and channelization unless alternative methods of flood control are not technically feasible or unless alternative methods are utilized to the maximum extent practicable. The intent is to balance the need for protection with prudent land use solutions, recreation needs, and habitat requirements, and as applicable to provide incentives for natural watercourse preservation, including density transfer programs as may be adopted. (AI 25, 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.

S 4.5 Prohibit substantial modification to watercourses, unless modification does not increase erosion or adjacent sedimentation, or increase water velocities, so as to be detrimental to adjacent property, nor adversely affect adjacent wetlands or riparian habitat.

S 4.6 Direct flood control improvement measures toward the protection of existing and planned development.

S 4.7 Any substantial modification to a watercourse shall be done in the least environmentally damaging manner practicable in order to maintain adequate wildlife corridors and linkages and maximize groundwater recharge.

S 4.8 Allow development within the floodway fringe, if the proposed structures can be adequately flood-proofed and will not contribute to property damage or risks to public safety.

S 4.9 Within the floodway fringe of a floodplain as mapped by FEMA or as determined by site specific hydrologic studies for areas not mapped by FEMA, require development to be capable of withstanding flooding and to minimize use of fill. However, some development may be compatible within flood plains and floodways, as may some other land uses. In such cases, flood proofing would not be required. Compatible uses shall not, however, obstruct flows or adversely affect upstream or downstream properties with increased velocities, erosion backwater effects, or concentrations of flows.

S 4.10 Require all proposed projects anywhere in the county to address and mitigate any adverse impacts that it may have on the carrying capacity of local and regional storm drain systems.

S 4.11 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.

Fire Hazards:

S 5.1 Develop and enforce construction and design standards that ensure that proposed development incorporates fire prevention features through the following:

a. All proposed development and construction within Fire Hazard Severity Zones shall be reviewed by the Riverside County Fire and Building and Safety departments.
b. All proposed development and construction shall meet minimum standards for fire safety as defined in the Riverside County Building or County 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.
c. In addition to the standards and guidelines of the California Building Code and California Fire Code fire safety provisions, continue to implement additional standards for high-risk, high occupancy, dependent, and essential facilities where appropriate under the Riverside County Fire Code (Ordinance No. 787) Protection 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
d. Proposed development and construction in Fire Hazard Severity Zones shall provide secondary public access, in accordance with Riverside County Ordinances.

e. 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.
f. Proposed development and construction in Fire Hazard Severity Zones shall provide a defensible space or fuel modification zones to be located, designed, and constructed that provide adequate defensibility from wildfires.

S 5.2 Encourage continued operation of programs for fuel breaks, brush management, controlled burning, revegetation and fire roads.

S 5.3 Monitor fire-prevention measures (such as fuel reduction) through a site specific fire-prevention plan to reduce long-term fire risks in the Fire Hazard Severity Zones.

S 5.4 Limit or prohibit development or activities in areas lacking water and access roads.

S 5.5 Encourage proposed development in Fire Hazard Severity Zones to develop where fire and emergency services are available or planned.

S 5.6 Demonstrate that the proposed development can provide fire services that meet the minimum travel times identified in Riverside County Fire Department Fire Protection and EMS Strategic Master Plan.

S 5.7 Minimize pockets of flammable vegetation that increase likelihood of fire spread through conceptual landscaping plans to be reviewed by Planning and Fire Departments in the Fire Hazard Severity Zones. The conceptual landscaping plan of the proposed development shall at a minimum include:
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 onsite combustible plants.

S 5.8 Design to account for topography of a site and reduce the increased risk from fires in the Fire Hazard Severity Zones located near ridgelines, plateau escarpments, saddles, hillsides, peaks, or other areas where the terrain or topography affect its susceptibility to wildfires by:
a. Providing fuel modification zones with removal of combustible vegetation, but 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 minimum 30 foot of setback from the edge of the fuel modification zones.
f. Minimizing disturbance of 25% or greater natural slopes.

S 5.9 Reduce fire threat and strengthen fire-fighting capability so that the County could successfully respond to multiple fires. (AI 88)

S 5.10 Require automatic natural gas shutoff earthquake sensors in high-occupancy industrial and commercial facilities, and encourage them for all residences.

S 5.11 Utilize ongoing brush clearance fire inspections to educate homeowners on fire prevention tips by implementing annual countywide weed abatement program

S 5.12 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.

S 5.13 Develop a program to utilize existing reservoirs, tanks, and water wells in the county for emergency fire suppression water sources.

S 5.14 Periodically review inter-jurisdictional fire response agreements, and improve firefighting resources as recommended in the Riverside County Fire Department Fire Protection Plan and EMS Strategic Master Plan to keep pace with development, including construction of additional high-rises, mid-rise business parks, increasing numbers of facilities housing immobile populations, and the risk posed by multiple ignitions, to ensure that (AI 4, AI 88):

- 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.
- Fire flow requirements (water for fire protection) are consistent with Riverside County Ordinance 787.
- The planned deployment and height of aerial ladders and other specialized equipment and apparatus are sufficient for the intensity of development desired.

S 5.15 Continue to utilize the Riverside County Fire Department Fire Protection Plan and EMS Strategic Master Plan as the base document to implement the goals and objectives of the Safety Element.

S 5.16 Encourage property owners to utilize clustering and Transfer of Development Rights (TDR) program when developing lands within Fire Hazard Severity Zones by:

- Restricting the development of a property through placement of conservation easement.
- Acquiring the conservation easements similar to that of MSHCP Program.

S 5.17 Identify, map, and update on an as-needed continual basis, the Fire Hazard Severity Zone maps.

S 5.18 Ensure that the Fire Department has appropriate municipal staffing and fire protection planning staff that meet the needs of development pressure and adequately respond to long range fire safety planning.

S 5.19 Implement a coordination program with fire protection and emergency service providers to reassess fire hazards after wildfire events and to adjust fire prevention and suppression needs, as necessary.

S 5.20 Implement a regional coordination program to increase support for coordination among fire protection and emergency service providers.

S 5.21 Implement a long-term training and education program among government agencies and communities about fire protection.

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 Ongoing 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, man-made, 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. Our goal is to make each and every home more fire safe. We ask residents 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:

One of the first things we can do to reduce loss of structures within the County of Riverside is to evaluate all critical facilities' that are exposed to potential damage from the hazards. We should include a review of insurance coverage and identify where more information can be found on the property protection measure(s) recommended by the audit. Typically property protection measures are used to modify buildings or property that has a greater potential to damage. Property protection measures fall under three approaches:

- 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 owners insurance policies or technical and financial assistance can be provided by a government agency

Other measures:

- 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

County Hazard Mitigation Goals and Actions:

The Agency Inventory Document and Mitigation Strategies and Goals, were used by the county and each participating city and special district to review the possible mitigation

actions that would be appropriate for that agency to work on. This is based on how the Riverside County planning area can reduce the vulnerability of people, property, infrastructure, and 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 considered to be part of this plan, and the details, to avoid duplication, should be referenced in their original source document. The Riverside County planning area also realizes that new needs and priorities may arise as a result of a disaster or other circumstances and reserves the right to support new actions, as necessary, as long as they conform to 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 Hazard Mitigation 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 Hazard Mitigation Steering Committee to:

- Disseminate hazard mitigation activities and opportunities to all participants;
- Pursue 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 ALL jurisdictions not included in the Multi-Jurisdictional Plan to develop their own stand-alone 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.

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.

9.4 Maintenance

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, Preparedness 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 identified in the plan, the County of Riverside EMD and the participating jurisdictions will review the plan annually and following a large scale event. 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.

Maintenance Evaluation Process

The yearly review of the plan will be presented and discussed at our annual Operational Area Planning Committee, Disaster Council Meeting held in January. The assessment will address whether:

- The goals and objectives address current and expected conditions.
- The nature, magnitude, and/or type of risks have changed.
- The current resources are appropriate for implementing the plan.
- There are implementation problems, such as technical, political, legal, or coordination issues with other agencies.
- The outcomes have occurred as expected (a demonstration of progress).
- The agencies and other partners participated as originally proposed.

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, Preparedness Division, will conduct a plan update 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. Upon notice of the HMPG funding opportunity, Riverside will apply for any available HMGP funding. After plan adoption, the LHMP Steering Committee in coordination with the EMD Planning team will conduct an annual review of the plan, flagging any sections in the plan that will require further updates. The sections flagged for revision will be included in the next LHMP update. Additional meetings will occur annually throughout the five-year cycle. 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.

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

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APPENDIX B – Participating Jurisdictions and Letters of Commitment

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LHMP Participant Database

Agency Title	In, Out, or New	Agency Type	Agency Discipline
Agua Caliente Band of Cahuilla Indians	DROPPED	Tribe	Tribe
Beaumont Unified	IN	School District	Education
City of Banning	IN	City	N/A
City of Beaumont	IN	City	N/A
City of Blythe	IN	City	N/A
City of Calimesa	IN	City	N/A
City of Canyon Lake	IN	City	N/A
City of Cathedral	IN	City	N/A
City of Coachella	IN	City	N/A
City of Corona	IN	City	N/A
City of Desert Hot Springs	IN	City	N/A
City of Eastvale	IN	City	N/A
City of Hemet	IN	City	N/A
City of Indian Wells	IN	City	N/A
City of Indio	IN	City	N/A
City of Jurupa Valley	IN	City	N/A
City of La Quinta	IN	City	N/A
City of Lake Elsinore	IN	City	N/A

City of Murrieta	IN	City	N/A
City of Norco	IN	City	N/A
City of Palm Desert	IN	City	N/A
City of Palm Spring	IN	City	N/A
City of Perris	IN	City	N/A
City of Rancho Mirage	IN	City	N/A
City of Riverside	IN	City	N/A
City of San Jacinto	IN	City	N/A
City of Temecula	IN	City	N/A
City of Wildomar	IN	City	N/A
Desert Sands USD	NEW	School District	Education
Eastern Municipal Water	IN	Utilities	Water
Fern Valley Water	OUT	Utilities	Water
Hemet Unified School District	IN	School District	Education
High Valley Water	IN	Utilities	Water
Home Gardens County Water	OUT	Utilities	Water
Idyllwild Fire Protection	IN	Special District	Fire Protection
Idyllwild Water	OUT	Utilities	Water
Imperial Irrigation District	IN	Utilities	Water
Kaiser Hospital - Riverside	NEW	Hospital	Health Care

Lake Elsinore USD	IN	School District	Education
March Air Force Base	DROPPED	Military	Airforce
Menifee Union	OUT	School District	Education
Moreno Valley USD	NEW	School District	Education
Morongo Band of Mission Indians	NEW	Tribe	Tribe
Nuview Union	OUT	School District	Education
Palm Springs Unified	OUT	School District	Education
Perris Elementary	OUT	School District	Education
Perris Union HSD	IN	School District	Education
Pine Cove Water	OUT	Utilities	Water
Ramona Band of Indians	DROPPED	Tribe	Tribe
Rancho California Water	IN	Utilities	Water
Riverside Community Colleges	IN	School District	Education
Riverside County Office of Education	IN	County	Education
Riverside Unified School District	IN	School District	Education
San Gorgonio Memorial Healthcare	OUT	Special District	Healthcare
San Jacinto USD	IN	School District	Education
Santa Ana Watershed	IN	Utilities	Water
Val Verde Unified	OUT	School District	Education
Western Municipal Water	IN	Utilities	Water

Participant Contact Information

Local Hazard Mitigation Plan Contacts										
Company	**Last Name**	**First Name**	**Email Address**	**Job Title**	**Business Phone**	**Mobile Phone**	**Fax Number**	**Address**	**City**	**ZIP**
Agua Caliente Band of Cahuilla Indians	Canales	Victoria	vcanales@aguacaliente.net	Emergency Services Coordinator	760.285.9271	760.699.6852		5401 Dinal Shore Dr.	Palm Springs	92264
Beaumont Unified	Evens	Mareesa	mevans@beaumontusd.k12.ca.us	Director of Risk Management	951.797.5366		951.797.6521			
City of Banning	Diaz	Alex	adiaz@ci.banning.ca.us	Chief of Police	951-849-1194	951-840-8563		125 E. Ramsey Street, P.O. Box 998	Banning	92220
City of Beaumont	Keyser	Mark	mkeyser@beaumontpd.org	Lieutenant	951-769-8500	951-529-7878	951.769.8506	660 Orange Avenue	Beaumont	92223
City of Blythe	Thomas	Kelly	KThomas@cityofblythe.ca.gov	Community Service Officer	760-922-6111.2241		760-922-3652	240 N Spring Street	Blythe	92225
City of Calimesa	Monson	Margaret	pworks@cityofcalimesa.net	Interim Public Works Director	(909) 795-9801 ext.235	(951) 538-4748		908 Park Avenue	Calimesa	92320
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City of Canyon Lake	A. Borja	Mark	mborja@cityofcanyonlake.com	Administrative Services Manager	(951)246-2024			31516 Railroad Canyon Road	Canyon Lake	92587
City of Cathedral	Hauser	Eric	ehauser@cathedralcity.gov	Chief	(760) 770-8200			32100 Desert Vista Rd.	Cathedral City	92234
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City of Coachella	R. Torres	George	gtorres@coachella.org	Emergency Services Coordinator		(760) 501-8122	(760) 398-1630	53462 Enterprise Way	Coachella	92236
City of Corona	Moran-McGough	Gina	Gina.Moran-McGough@ci.corona.ca.us	Emergency Services Coordinator	(951) 736-2458	951-415-8071	(951) 270-2737	400 South Vicentia Avenue	Corona	92882
City of Desert Hot Springs	Brooks	Mark	mark.brooks@fire.ca.gov	Battalion Chief	760-343-3510	951-366-9295				
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City of Eastvale	A. Rodriguez	Alia	Arodriguez@eastvaleca.gov	Senior Admin Analyst	951.703.4412		9517034760	12363 Limonite Ave., Suite 910	Eastvale	91752
City of Hemet	Mills	Jennifer	Jmills@cityofhemet.org	Emergency Services Coordinator	9517652451		9517652328	510 East Florida Avenue	Hemet	92543
City of Indian Wells and	Cadden	Eric	Eric.Cadden@rivco.org	Emergency Services Coordinator		760.578.2088	760.863.8882	4210 Riverwalk	Riverside	92505

Palm Desert								Pkwy, Suite 300		
City of Indio	Kelly	Michelle	mkelly@indio.org	Emergency Services Coordinator						
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City of Jurupa Valley	Rollings	Terri	trollings@jurupavalley.org	Assistant to the City Manager	951.332.6464	951.332.6995		8930 Limonite Ave.	Jurupa Valley	92509
City of La Quinta	Johnston	Zander	zjohnston@la-quinta.org	ESC	760.777.7044	7605016221		78495 Calle Tampico	La Quinta	92253
City of Lake Elsinore	DeSantiago	Rick	rdsantiago@lake-elsinore.org	Emergency Services Coordinator	951.674.3124		951.471.1251	130 S. Main Street	lake Elsinore	92530
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City of Moreno Valley	Wilkinson	Steve	stevew@moval.org	Management Analyst	951.486.6788			22870 Calle San Juan De Los Lagos - PO Box 88005	Moreno Valley	92552
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City of Murrieta	Shuck	Ken	kshuck@MurrietaCA.gov.	Fire Marshal	951.461.6158		951.677.6799	41825 Juniper Street	Murrieta	92562
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City of Palm Spring	Lebsock	Anjila	Anjila.lebsock@palmspringsca.gov	Emergency Service Coordinator	760-323-8185		760-778-8430	300 N. El Cielo Road	Palm Springs	92262
City of Perris	Martinez	David	dmartinez@cityofperris.org	Interim Building Official/Fire Marshal	951.443.1029 ext.228		951.943.3293	135 N. D Street	Perris	92570
City of Rancho Mirage	Kopp	Bud	budk@ranchomirageca.gov	Planning Manager	760.328.2266					
	Wilson	Britt	brittw@RanchoMirageCA.gov	Management Analyst	760.324.4511-230		(760) 324-9851	69825 Highway 111	Rancho Mirage	92270
City of Riverside	Annas	Mark	mannas@riversideca.gov	Emergency Operations Coordinator	951-320-8103	951-320-5321	951-320-8102	3085 St. Lawrence Street	Riverside	92504

City of Temecula	Cardenas	Roberto	roberto.cardenas@cityoftemecula.org	Fiscal Services Manager	951-693-3944		951-302-4159	41000 Main Street	Temecula	92590
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	Chapman	Les	lchapman@cityofwildomar.org	Public Works Superintendent	9 51-677-7751.205		951.698.1463	23873 Clinton Keith Rd Ste. 201	Wildomar	92595
Desert Sands USD	Nacua	Edward	edward.nacua@desertsands.us	Director of Security & Safety Services	760.771.8646	760.644.2269	760.771-8713	47950 Dune Palms Dr.	La Quinta	92253
Eastern Munic. Water	Hefley	Doug	hefleyd@emwd.org	Director of Safety, Risk and Emergency Management	951.928.377.4218	951.287.8627		P.O. Box 8300 2270 Trumble Road	Perris	92572
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Hemet Unified School District	Radford	Lyle	lradford@hemetusd.org	Safety and Security Technician	(951)765-5100 -2301			1791 West Acacia Ave	Hemet	92545
High Valley Water	Thornton	Nera	nthornton@highvalleysw ater.com	Office Administrator	951.849.2612		951.922.9667	47781 Twin Pines Rd.	Banning	92220

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Lake Elsinore USD	Scranton	Julie	julie.scranton@leusd.k12 .ca.us	Safety & Risk Services Supervisor	951.253.7181		951.245 .6609	545 Chaney St.	Riverside	92530
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Moreno Valley USD	Evangelist a	Tracy	tevangelista@mvusd.net		951.571.7500. 17565					
Morongo Band of Mission Indians	Ellsworth	David	dellsworth@morongo-nsn.gov	EOC Deputy	951.755.5277	951.768.3311	951.572 .6017	11581 Portrero Road	Banning	92220
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Ramona	Gomez	John	jgomez@ramona-nsn.gov	Project Manager	951.763.4105	951.941.4943		5610 Hwy 371, Ste. B P.O. Box 391670	Anza	92539
Rancho California Water	Morrison	Dave	morrisond@ranchowater.com	Safety Officer	951.296.6949	951.538.4398				
Riverside Community Colleges	W. Simmons	Michael	michael.simmons@rccd.edu	Director, Risk Management, Safety & Police	(951) 222-8128	(951) 206-8605	(951) 328-3502	3801 Market Street, 3rd Floor	Riverside	92501
Riverside County Office of Education	D'Amico	Michael	MDAMICO@rcoe.us	Safety, Emergency Preparedness Coordinator	951-826-6530	951-609-5537		3939 Thirteenth Street	Riverside	92501
Riverside Unified School District	Mueller	Ken	kmueller@rusd.k12.ca.us	Director of Maintenance and Operations	(951)788-7496 ext. 84001			3070 Washington Street	Riverside	92504
San Jacinto USD	Lawrence	Dawn	dlawrence@SanJacinto.k12.ca.us	Prep Coordinator	951.929.7700. 4411	253.249.6282		2045 S. San Jacinto Ave.	San Jacinto	92583
Santa Ana Watershed	Quintero	Carlos	cquintero@sawpa.org	Senior Project Manager	951.354.4234	951.941.7611		11615 Sterling Avenue	Riverside	92503
Western Municipal	McMillien	Tom	tmcmillen@wmwd.com	Safety Officer	951.571.7252			14205 Meridian Parkway	Riverside	92518

Water District										

LETTERS OF COMMITMENT

Cities

City of Banning

City of Beaumont

City of Blythe

City of Calimesa

City of Canyon Lake

City of Cathedral

City of Coachella

City of Corona

City of Desert Hot Springs

City of Eastvale

City of Hemet

City of Indian Wells

City of Indio

City of Jurupa Valley

City of La Quinta

City of Lake Elsinore

City of Murrieta

City of Norco

City of Palm Desert

City of Palm Spring

City of Perris

City of Rancho Mirage

City of Riverside

City of San Jacinto

City of Temecula

City of Wildomar

Tribes

Agua Caliente Band of Cahuilla Indians – DROPPED

Morongo Band of Mission Indians

Ramona Band of Indians

Special Districts

Beaumont Unified

Desert Sands USD

Eastern Municipal Water

Hemet Unified School District

High Valley Water

Idyllwild Fire Protection

Imperial Irrigation District

Kaiser Hospital - Riverside

Lake Elsinore USD

March Air Force Base – DROPPED OUT

Moreno Valley USD

Perris Union HSD

Rancho California Water

Riverside Community Colleges

Riverside County Office of Education

Riverside Unified School District

San Jacinto USD

Santa Ana Watershed

Western Municipal Water

City of Banning
Office of the City Manager

September 27, 2016

Riverside County Emergency Management Department
Kim Saruwatari, Director
4210 Riverwalk Pkwy, Ste. 300
Riverside, CA 92505

Re: Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning

Dear Riverside County Emergency Management Department,

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, the City of Banning is submitting this letter of commitment to confirm that the City of Banning has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning; the City of Banning agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department's to complete the plan in conformance with FEMA requirements.

The City of Banning understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction.
- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.); and

99 E. Ramsey St. • P.O. Box 998 • Banning, CA 92220-0998 • (951) 922-3101 • Fax (951) 922-3128

Letter of Commitment
September 27, 2016
Page 2 of 2

- Documentation of an effective process to maintain and implement the plan; and,
- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I Michael Rock, City Manager, commit the City of Banning to the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Executed this 27th day of September, 2016

Michael Rock, City Manager

CITY OF BEAUMONT

August 2, 2016

PARTICIPATING JURISDICTION

Riverside County Emergency Management Department
Kim Saruwatari, Director
4210 Riverwalk Pkwy, Ste. 300
Riverside, CA 92505

Re: Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning

Dear Riverside County Emergency Management Department,

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, the City of Beaumont is submitting this letter of commitment to confirm that the City of Beaumont has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning; the City of Beaumont agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department's to complete the plan in conformance with FEMA requirements.

The City of Beaumont understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction.
- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.); and
- Documentation of an effective process to maintain and implement the plan; and,
- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

550 E. 6th Street • Beaumont • CA • 92223 • Phone: (951) 769-8520 • Fax: (951) 769-8526
www.ci.beaumont.ca.us

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I Richard Warne, commit the City of Beaumont to the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Executed this 2nd day of August

Interim City Manager

CITY OF BLYTHE

235 North Broadway • Blythe, California 92225
Phone (760) 922-6161 • Fax (760) 922-4938

October 19, 2016

PARTICIPATING JURISDICTION

Riverside County Emergency Management Department
Kim Saruwatari, Director
4210 Riverwalk Pkwy, Ste. 300
Riverside, CA 92505

Re: Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning

Dear Riverside County Emergency Management Department,

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, the City of Blythe is submitting this letter of commitment to confirm that The City of Blythe has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning; The City of Blythe agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department's to complete the plan in conformance with FEMA requirements.

The City of Blythe understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction.
- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.); and
- Documentation of an effective process to maintain and implement the plan; and,

- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I Peter Cosentini, City Manager, commit the City of Blythe to the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Executed this 19th Day of October, 2016

Peter Cosentini, City Manager

CITY OF CALIMESA

908 Park Avenue, Calimesa, California 92320
Telephone 909.795.9801 Facsimile 909.795.4399
www.cityofcalimesa.net

May 1, 2017

Riverside County Emergency Management Department
Kim Saruwatari, Director
4210 Riverwalk Pkwy, Ste. 300
Riverside, CA 92505

Re: Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning

Dear Riverside County Emergency Management Department,

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, the City of Calimesa is submitting this letter of commitment to confirm that the City of Calimesa has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning; the City of Calimesa agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department's to complete the plan in conformance with FEMA requirements.

The City of Calimesa understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction.
- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement

in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.); and

- Documentation of an effective process to maintain and implement the plan; and,
- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I ***Bonnie Johnson, City Manager*** commit the City of Calimesa to the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Executed this 1st day of May, 2017

Bonnie Johnson, City Manager
City of Calimesa

908 Park Avenue • Calimesa, California 92320 • (909) 795-9801

CITY OF CANYON LAKE

June 24, 2016

Riverside County Emergency Management Department
Kim Saruwatari, Director
4210 Riverwalk Pkwy, Ste. 300
Riverside, CA 92505

Re: Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning

Dear Riverside County Emergency Management Department,

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, the City of Canyon Lake is submitting this letter of commitment to confirm that the City of Canyon Lake has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning; the City of Canyon Lake agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department's to complete the plan in conformance with FEMA requirements.

The City of Canyon Lake understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction.
- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process,

31516 Railroad Canyon Road, Canyon Lake, CA 92587 · 951/244-2955 · FAX 951/246-2022
admin@cityofcanyonlake.com · www.cityofcanyonlake.com

CITY OF CANYON LAKE

attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.); and

- Documentation of an effective process to maintain and implement the plan; and,
- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I Aaron Palmer, City Manager, commit the City of Canyon Lake to the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Executed this 24 day of June, 2016

Aaron D Palmer

31516 Railroad Canyon Road, Canyon Lake, CA 92587 · 951/244-2955 · FAX 951/246-2022
admin@cityofcanyonlake.com · www.cityofcanyonlake.com

Cathedral City
Office of the City Manager

June 1, 2016

Riverside County Emergency Management Department
Kim Saruwatari, Director
4210 Riverwalk Pkwy, Ste. 300
Riverside, CA 92505

Re: Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning

Dear Riverside County Emergency Management Department,

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, the City of Cathedral City is submitting this letter of commitment to confirm that the City of Cathedral City has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning; the City of Cathedral City agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department's to complete the plan in conformance with FEMA requirements.

The City of Cathedral City understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction;
- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.);
- Documentation of an effective process to maintain and implement the plan; and

68-700 Avenida Lalo Guerrero • Cathedral City • California • 92234
www.cathedralcity.gov

- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process and as a participant in a multi-jurisdictional plan; I, Charles P. McClendon, City Manager commit the City of Cathedral City to the County of Riverside's Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Executed this 1st day of June, 2016

Charles P. McClendon, City Manager

68-700 Avenida Lalo Guerrero • Cathedral City • California • 92234
www.cathedralcity.gov

CITY OF COACHELLA
1515 SIXTH STREET, COACHELLA, CALIFORNIA 92236
PHONE (760) 398-3502 • FAX (760) 398-8117 • WWW.COACHELLA.ORG

June 13, 2016

PARTICIPATING JURISDICTION

Riverside County Emergency Management Department
Kim Saruwatari, Director
4210 Riverwalk Pkwy, Ste. 300
Riverside, CA 92505

Re: Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning

Dear Riverside County Emergency Management Department,

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, City of Coachella is submitting this letter of commitment to confirm that City of Coachella has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning; City of Coachella agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department's to complete the plan in conformance with FEMA requirements.

City of Coachella understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction.
- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.); and
- Documentation of an effective process to maintain and implement the plan; and,

An Affirmative Action/Equal Opportunity Employer

CITY OF COACHELLA
1515 SIXTH STREET, COACHELLA, CALIFORNIA 92236
PHONE (760) 398-3502 • FAX (760) 398-8117 • WWW.COACHELLA.ORG

- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I George R. Torres Emergency Services Coordinator, commit City of Coachella to the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Executed this 13th day of June 2016

An Affirmative Action/Equal Opportunity Employer

CITY OF CORONA FIRE DEPARTMENT
735 PUBLIC SAFETY WAY • CORONA, CA 92880 • (951) 736-2220 • FAX (951) 736-2497
WWW.DISCOVERCORONA.COM

June 13, 2016

Riverside County Emergency Management Department
Kim Saruwatari, Director
4210 Riverwalk Pkwy, Ste. 300
Riverside, CA 92505

Re: Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning

Dear Riverside County Emergency Management Department,

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, the City of Corona is submitting this letter of commitment to confirm that the City of Corona has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning; the City of Corona agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department's to complete the plan in conformance with FEMA requirements.

The City of Corona understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;

"SERVING OUR CITY WITH PRIDE"

- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction.
- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.); and
- Documentation of an effective process to maintain and implement the plan; and,
- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I David Duffy, Fire Chief commit the City of Corona to the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Executed this 13th day of June 2016.

David Duffy, Fire Chief

"SERVING OUR CITY WITH PRIDE"

City of Desert Hot Springs
65-950 Pierson Blvd.• Desert Hot Springs • CA • 92240
(760) 329-6411
www.cityofdhs.org

June 8, 2016

PARTICIPATING JURISDICTION

Riverside County Emergency Management Department
Kim Saruwatari, Director
4210 Riverwalk Pkwy, Ste. 300
Riverside, CA 92505

Re: Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning

Dear Riverside County Emergency Management Department,

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, the City of Desert Hot Springs is submitting this letter of commitment to confirm that Desert Hot Springs has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning; Desert Hot Springs agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department's to complete the plan in conformance with FEMA requirements.

Desert Hot Springs understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction.
- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.); and
- Documentation of an effective process to maintain and implement the plan; and,
- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I, Martín Magaña, City Manager, commit the City of Desert Hot Springs to the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Executed this 8th day of June, 2016.

City of Eastvale
12363 Limonite Avenue, Suite #910 • Eastvale, CA 91752
(951) 361-0900 • Fax: (951) 361-0888 • www.EastvaleCA.gov

May 31, 2016

Riverside County Emergency Management Department
Kim Saruwatari, Director
4210 Riverwalk Pkwy, Ste. 300
Riverside, CA 92505

Re: Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning

Dear Riverside County Emergency Management Department:

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, the City of Eastvale is submitting this letter of commitment to confirm that the City of Eastvale has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning; the City of Eastvale agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department's to complete the plan in conformance with FEMA requirements.

The City of Eastvale understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction.
- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.);
- Documentation of an effective process to maintain and implement the plan; and,
- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

City of Eastvale
12363 Limonite Avenue, Suite #910 • Eastvale, CA 91752
(951) 361-0900 • Fax: (951) 361-0888 • www.EastvaleCA.gov

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I, *Michele Nissen*, commit the *City of Eastvale* to the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Executed this 31st day of May, 2016

Michele Nissen
City Manager



City of Hemet

445E. FLORIDA AVE • HEMET, CALIFORNIA 92543 • (951)765-2301

From the Office of the
CITY MANAGER
Alexander P. Meyerhoff

June 13, 2016

Riverside County Emergency Management Department
Kim Saruwatari, Director
4210 Riverwalk Pkwy, Ste. 300
Riverside, CA 92505

Re: Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning

Dear Riverside County Emergency Management Department:

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, the City of Hemet is submitting this letter of commitment to confirm that City of Hemet has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning; the City of Hemet agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department's to complete the plan in conformance with FEMA requirements.

The City of Hemet understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction.
- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.); and

- Documentation of an effective process to maintain and implement the plan; and,
- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I, Alexander P. Meyerhoff, commit the City of Hemet to the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Executed this 13th day of June, 2016

Alexander P. Meyerhoff
City Manager

INDIAN WELLS
CALIFORNIA

April 1, 2016

PARTICIPATING JURISDICTION

Riverside County Emergency Management Department
Kim Saruwatari, Director
4210 Riverwalk Pkwy, Ste. 300
Riverside, CA 92505

Re: Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning

Dear Riverside County Emergency Management Department,

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, Indian Wells submitting this letter of commitment to confirm that Indian Wells has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning; Indian Wells agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department's to complete the plan in conformance with FEMA requirements.

Indian Wells understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction.
- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.); and
- Documentation of an effective process to maintain and implement the plan; and,
- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I Eric W. Cadden commit Indian Wells the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Executed this June day of 3rd, 2016.

44-950 Eldorado Drive – Indian Wells, California 92210-7497- (V) 760.2489 (F) 346.0407
www.IndianWells.com

June 1, 2016

Attn: Kim Saruwatari, Director
Riverside County Emergency Management Department
4210 Riverwalk Pkwy, Ste. 300
Riverside, CA 92505

Re: Letter of Commitment of Participating Jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning

Dear Director Saruwatari:

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, the City of Indio is submitting this letter of commitment to confirm that the City of Indio has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning; the City of Indio agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department to complete the plan in conformance with FEMA requirements.

The City of Indio understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction.

p: 760.391.4000 · f: 760.391.4008 · 100 Civic Center Mall Indio, CA 92201 · www.INDIO.org

- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.); and
- Documentation of an effective process to maintain and implement the plan; and,
- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I *Dan Martinez*, commit the City of Indio to the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Sincerely,

DAN MARTINEZ
City Manager, City of Indio

Executed this 1st day of June, 2016

p: 760.391.4000 · f: 760.391.4008 · 100 Civic Center Mall Indio, CA 92201 · www.INDIO.org

City of Jurupa Valley

Laura Roughton, Mayor . Verne Lauritzen, Mayor Pro Tem .
Brian Berkson, Council Member . Frank Johnston, Council Member . Brad Hancock, Council Member

June 8, 2016

City of Jurupa Valley

Riverside County Emergency Management Department
Kim Saruwatari, Director
4210 Riverwalk Pkwy, Ste. 300
Riverside, CA 92505

Re: Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning

Dear Riverside County Emergency Management Department,

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, the City of Jurupa Valley is submitting this letter of commitment to confirm that Jurupa Valley has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning, the City of Jurupa Valley agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department's to complete the plan in conformance with FEMA requirements.

The City of Jurupa Valley understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction.
- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.); and
- Documentation of an effective process to maintain and implement the plan; and,
- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

8930 Limonite Ave., Jurupa Valley, CA 92509-5183, (951) 332-6464
www.jurupavalley.org

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I Gary Thompson, City Manager, commit the City of Jurupa Valley to the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Executed this 8th day of June, 2016

Gary S. Thompson, City Manager

8304 Limonite Avenue, Suite M, Jurupa Valley, CA 92509-5183, (951) 332-6464
www.jurupavalley.org

City of La Quinta

June 9, 2016

Ms. Kim Saruwatari, Director
Riverside County Emergency Management Department
4210 Riverwalk Pkwy, Ste. 300
Riverside, CA 92505

Re: Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning

Dear Ms. Saruwatari:

Per the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements for multi-jurisdictional mitigation plans, the City of La Quinta is submitting this letter of commitment to confirm that the City has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning, the City agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County to complete the plan in conformance with FEMA requirements.

The City understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

- Identify hazards unique to the jurisdiction and not addressed in the master planning document;
- Conduct a vulnerability analysis and identify of risks, where they differ from the general planning area;
- Formulate mitigation goals responsive to public input and develop mitigation actions complementary to those goals. A range of actions will be identified specific for each jurisdiction;
- Demonstrate that there has been proactive participation in the planning process by all community stakeholders.
- Document an effective process to maintain and implement the plan;
- Adopt the Multi-Jurisdictional Hazard Mitigation Plan.

Please do not hesitate to contact me with questions or concerns.

Sincerely,

Frank J. Spevasek
City Manager

78-495 Calle Tampico | La Quinta | California 92253 | 760.777.7000 | www.La-Quinta.org

CITY OF LAKE ELSINORE
DREAM EXTREME

June 8, 2016

PARTICIPATING JURISDICTION

Riverside County Emergency Management Department
Kim Saruwatari, Director
4210 Riverwalk Pkwy, Ste. 300
Riverside, CA 92505

Re: Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning

Dear Riverside County Emergency Management Department,

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, the City of Lake Elsinore is submitting this letter of commitment to confirm that City of Lake Elsinore has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning; City of Lake Elsinore agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department's to complete the plan in conformance with FEMA requirements.

City of Lake Elsinore understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction.

951.674.3124
130 S. Main Street
Lake Elsinore, CA 92530
www.lake-elsinore.org

- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.); and

- Documentation of an effective process to maintain and implement the plan; and,

- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I Grant Yates, City Manager, commit City of Lake Elsinore to the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Executed this 8th day of June, 2016

Grant Yates, City Manager

CITY OF MURRIETA

June 16, 2016

PARTICIPATING JURISDICTION

Riverside County Emergency Management Department
Kim Saruwatari, Director
4210 Riverwalk Pkwy, Ste. 300
Riverside, CA 92505

Re: Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning

Dear Riverside County Emergency Management Department,

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, the Murrieta Fire Department is submitting this letter of commitment to confirm that Murrieta Fire Department has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning; Murrieta Fire Department agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department's to complete the plan in conformance with FEMA requirements.

Murrieta Fire Department understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction.
- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.); and

FIRE DEPARTMENT • 41825 Juniper Street • Murrieta, California 92562
phone: 951.304.FIRE (3473) • fax: 951.677.6799 • web: murrieta.org

- Documentation of an effective process to maintain and implement the plan; and,
- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I Jason Briley commit the Murrieta Fire Department to the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Executed June 16, 2016

6/16/16

Jason Briley, Fire Marshal
City of Murrieta Fire Department

CITY of NORCO

CITY HALL • 2870 CLARK AVENUE • NORCO CA 92860 • (951) 735-3900 • www.norco.ca.us •

June 13, 2016

Riverside County Emergency Management Department
Kim Saruwatari, Director
4210 Riverwalk Pkwy, Ste. 300
Riverside, CA 92505

Re: Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning

Dear Director Saruwatari,

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, the City of Norco is submitting this letter of commitment to confirm that the city has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning; the City agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department's to complete the plan in conformance with FEMA requirements.

The City of Norco understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document.
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area.
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction.
- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.).
- Documentation of an effective process to maintain and implement the plan.
- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

CITY COUNCIL

KEVIN BASH	GREG NEWTON	ROBIN GRUNDMEYER	BERWIN HANNA	TED HOFFMAN
Mayor	Mayor Pro Tem	Council Member	Council Member	Council Member

Riverside County Operational Area Multi-Jurisdictional
Hazard Mitigation Planning
Page 2
June 13, 2016

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I, Andy Okoro commit the City of Norco to the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Executed this 13th day of June 2016

Andy Okoro, City Manager
City of Norco

Attest:

Cheryl L. Link, City Clerk
City of Norco

City of Palm Springs
David H. Ready, Esq., Ph.D.
City Manager
3200 E. Tahquitz Canyon Way, Palm Springs, CA 92262
Tel 760.322.8350 • Fax 760.323.8207 • TDD 760.864.9527
David.Ready@palmspringsca.gov • www.palmspingsca.gov

June 1, 2016

Riverside County Emergency Management Department
Kim Saruwatari, Director
4210 Riverwalk Pkwy, Ste. 300
Riverside, CA 92505

Re: Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning

Dear Riverside County Emergency Management Department:

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, the City of Palm Springs is submitting this letter of commitment to confirm that the City of Palm Springs has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning, the City of Palm Springs agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department to complete the plan in conformance with FEMA requirements.

The City of Palm Springs understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction;
- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.);
- Documentation of an effective process to maintain and implement the plan; and,

PO Box 2743, Palm Springs, California 92263

Page Two
June 1, 2016
Riverside County Emergency Management

- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan, I, David H. Ready, Esq., Ph.D., commit the City of Palm Springs to the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Executed this 13 day of JUNE 2016

David H. Ready, Esq., Ph.D.

CITY OF PERRIS
DEPARTMENT OF DEVELOPMENT SERVICES
Building and Safety Division
135 N. 'D' STREET, PERRIS, CA 92570-2200
TEL.: (951) 943-1029 FAX: (951) 657-9685

June 13, 2016

RE: City of Perris letter of commitment

Riverside County Emergency Management Department
Kim Saruwatari, Director
4210 Riverwalk Pkwy, Ste. 300
Riverside, CA 92505

Re: Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning

Dear Riverside County Emergency Management Department,

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, the City of Perris is submitting this letter of commitment to confirm that the City of Perris has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning; the City of Perris agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department's to complete the plan in conformance with FEMA requirements.

The City of Perris understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction.
- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any

planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.); and

- Documentation of an effective process to maintain and implement the plan; and,
- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I Clara Miramontes, commit the City of Perris to the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Executed this 13th day of June 2016

Sincerely

Clara Miramontes
Development Services Director
City of Perris

CITY OF RANCHO MIRAGE

July 14, 2016

Riverside County Emergency Management Department
Kim Saruwatari, Director
4210 Riverwalk Pkwy, Ste. 300
Riverside, CA 92505

Re: Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning

Dear Riverside County Emergency Management Department,

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, the City of Rancho Mirage is submitting this letter of commitment to confirm that the City of Rancho Mirage has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning; the City of Rancho Mirage agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department's to complete the plan in conformance with FEMA requirements.

The City of Rancho Mirage understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction.
- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.); and
- Documentation of an effective process to maintain and implement the plan; and,
- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I Britt W. Wilson commit the City of Rancho Mirage to the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Executed this 14th day of July 2016

Britt W. Wilson
Emergency Services Coordinator, City of Rancho Mirage
Brittw@ranchomirageca.gov
760-324-4511

c. Bud Kopp, City of Rancho Mirage Planning Manager

ADMINISTRATION	DEVELOPMENT SERVICES	FINANCE	HOUSING	PUBLIC LIBRARY	PUBLIC WORKS
Tel. 1.760.324.4511	Tel. 1.760.324.4511	Tel. 1.760.770.3207	Tel. 1.760.770.3210	Tel. 1.760.341.7323	Tel. 1.760.770.3224
Fax. 1.760.324.8830	Fax. 1.760.202.4792	Fax. 1.760.324.0528	Fax. 1.760.324.1617	Fax. 1.760.341.5213	Fax. 1.760.770.3261

69-825 HIGHWAY 111 / RANCHO MIRAGE, CA 92270
www.RanchoMirageCA.gov www.RelaxRanchoMirage.com

Fire Department

City of Arts & Innovation

June 15, 2016

PARTICIPATING JURISDICTION

Riverside County Emergency Management Department
Kim Saruwatari, Director
4210 Riverwalk Pkwy, Ste. 300
Riverside, CA 92505

Re: Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning

Dear Riverside County Emergency Management Department,

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, the Riverside Fire Department – Office of Emergency Management is submitting this letter of commitment to confirm that the Riverside Fire Department – Office of Emergency Management has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning; the Riverside Fire Department – Office of Emergency Management agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department's to complete the plan in conformance with FEMA requirements.

City of Riverside understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction.
- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.); and
- Documentation of an effective process to maintain and implement the plan; and,

Office of Emergency Management
3085 St Lawrence Street, Riverside, CA 92504 | **Phone:** (951) 320-8100 | **RiversideCA.gov/Fire**

- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I Mark Annas, Emergency Operations Coordinator, commit Riverside Fire Department – Office of Emergency Management to the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Executed this 15 day of June, 2016

Mark D. Annas
Emergency Operations Coordinator
Riverside Fire Department
Office of Emergency Management

SAN JACINTO

Scott Miller
Mayor

Alonso Ledezma
Mayor Pro Tem

Crystal Ruiz
Councilmember

Andrew Kotyuk
Councilmember

Russ Utz
Councilmember

May 16, 2017

Riverside County Emergency Management Department
Kim Saruwatari, Director
4210 Riverwalk Pkwy, Ste. 300
Riverside, CA 92505

Re: Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning

Dear Riverside County Emergency Management Department,

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, the City of San Jacinto is submitting this letter of commitment to confirm that the City of San Jacinto has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning; The City of San Jacinto agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department's to complete the plan in conformance with FEMA requirements.

The City of San Jacinto understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction.
- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.); and
- Documentation of an effective process to maintain and implement the plan; and,
- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I, Robert Johnson, commit the City of San Jacinto to the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Executed this 5/16 day of 2017

Robert A. Johnson
City Manager

595 S. San Jacinto Ave. | San Jacinto, CA 92583 | Ph 951-487-7330 | Fax 951-654-3728 | www.ci.san-jacinto.ca.us

City of Temecula
City Manager's Office
41000 Main Street • Temecula, CA 92590
Phone (951) 506-5100 • Fax (951) 694-6499 • www.cityoftemecula.org

June 9, 2016

PARTICIPATING JURISDICTION

Riverside County Emergency Management Department
Kim Saruwatari, Director
4210 Riverwalk Pkwy, Ste. 300
Riverside, CA 92505

Re: Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning

Dear Riverside County Emergency Management Department,

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, the City of Temecula is submitting this letter of commitment to confirm that the City of Temecula has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning; the City of Temecula agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department's to complete the plan in conformance with FEMA requirements.

The City of Temecula understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction.
- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.); and

- Documentation of an effective process to maintain and implement the plan; and,
- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I *Aaron Adams*, commit the City of Temecula to the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Executed this 9 day of June 2016.

X _____
Aaron Adams, City Manager

Bridgette Moore, Mayor
Timothy Walker, Mayor Pro Tem
Ben Benoit, Council Member
Bob Cashman, Council Member
Marsha Swanson, Council Member

23873 Clinton Keith Rd, Ste 201
Wildomar, CA 92595
951/677-7751 Phone
951/698-1463 Fax
www.CityofWildomar.org

June 13, 2016

CITY OF WILDOMAR

Riverside County Emergency Management Department
Kim Saruwatari, Director
4210 Riverwalk Pkwy, Ste. 300
Riverside, CA 92505

Re: Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning

Dear Riverside County Emergency Management Department,

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level. The City of Wildomar is submitting this letter of commitment to confirm that City of Wildomar has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning; City of Wildomar agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department's to complete the plan in conformance with FEMA requirements.

City of Wildomar understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction.
- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.); and
- Documentation of an effective process to maintain and implement the plan; and,
- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I, Dan York, Assist City Manager, commits City of Wildomar to the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Executed this 13th day of June 2016

Dan York
Assistant City Manager
City of Wildomar

DROPPED OUT

AGUA CALIENTE BAND OF CAHUILLA INDIANS

EMERGENCY SERVICES & RISK MANAGEMENT

June 13, 2016

PARTICIPATING JURISDICTION

Riverside County Emergency Management Department
Kim Saruwatari, Director
4210 Riverwalk Pkwy, Ste. 300
Riverside, CA 92505

Re: Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning

Dear Riverside County Emergency Management Department,

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, the Agua Caliente Band of Cahuilla Indians is submitting this letter of commitment to confirm that the Agua Caliente Band of Cahuilla Indians has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning; the Agua Caliente Band of Cahuilla Indians agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department's to complete the plan in conformance with FEMA requirements.

The Agua Caliente Band of Cahuilla Indians understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction.
- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.); and
- Documentation of an effective process to maintain and implement the plan; and,
- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

5401 DINAH SHORE DRIVE, PALM SPRINGS, CA 92264
WWW.AGUACALIENTE-NSN.GOV

AGUA CALIENTE BAND OF CAHUILLA INDIANS

EMERGENCY SERVICES & RISK MANAGEMENT

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I *John Lavallee* commit *Agua Caliente Band of Cahuilla Indians* to the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Executed this 13 day of June

5401 DINAH SHORE DRIVE, PALM SPRINGS, CA 92264
WWW.AGUACALIENTE-NSN.GOV

MORONGO BAND OF MISSION INDIANS
A SOVEREIGN NATION

Morongo Band of Mission Indians

June 2, 2016
Riverside County Emergency Management Department
Kim Saruwatari, Director
4210 Riverwalk Pkwy, Ste. 300
Riverside, CA 92505

Re: Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning

Dear Riverside County Emergency Management Department,

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, the Morongo Band of Mission Indians is submitting this letter of commitment to confirm that Morongo Band Of Mission Indians has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning; [Morongo Band Of Mission Indians agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department's to complete the plan in conformance with FEMA requirements.

[Morongo Band of Mission Indians] understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction.
- Demonstration that there has been proactive participation in the planning process by all community stakeholders (Examples of participation include relevant involvement in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.); and

- Documentation of an effective process to maintain and implement the plan; and,
- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I G. Michael Milhiser, commit Morongo Band of Mission Indians to the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Executed this 3 day of 2016.

DROPPED OUT

RAMONA BAND OF CAHUILLA

56310 Highway 371, Suite B
Post Office Box 391670
Anza, California 92539

Tel: (951) 763-4105
Fax: (951) 763-4325
Website: www.ramona-nsn.gov
Email: admin@ramona-nsn.gov

"A SOVEREIGN NATION"

August 23, 2016

Riverside County Emergency Management Department
Kim Saruwatari, Director
4210 Riverwalk Pkwy, Ste. 300
Riverside, CA 92505

Re: Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning

Dear Riverside County Emergency Management Department,

The Ramona Band of Cahuilla ("Band"), a federally recognized tribe, is submitting this letter of commitment to confirm that the Band has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

The Federal Emergency Management Agency's ("FEMA") Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans, and the Band's participation will allow for a more comprehensive evaluation of hazards and proposed mitigation measures through the coordination at the county, regional, or watershed level.

The Band agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department's to complete the plan in conformance with FEMA requirements.

The Band understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction.
- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.); and

- Documentation of an effective process to maintain and implement the plan; and,
- Formal adoption of the Band's Multi-Jurisdictional Hazard Mitigation Plan by the Band's governing body.

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I, Joseph D. Hamilton, Chairman, commit the Ramona Band of Cahuilla to participation in the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Please feel free to contact the Band's administrative offices at (951)763-4105 if you have any questions or wish to discuss this matter further.

Respectfully,

Joseph D. Hamilton
Chairman, Ramona Band of Cahuilla

QUALITY EDUCATION
A Shared Commitment

BEAUMONT UNIFIED SCHOOL DISTRICT

BOARD OF TRUSTEES

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ADMINISTRATION

Dr. Maureen E. Latham, District Superintendent | Mr. Terrence Davis, Assistant Superintendent Human Resources | Dr. Christine Geonnier, Assistant Superintendent Instructional Support Services | Mr. Carol Stevens, Assistant Superintendent Business Services

June 15, 2016

PARTICIPATING JURISDICTION

Riverside County Emergency Management Department
Kim Saruwatari, Director
4210 Riverwalk Pkwy, Ste. 300
Riverside, CA 92505

Re: Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning

Dear Riverside County Emergency Management Department,

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, Beaumont Unified School District is submitting this letter of commitment to confirm that Beaumont Unified School District has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning; Beaumont Unified School District agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department's to complete the plan in conformance with FEMA requirements.

Beaumont Unified School District understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction.
- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.); and
- Documentation of an effective process to maintain and implement the plan; and,
- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

350 W. Brookside Avenue • PO Box 187 • Beaumont • California • 92223-0187 • Tele: (951) 845-1631

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I *Terrence Davis*, commit *Beaumont Unified School District* to the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Executed this 13th day of July, 2016

(Jurisdiction official's signature)

350 W. Brookside Avenue • PO Box 187 • Beaumont • California • 92223-0187 • Tele: (951) 845-1631

Desert Sands Unified School District
47-950 Dune Palms Road • La Quinta, California 92253 • (760) 777-8567 • FAX: (760) 771-8574
BOARD OF EDUCATION: Michael Duran, Donald B. Griffith, Wendy Jonathan, Matteo Monica III, Gary Tomak
SUPERINTENDENT: Dr. Gary Rutherford
Security Services • (760) 771-8646 • FAX: (760) 771-8713
Jeff Kaye, Director of Security & Safety Services

June 14, 2016

Desert Sands Unified School District

Riverside County Emergency Management Department
Kim Saruwatari, Director
4210 Riverwalk Pkwy, Ste. 300
Riverside, CA 92505

Re: Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning

Dear Riverside County Emergency Management Department,

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, the Desert Sands Unified School District is submitting this letter of commitment to confirm that The Desert Sands Unified School District has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning; The Desert Sands Unified School District agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department's to complete the plan in conformance with FEMA requirements.

The Desert Sands Unified School District understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction.

- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.); and
- Documentation of an effective process to maintain and implement the plan; and,
- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I Jeff Kaye, Director of Security and Safety, commit the Desert Sands Unified School District to the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Executed this 14 day of June 2016

Jeff Kaye



Director of Security and Safety Services
Desert Sands Unified School District

June 13, 2016

Riverside County Emergency Management Department
Kim Saruwatari, Director
4210 Riverwalk Pkwy, Ste. 300
Riverside, CA 92505

Subject: Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning

Dear Riverside County Emergency Management Department:

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, the Eastern Municipal Water District is submitting this letter of commitment to confirm that Eastern Municipal Water District has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning; Eastern Municipal Water District agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department's to complete the plan in conformance with FEMA requirements.

Eastern Municipal Water District understands that it must engage in the following planning process, as described in FEMA's Local Multi-Hazard Mitigation Planning Guidance dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;

Board of Directors
Randy A. Record, President David J. Slawson, Vice President Joseph J. Kuebler, CPA, Treasurer Philip E. Paule Ronald W. Sullivan

2270 Trumble Road • P.O. Box 8300 • Perris, CA 92572-8300
T 951.928.3777 • F 951.928.6177 emwd.org

- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction.
- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.); and
- Documentation of an effective process to maintain and implement the plan; and,
- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I, Douglas Hefley, commit Eastern Municipal Water District to the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Executed this 13th day of June, 2016.

Sincerely,

Douglas Hefley
Director of Safety, Risk and Emergency Management

DH:sr

EASTERN MUNICIPAL WATER DISTRICT

Dr. Barry L. Kayrell
Superintendent

Dr. LaFaye Platter
Deputy Superintendent
Dr. David Horton
Assistant Superintendent
Vince Christakos
Assistant Superintendent

Professional Development
Service Center
1791 W. Acacia Avenue
Hemet, CA 92545
(951) 765-5100
Fax: (951) 765-5115

Professional Development
Academy
2085 W. Acacia Avenue
Hemet, CA 92545
(951) 765-5100
Fax: (951) 765-6421

www.hemetusd.org

Governing Board
Marilyn Forst
Megan Haley
Vic Scavarda
Patrick Searl
James Smith
Ross Valenzuela
Joe Wojcik

Hemet Unified School District
Lucy M. Dressel, Director of Safety/Risk Management/Benefits
1791 West Acacia Avenue
Hemet, CA 92545

May 26th, 2016

Hemet Unified School District

Riverside County Emergency Management Department
Kim Saruwatari, Director
4210 Riverwalk Pkwy, Ste. 300
Riverside, CA 92505

Re: Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning

Dear Riverside County Emergency Management Department,

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, Hemet Unified School District is submitting this letter of commitment to confirm that Hemet Unified School District has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning; Hemet Unified School District agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department's to complete the plan in conformance with FEMA requirements.

Hemet Unified School District understands that it must engage in the following planning process, as described in FEMA's Local Multi-Hazard Mitigation Planning Guidance dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction.
- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant

involvement in any planning process, attending meetings, contributing research, data, or other information. commenting on drafts of the plan, etc.); and

- Documentation of an effective process to maintain and implement the plan; and,
- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I, Lucy M. Dressel, commit Hemet Unified School District to the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Executed this 26th day of May 2016

Lucy M. Dressel, Director of Safety/Risk Management/Benefits

Dr. Barry L. Kayrell
Superintendent

Dr. LaFaye Platter
Deputy Superintendent
Dr. David Horton
Assistant Superintendent
Vince Christakos
Assistant Superintendent

Professional Development
Service Center
1791 W. Acacia Avenue
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(951) 765-5100
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Professional Development
Academy
2085 W. Acacia Avenue
Hemet, CA 92545
(951) 765 5100
Fax (951) 765 6421

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Governing Board
Marilyn Forst
Megan Haley
Vic Scavarda
Patrick Searl
James Smith
Ross Valenzuela
Joe Wojcik

June 8, 2016

PARTICIPATING JURISDICTION

Riverside County Emergency Management Department
Kim Saruwatari, Director
4210 Riverwalk Pkwy, Ste. 300
Riverside, CA 92505

Re: Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning

Dear Riverside County Emergency Management Department,

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, the High Valleys Water District is submitting this letter of commitment to confirm that the High Valleys Water District has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning; the High Valleys Water District agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department's to complete the plan in conformance with FEMA requirements.

The High Valleys Water District understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction.
- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.); and
- Documentation of an effective process to maintain and implement the plan; and,
- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I, Ernest B. Wright, commit the High Valleys Water District to the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Executed this 8th day of June, 2016

Ernest B Wright

Ernest B. Wright

Idyllwild Fire Protection District
PO Box 656
Idyllwild, CA 92549
(951) 659-2153

Thursday, June 09, 2016

Riverside County Emergency Management Department
Kim Saruwatari, Director
4210 Riverwalk Pkwy, Ste. 300
Riverside, CA 92505

Re: Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning

Dear Riverside County Emergency Management Department,

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, the Idyllwild Fire Protection District (IFPD) is submitting this letter of commitment to confirm that the IFPD has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning; the IFPD agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department's to complete the plan in conformance with FEMA requirements.

The IFPD understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction.
- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process, attending meetings,

Page 1 of 2

contributing research, data, or other information, commenting on drafts of the plan, etc.); and

- Documentation of an effective process to maintain and implement the plan; and,
- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I, Patrick Reitz, Fire Chief, commit the Idyllwild Fire Protection District to the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Executed this 9th day of June, 2016.

Patrick Reitz
Fire Chief

IID

www.iid.com

A century of service.

June 8, 2016

PARTICIPATING JURISDICTION

Riverside County Emergency Management Department
Kim Saruwatari, Director
4210 Riverwalk Pkwy, Ste. 300
Riverside, CA 92505

Re: Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning

Dear Riverside County Emergency Management Department,

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, the Imperial Irrigation District is submitting this letter of commitment to confirm that Imperial Irrigation District has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning; Imperial Irrigation District agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department's to complete the plan in conformance with FEMA requirements.

Imperial Irrigation District understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

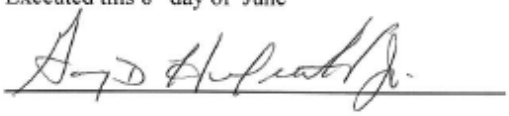
- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction.
- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.); and
- Documentation of an effective process to maintain and implement the plan; and,

IMPERIAL IRRIGATION DISTRICT · OPERATING HEADQUARTERS · P.O. BOX 937 · IMPERIAL, CA 92251

- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I Gary D. Hatfield, Jr , commit Imperial Irrigation District to the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Executed this 8th day of June



KAISER PERMANENTE
Riverside Service Area
10800 Magnolia Ave.
Riverside, CA. 92505

August 3, 2016

Riverside County Emergency Management Department
Kim Saruwatari, Director
4210 Riverwalk Pkwy, Ste. 300
Riverside, CA 92505

Re: Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning

Dear Riverside County Emergency Management Department,

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, Kaiser Permanente Riverside Service Area is submitting this letter of commitment to confirm that Kaiser Permanente Riverside Service Area has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning; Kaiser Permanente Riverside Service Area agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department's to complete the plan in conformance with FEMA requirements.

Kaiser Permanente Riverside Service Area understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction.
- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.); and
- Documentation of an effective process to maintain and implement the plan; and,
- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

KAISER PERMANENTE
Riverside Service Area
10800 Magnolia Ave.
Riverside, CA. 92505

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I, Corrie Sankey, commit Kaiser Permanente Riverside Service Area to the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Executed this 2 day of August, 2016

Corrie Sankey
Director, Environmental Health and Safety
Emergency Management

Lake Elsinore Unified School District

June 8, 2016

Riverside County Emergency Management Department
Kim Saruwatari, Director
4210 Riverwalk Pkwy, Ste. 300
Riverside, CA 92505

Re: Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning

Dear Riverside County Emergency Management Department,

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, the Lake Elsinore Unified School District (LEUSD) is submitting this letter of commitment to confirm that LEUSD has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning; LEUSD agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department's to complete the plan in conformance with FEMA requirements.

LEUSD understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction.
- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.); and

Governing Board

Stan Crippen
Trustee Area 1

Susan E. Scott
Trustee Area 2

Heidi Matthies Dodd
Trustee Area 3

Juan Saucedo
Trustee Area 4

Harold E. Stryker
Trustee Area 5

Administration

Dr. Doug Kimberly
Superintendent

Dr. George Landon
Deputy Superintendent Administrative & Fiscal Support Services

Dr. Gregory J. Bowers
Assistant Superintendent Facilities & Operations Support Services

Dr. Alain Guevara
Assistant Superintendent Administrative & Educational Support Services

Dr. Kip Meyer
Assistant Superintendent Personnel Support Services

Sam Wensel
Executive Director Personnel Support Services

(951) 253-7000

545 Chaney Street
Lake Elsinore, CA 92530

www.leusd.k12.ca.us

- Documentation of an effective process to maintain and implement the plan; and,
- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I Dr. Gregory J. Bowers, commit Lake Elsinore Unified School District to the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Executed this 8th day of June 2016

Dr, Gregory J. Bowers, Assistant Superintendent
Facilities & Operations Division

DROPPED OUT

DEPARTMENT OF THE AIR FORCE

AIR FORCE RESERVE COMMAND

13 June 2016

Riverside County Emergency Management Department

Kim Saruwatari, Director

4210 Riverwalk Pkwy, Ste. 300

Riverside, CA 92505

Re: Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning

Dear Riverside County Emergency Management Department,

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, March ARB is submitting this letter of commitment to confirm that March ARB has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning; March ARB agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department's to complete the plan in conformance with FEMA requirements.

March ARB understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;

- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction.
- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.); and
- Documentation of an effective process to maintain and implement the plan; and,
- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I Marvin J. Tucker, commit March ARB to the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

MARVIN J. TUCKER, GS-11, DAF

Chief, Emergency Management

Board of Education
Jesús M. Holguín, President
Denise Fleming, Ed.D., Vice President
Cleveland Johnson, Clerk
Gary E. Baugh, Ed.S.
Patrick W. Kelleher

Superintendent of Schools
Judy D. White, Ed.D.

Moreno Valley Unified School District
25634 Alessandro Boulevard
Moreno Valley, California 92553
951-571-7500
www.mvusd.net

The mission of Moreno Valley Unified School District is to ensure all students graduate high school prepared to successfully enter into higher education and/or pursue a viable career path.

Dear Riverside County Emergency Management Department,

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, the Moreno Valley Unified School District is submitting this letter of commitment to confirm that Moreno Valley Unified School District has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning; Moreno Valley Unified School District agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department's to complete the plan in conformance with FEMA requirements.

Moreno Valley Unified School District understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction.
- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.); and
- Documentation of an effective process to maintain and implement the plan; and,
- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I *Darryl Scott*, commit *Moreno Valley Unified School District* to the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Executed this 14 day of June

Signature of Director of Safety and Security, Darryl Scott

PERRIS UNION
HIGH SCHOOL DISTRICT
155 E. Fourth Street, Perris, CA 92570
951-943-6369
puhsd.org @puhsd PerrisUnionHSD

Superintendent: Jonathan L. Greenberg, Ed.D.

Grant Bennett
Assistant Superintendent
Educational Services

Candace Reines
Assistant Superintendent
Business Services

Tonya Davis
Chief Human
Resources Officer

Joseph Williams
Executive Director
Technology

April 1, 2016

PARTICIPATING JURISDICTION

Riverside County Emergency Management Department
Kim Saruwatari, Director
4210 Riverwalk Pkwy, Ste. 300
Riverside, CA 92505

Re: Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning

Dear Riverside County Emergency Management Department,

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, Perris Union High School District is submitting this letter of commitment to confirm that Perris Union High School District has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning; Perris Union High School District agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department's to complete the plan in conformance with FEMA requirements.

Perris Union High School District understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

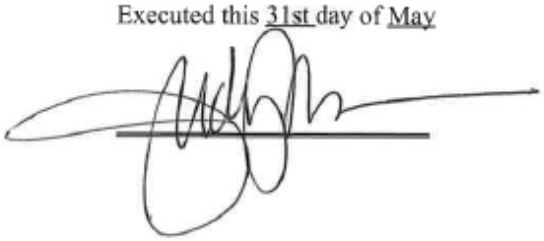
- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction.

Board of Trustees: Edward Agundez - Dr. Jose Luis Araux - Joan D. Cooley - David C. Nelissen - Carolyn A. Twyman

- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.); and
- Documentation of an effective process to maintain and implement the plan; and,
- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I *Judy Miller, Director of Risk Management and Environmental Safety* , commit Perris Union High School District to the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Executed this 31st day of May



Board of Trustees: Edward Agundez - Dr. Jose Luis Araux - Joan D. Cooley - David G. Nelissen - Carolyn A. Twyman

Rancho Water

June 30, 2016

RIVERSIDE COUNTY EMERGENCY MANAGEMENT DEPARTMENT
Ms. Kim Saruwatari, Director
4210 Riverwalk Pkwy, Ste. 300
Riverside, CA 92505

SUBJECT: LETTER OF COMMITMENT AS PARTICIPATING JURISDICTION IN RIVERSIDE COUNTY OPERATIONAL AREA MULTI-JURISDICTIONAL HAZARD MITIGATION PLANNING

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Director of Administration

Rich Ottolini, R.E.H.S., MSL
Interim Director of Operations
& Maintenance

Andrew L. Webster, P.E.
Chief Engineer

Kelli E. Garcia
District Secretary

James B. Gilpin
Best Best & Krieger LLP
General Counsel

Dear Ms. Saruwatari:

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, the Rancho California Water District (RCWD/District) is submitting this letter of commitment to confirm that RCWD has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning; RCWD agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department's to complete the plan in conformance with FEMA requirements.

The District understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction.
- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.); and

Rancho California Water District
42135 Winchester Road • Post Office Box 9017 • Temecula, California 92589-9017 • (951) 296-6900 • FAX (951) 296-6860 • www.ranchowater.com

- Documentation of an effective process to maintain and implement the plan; and,
- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I *Dave Morrison Safety Officer*, commit *Rancho California Water District* to the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Executed this 30th day of June

Should you have any questions regarding this matter, please contact me at the District office at (951) 296-6900.

Sincerely,

RANCHO CALIFORNIA WATER DISTRICT

Dave Morrison
Safety Officer

090\DT

Rancho California Water District
42135 Winchester Road • Post Office Box 9017 • Temecula, California 92589-9017 • (951) 296-6900 • FAX (951) 296-6860 • www.ranchowater.com

RCCD | RIVERSIDE COMMUNITY COLLEGE DISTRICT
OFFICE OF THE CHANCELLOR
MORENO VALLEY COLLEGE | NORCO COLLEGE | RIVERSIDE CITY COLLEGE

June 1, 2016

PARTICIPATING JURISDICTION

Riverside County Emergency Management Department
Kim Saruwatari, Director
4210 Riverwalk Pkwy, Ste. 300
Riverside, CA 92505

Re: Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning

Dear Riverside County Emergency Management Department,

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, the Riverside Community College District is submitting this letter of commitment to confirm that Riverside Community College District has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning; The Riverside Community College District agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department's to complete the plan in conformance with FEMA requirements.

The Riverside Community College District understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction.

3801 Market Street
Riverside, CA 92501
(951) 222-8800
Fax (951) 682-5339
www.rccd.edu

Riverside County Emergency Management Department
June 1, 2016
Page 2

- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.); and
- Documentation of an effective process to maintain and implement the plan; and,
- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I *Michael L Burke, Ph.D.*, commit *Riverside Community College District* to the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Executed this 1st day of June

Michael L. Burke

Michael L. Burke, Ph.D.

RIVERSIDE COUNTY
OFFICE OF EDUCATION
KENNETH M. YOUNG
Riverside County Superintendent of Schools

3939 Thirteenth Street
P.O. Box 868
Riverside, California
92502-0868
(951) 826-6530

47-110 Calhoun Street
Indio, California
92201-4779
(760) 863-3000

24980 Las Brisas Road
Murrieta, California
92562-4008
(951) 600-5651

Riverside County Board of Education

Jeanie B. Corral
Bruce N. Dennis
Jay N. Hoffman, Ed.D.
Susan J. Rainey, Ed.D.
Elizabeth F. Romero
Wendel W. Tucker, Ph.D.
Ralph R. Villani, Ed.D.

May 26, 2016

Riverside County Emergency Management Department
Kim Saruwatari, Director
4210 Riverwalk Pkwy., Ste. 300
Riverside, CA 92505

Re: **Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning**

Dear Riverside County Emergency Management Department:

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level. The Riverside County Office of Education is submitting this letter of commitment to confirm that Riverside County Office of Education has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning; Riverside County Office of Education agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department's to complete the plan in conformance with FEMA requirements.

Riverside County Office of Education understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;

Riverside County Emergency Management Department
May 26, 2016
Page 2

- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction.
- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.); and,
- Documentation of an effective process to maintain and implement the plan; and,
- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I, Teresa Hyden, Chief Business Official, commit Riverside County Office of Education to the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Executed this 1st day of June, 2016

Teresa Hyden
Chief Business Official
Division of Administration and Business Services
(951) 826-6790 / FAX [951] 826-6974

MD:amn
c: Michael D'Amico, Coordinator, Safety and Emergency Preparedness

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Mr. Brent Lee
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Dr. I. Angelov Farooq

Riverside Unified School District

ADMINISTRATION BUILDING
3380 14TH STREET - P. O. BOX 2800
RIVERSIDE, CALIFORNIA 92516

OFFICE OF THE ASSISTANT SUPERINTENDENT
OPERATIONS DIVISION
951-788-7135, Extension 80413
FAX: 951-778-5668

David C. Hansen
District Superintendent

RUSD
Innovation in Education

Riverside County Emergency Management Department
Kim Saruwatari
Director
4210 Riverwalk Pkwy, Ste. 300
Riverside, CA 92505

Re: Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning

Dear Ms. Saruwatari,

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, the Riverside Unified School District is submitting this letter of commitment to confirm that the Riverside Unified School District has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning; the Riverside Unified School District agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department's to complete the plan in conformance with FEMA requirements.

The Riverside Unified School District understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction;

Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning
June 8, 2016
Page 2

- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.); and,
- Documentation of an effective process to maintain and implement the plan; and,
- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I Kirk R. Lewis, commit the Riverside Unified School District to the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Executed this 8th day of June, 2016.

Kirk R. Lewis
Assistant Superintendent, Operations

August 10, 2016

Riverside County Emergency Management Department

Kim Saruwatari, Director

4210 Riverwalk Pkwy, Ste. 300

Riverside, CA 92505

Re: Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-jurisdictional Hazard Mitigation Planning

Dear Riverside County Emergency Management Department:

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, the San Jacinto Unified School District (SJUSD) is submitting this letter of commitment to confirm that SJUSD has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning; SJUSD agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department to complete the plan in conformance with FEMA requirements.

SJUSD understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area

- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction
- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.)
- Documentation of an effective process to maintain and implement the plan
- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan and by adoption of resolution from the Board of Trustees (attached), I commit San Jacinto Unified School District to the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Sincerely,

Diane Perez

Superintendent

Santa Ana Watershed Project Authority

OVER 45 YEARS OF INNOVATION, VISION, AND WATERSHED LEADERSHIP

One Water One Watershed
AWRA INTEGRATED WATER RESOURCES MANAGEMENT AWARD
HARVARD KENNEDY SCHOOL'S TOP 25 INNOVATIONS IN AMERICAN GOVERNMENT

June 14, 2016

Thomas P. Evans
Commission
Chair

Celeste Cantú
General
Manager

Orange
County
Water
District

Western
Municipal
Water District

Eastern
Municipal
Water
District

San
Bernardino
Valley
Municipal
Water
District

Inland
Empire
Utilities
Agency

Kim Saruwatari, Director
Riverside County Emergency Management Department
4210 Riverwalk Pkwy, Ste. 300
Riverside, CA 92505

Re: Letter of Commitment as Participating Jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning

Dear Ms. Saruwatari:

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, the Santa Ana Watershed Project Authority (SAWPA) is submitting this letter of commitment to confirm that SAWPA has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning; SAWPA agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary in a timely manner to the County of Riverside Emergency Management Department's to complete the plan in conformance with FEMA requirements.

SAWPA understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction;
- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.);
- Documentation of an effective process to maintain and implement the plan; and
- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

11615 Sterling Avenue, Riverside, CA 92503 • 951.354.4220
www.sawpa.org • www.sawpa.org/OWOW

Kim Saruwatari, Director
Riverside County Emergency Management Department
Page 2
June 14, 2016

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I, Celeste Cantú, General Manager, commit SAWPA to the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

You may contact Richard Haller at 951.354.4240 or rhaller@sawpa.org with any questions.

Sincerely,

For Celeste Cantú
General Manager

John V. Rossi
General Manager

Robert Stockton Division 1 | Thomas P. Evans Division 2 | Brenda Dennstedt Division 3 | Donald D. Galleano Division 4 | S.R. "Al" Lopez Division 5

Western Municipal Water District
Securing Your Water Supply

May 31, 2016

Riverside County Emergency Management Department
Kim Saruwatari, Director
4210 Riverwalk Pkwy, Ste. 300
Riverside, CA 92505

Re: Letter of Commitment as participating jurisdiction in Riverside County Operational Area Multi-Jurisdictional Hazard Mitigation Planning

Dear Riverside County Emergency Management Department,

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, Western Municipal Water District is submitting this letter of commitment to confirm that Western Municipal Water District has agreed to participate in the County of Riverside Emergency Management Department's Multi-Jurisdictional Hazard Mitigation Planning.

Further, as a condition to participating in the mitigation planning; Western Municipal Water District agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as necessary and in a timely manner to the County of Riverside Emergency Management Department's to complete the plan in conformance with FEMA requirements.

Western Municipal Water District understands that it must engage in the following planning process, as described in FEMA's *Local Multi-Hazard Mitigation Planning Guidance* dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction.
- Demonstration that there has been proactive participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any

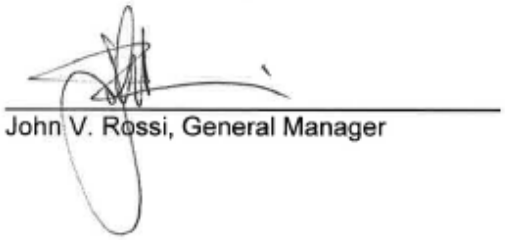
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planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.); and

- Documentation of an effective process to maintain and implement the plan; and,
- Formal adoption of the Multi-Jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I John V. Rossi, commit Western Municipal Water District to the County of Riverside Emergency Management Department Multi-Jurisdictional Hazard Mitigation Planning effort.

Executed this 4th day of June 2016,



John V. Rossi, General Manager

JVR:tm

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APPENDIX C – Mitigation Action Table

2012 Plan Strategies Updated Status

Mitigation Actions Table			
Type of Hazard	**Mitigation Actions**	**Departments/ Jurisdictions**	**Status Update**
ALL	Incorporate Updated Local Hazard Mitigation Plan into Riverside County General Plan	Transportation, Land Management Agency and Riverside Office of Emergency Services	Recently updated and approved on December 2015 by Board of Supervisors. Adopted 2015, which includes a new reference to implement the Local Hazard Mitigation Plan within the Safety Element.
DROUGHT	Construct reservoirs and water tanks to increase water storage	Water Conservation, Agriculture and County Fire	On-going, no update has been made
EARTHQUAKE	CREWS Earthquake Mitigation Project	County-wide	Ongoing process of recruiting non-participating cities in the Coachella Valley area into the early earthquake warning program.
FIRE	Purchase Masticator to remove vegetation and brush in heavily populated areas prone to fires.	Riverside County Fire	No change. Project still on hold due to lack of funding during budget cuts. Potential future purchase
FIRE	Shake Shingle Roof Replacement Project	Idyllwild	In 2013 Mountain Communities Fire Safe Council was awarded a FEMA grant to replace hazardous shake/wood shingle roofs in the San Jacinto WUI (Wildland Urban Interface) One hundred homes were reroofed with Class A roofing material. The grant was completed in October 2016.

FIRE	Single Tree Removal – removed dying and dead trees.	Idyllwild	Ongoing - Nearing Closeout: dead and dying trees are continuously monitored and removed as needed.
FIRE	Hazard Abatement- Fuel treatment program to remove 1120 acres of natural fuel	Mountain Communities Fire Safe Council Program - Idyllwild	Reducing fuels on private property in the San Jacinto WUI is an on-going activity of Mountain Fire Safe Council. To date, more than 1,600 acres have been treated with the financial help of grant funds awarded to MCFSC
FLOOD	Norco Storm Drain This project is an underground storm drain which will address flooding along Pedley Avenue/Sixth Street.	Riverside County Flood Control	Project completed on 04/05/2011.
FLOOD	Santa Ana River, Norco Bluffs [Corps Project] – Stabilization Project is a Corps of Engineers project that consists of a soil cement to protection structure constructed to the 100-year flood level at the base of the bluff.	Riverside County Flood, Transportation Land Management Agency and Riverside County Fire	The bluff stabilization work was completed in 2004. The District is continuing to work with the Corps on wrapping up the project, including completion of a Project Operation and Maintenance Manual. Once the Corps approves the O&M Manual, the project can be transferred to the District for ownership, operation and maintenance.
FLOOD	Temescal Creek-Foster Road Storm Drain (2-8-00493-01) - This project is an underground storm drain in Foster Road extending from Interstate 15 to Temescal Creek.	Riverside-Corona Resource Conservation District Riverside County Flood Control	Project completed on 09/01/2015
FLOOD	Dillon Road – State Hwy 62 Road Project to clear debris. Road has 25 dips that cause flooding during storms.	Transportation, Land, Management Agency Riverside County Fire	Ongoing; The current action plan is to barricade the low dip sections when they are flooded and remove the storm debris when the water recedes.
FLOOD	Underground storm drain which will extend	Flood Control and City of Norco	Finished approximately in Spring 2011

	approximately 1,300 feet south in Pedley Avenue from Norco MDP Line NA in Sixth Street. This project will address localized flooding along Pedley Avenue.		
FLOOD	Restore 100 yr level flood protection to the three million residents within the floodplain downstream, the Corps proposes to increase both the storage capacity of Prado Dam, and its outlet discharge capacity. The embankment will be raised 30 feet, while the spillway sill will be raised 20 feet and the gated discharge capacity will be tripled.	Flood Control	**Part 1** of this project involving Riverside County Flood Control and TLMA was completed **Part 2** of this project involving only Riverside County Flood Control is still pending approval
FLOOD	Ultimate channel improvements for the existing interim channel from 6th Street to the terminus near Rose Court.	City of Norco	Project has not started. No estimation on start date. The District is currently working on 60% design plans and anticipates 90% design plans will be completed by next year (2017). FEMA processing will be necessary to revise the currently mapped floodplain once the construction is completed.
FLOOD	Ultimate improvements to the existing channel between Parkridge Avenue and River Road. The channel is planned as a concrete lined open channel	City of Norco and Riverside County Transportation Land Management Agency	Project began Circa 7/2013 and was finished Circa 2/2014. Lead Agency was RCFC & WCD
FLOOD	Underground storm drain extending from the existing Stage 1 near Pedley Avenue, east in 7th Street to California Avenue then south in California approximately 800 feet to a sump.	Transportation, Land, & Management Agency and Flood Control	Project completed on 04/05/2011

FLOOD	Collection of "mitigation" charges from builders in Mockingbird Canyon with the intention of providing relief to flood prone properties in the lower canyon	Mockingbird Canyon	In process of collecting funds. Charging investors $500 per lot. Talks about whether to keep this project or abandon it. Considered a “mini” ADP (Area Drainage Project)
FLOOD	Storm Drain Last portion will be constructed as part of the same contract as the Ontario Avenue Storm Drain project	City of Corona	Project completed on 04/24/2012, Project revised on 04/25/2012.
FLOOD	A 1,050-foot drain to de-water a sump in Frank Avenue in the south Mira Loma area	Riverside County Flood Control and City of Eastvale	Project completed on 01/31/2012
FLOOD	The original project consisted of a 54 acre-foot debris basin at the southerly end of Smith Road and a concrete rectangular channel extending northerly to Cajalco Road. Mitigation required for the basin project includes removal of non-native vegetation, debris and remnants of abandoned structures as well as re-grading and establishment of native vegetation.	Riverside County Flood Control	Project completed on 01/10/2006
FLOOD	Underground storm drain in the City of Corona extending from East Grand Boulevard north in Joy Street to Temescal Creek Channel. Design began on this project in 2003 at which time it was discovered during a field check of the preliminary drawings that a recently installed Edison conduit in Joy Street overlapped the only viable alignment for the storm drain. The street is so heavily laden with utilities here is no longer room to install a drain.	City of Corona	Designed Phase Schedule for advertisement in March 2017

FLOOD	Underground storm drain in Ontario Avenue extending upstream from the District's existing El Cerrito Channel at El Cerrito Road about 3,000 feet to State Street just west of Interstate 15.	Riverside County Flood Control and Transportation Land & Management Agency	Project revised on 04/25/2012
FLOOD	Underground storm drain in Foster Road extending from Interstate 15 to Temescal Creek	Temescal Creek-Foster Road Storm Drain	Construction began in January 2015 and was completed in September 2015.
FLOOD	Multi-year plan to construct the ultimate levee system (approximately 1,200 feet river bottom width) between the existing Corps of Engineers' levee 9,500 feet upstream of State Street, and a point about 8,200 feet downstream of Sanderson Avenue, a distance of about 5 miles. Floodwalls on piles are required to be constructed over the Metropolitan Water District facilities just east of State Street.	San Jacinto and Transportation and Land Management	Funding was received in November 2015 - the levee was included in a suite of projects that received Proposition 84 grant funding from the California Department of Water Resources. The Prop 84 contribution is anticipated to be about $3.5 million.
FLOOD	Project to build MDP extending from South W. Esplanade to east Midway Street to South San Jacinto Street to collect flows from the larger Park Hill basin watershed	City of San Jacinto	Construction for the project began on April 25, 2014 and was completed on July 2, 2015.
FLOOD	Construction of an underground storm drain that extends from a proposed detention basin at the intersection of Potter Road and De Anza Drive then southwest in De Anza to Young Street. The City of San Jacinto is administering the project.	City of San Jacinto and Transportation and Land Management	Project still pending

FLOOD	Underground storm drain from an outlet north of Holland Road southerly in Hawthorne Avenue to a collection system south of Craig Avenue	City of Menifee and Transportation and Land Management	Project Completed 3/01/2011
FLOOD	Project is an underground storm drain that extends from near Yale Street east on Stetson Avenue approximately 1 mile to Dartmouth Street	City of Hemet	Project completed on 09/04/2007
FLOOD	Project is an underground storm drain on Whittier Boulevard extending from the existing storm drain at Palm Avenue east to San Jacinto Street	Riverside County Flood Control and City of Hemet	Project completed on 08/23/2016
FLOOD	Underground storm drain extending from an existing storm drain in Meridian Street near Berkeley venue south in Meridian Street to Whittier Avenue.	Riverside County Flood Control and City of Hemet	Stage 1 completed on 06/21/2016. Stage 2 still pending approval.
FLOOD	Project is for major flood control project to extend from the San Jacinto River near Goetz Road east approximately 6 miles to Juniper Flats Road and incorporates both lined and unlined open channel, underground storm drains and two major detention basins.	City of Menifee and Transportation, Land and Management Agency	Project built in 4 stages. Some stages have been completed, but others still not finished.
FLOOD	Open channel along Nuevo Road from Dunlap Drive to Perris Valley Channel	City of Perris, Riverside County Transportation and Flood Control	Under new contract: Starting Jan. 2017 and will range about 2.5 yrs. for this entire project to be completed; first part will take about 180 days to complete, but time frame will be extended.

FLOOD	East Ironwood Avenue to Petit Street. Part of the work the City of Moreno Valley is doing in association with improvements to the Moreno Beach Drive & 60 freeway interchange.	City of Moreno Valley and Transportation and Land Management	Storm Drain Line K-1 – City completed design in 2014. Currently seeing construction funding of approximately $2.5m.
FLOOD	Project is an open channel extending from Nason Basin northeasterly approximately 2,500 feet to Ironwood Avenue	City of Moreno Valley and Transportation and Land Management Agency	Storm Drain Line K from Ironwood to the Nason Basin – RCFC&WCD secured an easement in 2014 to receive flows from Line K-1 noted above. Action completed in 2014.
FLOOD **EARTHQUAKE**	Norco Streambank Stabilization. Project consists of a soil cement toe protection structure constructed to the 100-year flood level at the base of the bluff, and a stable earthen buttress fill constructed to the top of the bluff from I-15 Bridge to Center Avenue	Riverside County Flood Control and Transportation Land & Management Agency	Project Completed
FLOOD **EARTHQUAKE**	Stabilization of Interstate 15 near Alhambra Street, as a part of the Prado Dam enlargement feature of the Santa Ana River Mainstream Project at no cost to the District. The project involves the construction of a toe-protection-only structure from Hamner Avenue downstream to approximately 5th Street	Transportation Land Management Agency	Project still pending
LANDSLIDE **EARTHQUAKE** **FLOOD**	Proposed improvements include installation of slope protection along the Green River Mobile Home Park, as well as the exposed slopes adjacent to the Green River Homeowners Association and Highway 91 just downstream of Highway 71.	Transportation and Land Management Agency	**Phase 2A-The** District has completed its acquisition of the necessary easements and fee interests from Riverside County and private lands. Acquisition of the necessary easements and fee interests from Caltrans is ongoing. Construction of Phase 2A was completed in Fiscal Year

			2015/2016.**Phase 2B-Construction** of this segment was completed in Fiscal Year 2014/2015.

2017 New Mitigation Strategies

2017 Mitigation Actions Table

Type of Hazard	Mitigation Actions	Departments/ Jurisdictions	Status Update/Timeframe	Potential Funding Source
All Hazards	CERT Training and retention	Riverside County Emergency Management Department	July 2018 – Ongoing On-going for the life of the current plan (yrs. 2018-2023). There will be one training in each of the county districts per year to ensure community members throughout the county get the opportunity to refresh and reinforce their CERT skills. This action will be reassessed during the monitoring and update phase of the County's 2017 LHMP.	State Homeland Security Program (SHSP)
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	On-going for the life of the current plan (yrs. 2018-2023). The Safety Element in the General Plan is continuously updated as new information and changes arise. This action will be reassessed during the monitoring and update phase of the County's 2017 LHMP.	County General Fund
Earthquake	Working with CalOES & FEMA to revise the Southern California Catastrophic Earthquake Response Plan	All Cities in Riverside County	On-going for the life of the current plan (yrs. 2018-2023). Riverside County will continue to collaborate with Cal OES/ FEMA to improve and update this plan as needed. This action will be reassessed during the monitoring and update phase of the County's 2017 LHMP.	County General Fund

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	Riverside County Emergency Management Department & Riverside County Hospitals	On-going for the life of the current plan (yrs. 2018-2023).These reports will continuously be reviewed to make sure they are up to date and consistent with any changes. This action will be reassessed during the monitoring and update phase of the County's 2017 LHMP.	Hospital Preparedness Program (HPP) Grant
Earthquake	Worked with local City Emergency Manager (EM) to address '08 Golden Guardian Riverside County Shake Out Scenario/Assumptions	Riverside County Emergency Management Department	On-going for the life of the current plan (yrs. 2018-2023). County will continuously work with City EM to update and inform of changes or thoughts to 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 County's 2017 LHMP.	County General Fund
Earthquake	Mitigate potential seismic hazards through adoption and strict enforcement of current building codes	Riverside County Transportation, Land, Management Agency	On-going for the life of 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 County's 2017 LHMP.	County General Fund
Pandemic Flu	Provide training on immunization techniques	Riverside University Health System-Public Health	On-going for the life of 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 County's 2017 LHMP.	Public Health Emergency Preparedness Grant (PHEP)

Pandemic Flu	Participated and conducted a Non-Medical Intervention Tabletop Exercise	Riverside County Emergency Management Department & Riverside University Health System-Public Health	Completed on 09/28/2015	Pan Flu Grant PHEP Grant
Pandemic Flu	Participated and conducted a Flu vaccination exercise	Riverside County Emergency Management Department & Riverside University Health System-Public Health	Completed on 11/10/2016	Pan Flu Grant PHEP Grant
Pandemic Flu	Generate a draft Crisis Care Plan	Riverside County Emergency Management Department & Riverside University Health System-Public Health	Completed 08/30/2016	Pan Flu Grant PHEP Grant HPP Grant
Pandemic Flu	Training Medical Reserve Corp (MRC) in hospital surge exercises	Riverside County Emergency Management Department	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 County's 2017 LHMP.	HPP Grant State Homeland Security Program (SHSP)
Pandemic Flu	Training Medical Reserve Corp. (MRC) volunteers in Alternate Care Site	Riverside County Emergency Management Department	Completed in 2014	HPP Grant State Homeland Security Program (SHSP)Pan Flu Grant
Wildland Fire	Create wildfire protection zones that reduce the risks to citizens and firefighters from fire dangers	Riverside County Fire Department & CAL Fire	On-going for the life of 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 monitoring and update phase of the County's 2017 LHMP.	State Mission and/or Grant funding
Wildland Fire	Strengthen defensible space inspections in fire prone areas	Riverside County Fire Department & CAL Fire	On-going for the life of the current plan (yrs. 2018-2023). Continue inspections in locations that are susceptible to fires. This action will be reassessed during	State Mission and/or Grant funding

			the monitoring and update phase of the County's 2017 LHMP.	
Wildland Fire	Continue maintenance of existing fire roads throughout the county to provide fire department access	Riverside County Fire Department & CAL Fire	On-going for the life of 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 County's 2017 LHMP.	State Mission and/or Grant funding
Wildland Fire	Fuel reduction projects throughout the county to reduce fire potential	Riverside County Fire Department & CAL Fire	On-going for the life of 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 County's 2017 LHMP.	State Mission and/or Grant funding
Wildland Fire	Develop and enforce construction and design standards that ensure the development incorporates fire prevention features	Riverside County Fire Department & CAL Fire	On-going for the life of 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 County's 2017 LHMP.	State Mission and/or Grant funding
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 & Riverside County Transportation, Land, Management Agency (Planning Division)	On-going for the life of 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 County's 2017 LHMP.	State Mission and/or Grant funding
Wildland Fire	Ben Clark Training Center to provide wildland fire protection related classes to fire personnel	Riverside County Fire Department & CAL Fire	On-going for the life of 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	State Mission and/or Grant funding

			and update phase of the County's 2017 LHMP.	
Wildland Fire	Continue wildland fire suppression/preparedness to maintain a state of readiness throughout the year	Riverside County Fire Department & CAL Fire	On-going for the life of 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 County's 2017 LHMP.	State Mission and/or Grant funding
Wildland Fire	Rapid intervention, identification and mitigation of Goldspot Oak Bore Beetle (GSOB) trees at various infestation levels on State Responsibility Area (SRA) lands throughout the county. Herbicide or tree removal if necessary	CAL Fire Unit Forester	On-going for the life of the current plan (yrs. 2018-2023).Continuously monitor infestation levels of GSOB trees to continue removing infested trees if necessary. This action will be reassessed during the monitoring and update phase of the County's 2017 LHMP.	State Mission and/or Grant funding
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	On-Going for the life of the current plan (yrs. 2018-2023).Continuously 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 County's 2017 LHMP.	State Mission and/or Grant funding
Wildland Fire	Continue Truck Trail and road maintenance to provide access for fire suppression vehicles and personnel.	CAL Fire Unit Forester	On-Going for the life of 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 County's 2017 LHMP.	State Mission and/or Grant funding

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	On-Going for the life of 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 County's 2017 LHMP.	State Mission and/or Grant funding
Electrical Failure	Coordinated with Southern California Edison to be included in their power outage notifications	Riverside County Emergency Management Department	On-going for the life of 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 County's 2017 LHMP.	County General Fund
Emergent Disease/ Contamination	Drafted a Region VI Highly Contagious Disease Transportation Plan	Riverside County Emergency Management Department	Completed on 12/08/2016	HPP Grant Ebola Grant
Emergent Disease/ Contamination	Facilitated a Region VI Highly Contagious Disease Transportation Tabletop Exercise	Riverside County Emergency Management Department	Completed on 09/29/2016 The situation manual for this was completed on 11/14/2016	HPP Grant Ebola Grant
Emergent Disease/ Contamination	Drafted a Riverside County Viral Hemorrhagic Fever Preparedness and Response Plan (VHF Plan)	Riverside County Emergency Management Department & Riverside University Health System-Public Health	Completed on 11/2016	HPP Grant Ebola Grant
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	On-going for the life of the current plan (yrs. 2018-2023). Continue to update and maintain the IPS network to protect the county from any form of cyber-attacks or threats. This action will be reassessed during the monitoring and update phase of the County's 2017 LHMP.	County General Fund

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 cyber-attacks, malware outbreaks, network reconnaissance, data exfiltration, and C2 (command & control) and botnet activities	Riverside County Technology Information	On-going for the life of 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 County's 2017 LHMP.	County General Fund
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	Riverside County Technology Information	On-going for the life of 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 County's 2017 LHMP.	County General Fund

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	Riverside County Technology Information	On-going for the life of 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 County's 2017 LHMP.	County General Fund
Cyber Attack	**Enterprise Security Information Event Management (SIEM)** Serves as the county's centralized security event log management repository and correlation engine	Riverside County Technology Information	On-going for the life of the current plan (yrs. 2018-2023). Continue to maintain the SIEM to monitor and prevent security threats. This action will be reassessed during the monitoring and update phase of the County's 2017 LHMP.	County General Fund
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	Riverside County Technology Information	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

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	Riverside County Technology Information	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
Cyber Attack	**Security Operations Center (SOC)** Planning phase completed, construction estimated to begin in September 2017	Riverside County Information Technology	September 2017 – September 2018. The County's Cyber Security Operations Center (SOC) is under construction.	County General Fund
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)	Riverside County Information Technology	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 County's 2017 LHMP. The ISO is in the process of identifying members to serve on the Critical Security Incident	County General Fund

	Conducting security incident/breach simulations and tabletop exercises		Response Team (CSIRT). Estimated timeline for formation and initial kickoff meeting is October 2018.	
Terrorist Event	SWAT team trained to respond to terrorism events	Riverside County Sheriff	On-going for the life of 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 County's 2017 LHMP.	County General Fund
Terrorist Event	Hazard Device Team trained to respond to terrorism events	Riverside County Sheriff	On-going for the life of 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 County's 2017 LHMP.	County General Fund
Terrorist Event	Sheriff Emergency Response Team trained to respond to terrorism events	Riverside County Sheriff	On-going for the life of 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 County's 2017 LHMP.	County General Fund
Terrorist Event	Sheriff personnel are assigned to the Joint Terrorism Task Force	Riverside County Sheriff	On-going for the life of 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 County's 2017 LHMP.	County General Fund
Terrorist Event	Ben Clark Training Center provides terrorism related classes for Law	Riverside County Sheriff	On-going for the life of the current plan (yrs. 2018-2023). Classes are funded each year through the State Homeland Security Program (SHSP) to	County General Fund

	Enforcement and First Responders.		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 County's 2017 LHMP.	
Terrorist Event	Tactical response training	Riverside County Sheriff & Riverside County Fire Department	On-going for the life of 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 County's 2017 LHMP.	County General Fund
Communications Failure	**County of Riverside Network (CORNET)** Redundant Internet connections Backbone links are configured with a mesh topology to provide full redundancy	Riverside County Technology Information	On-going for the life of 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 County's 2017 LHMP.	County General Fund
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-	Riverside County Technology Information	On-going 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 County's 2017 LHMP.	County General Fund

	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			
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	Riverside County Technology Information	On-going for the life of 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 County's 2017 LHMP.	County General Fund

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	Riverside County Technology Information	On-Premise solution has been rolled out to all County VoIP endpoints. Mobile Solution has been rolled out to EMD. Mobile solution is ready to be rolled out to other departments as requested. On-going for the life of the current plan (yrs. 2018-2023). Continue to have a notification system to be able to have the ability to connect with off-network devices in case of a communications failure, including Wi-Fi. This action will be reassessed during the monitoring and update phase of the County's 2017 LHMP.	County General Fund Department Funds; departments who wish to take advantage of this service will be billed back to the departments based on how many users
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	Riverside County Technology Information	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 equipment availability. On-going for the life of the current plan (yrs. 2018-2023). Continue to provide alternate network paths for County locations in the case of a communication failure. This action will be reassessed during the monitoring and update phase of the County's 2017 LHMP.	County General Fund Department Funds; billable by the cellular carrier to requesting departments

Flood	**University Wash Channel, Stage 3 Project No. 221-1-8-00120-03-12** This project will increase public safety and improve local economics by retrofitting an older, built-out commercial/industrial area with drainage infrastructure to alleviate repeated flood damage to existing businesses. The project will also address street and intersection flooding	Riverside County Flood Control and Water Conservation District	Notice To Proceed 2/21/17 Completed 11/14/17	Riverside County Flood Control funds Cost: $3,044,500
Flood	**Monroe MDP – Monroe Channel Project No. 1-8-00071 Stage 4** At request of the City of Riverside, replacement of City's existing open channel with underground reinforced concrete box with 10-year storm capacity. Project limits are from California Avenue upstream to Magnolia Avenue	Riverside County Flood Control and Water Conservation District	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
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	Riverside County Flood Control and Water Conservation District	30% 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

	Agate Street about 1,000 feet south of Jurupa Road. Outlet point at Jurupa Channel is unimproved and likely to remain so			
Flood	**University MDP Line 3 Project No. 1-8-09020 Stage 1** The MDP proposes Line 3 as approximately 2,900 feet of 30" RCP east in Blaine Street then northeast to Blaine Street Retention Basin. The Blaine Street Retention Basin is located 600 feet north of Blaine Street between Valencia Hill Drive and Mt. Vernon Avenue. Budgeted for scoping study and evaluation of FEMA map floodplain limits only	Riverside County Flood Control and Water Conservation District	Pending approval Projected Start: 12/2020 Projected End: during the life of the plan (2018-2023)	Riverside County Flood Control funds Cost: $2,926,028
Flood	**Santa Ana River Stabilization Project No. 1-8-00010 Stg. 90** The 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. Exact form of	Riverside County Flood Control and Water Conservation District	Pending approval 5 year CIP (Capital Improvement Plan) Projected start and end: during the life of the plan (2018-2023)	Riverside County Flood Control funds Cost: $10,685,000

	project not set. Work will likely include repair of groins and toe protection			
Flood	**Box Springs Dam – Outlet Modification Project No. 1-8-00041** Reconstruct outlet structure to prevent blockage from sediment accumulation	Riverside County Flood Control and Water Conservation District	Pending until Woodcrest Dam is complete 5 year CIP (Capital Improvement Plan) Projected start and end: during the life of the plan (2018-2023)	Riverside County Flood Control funds Cost: $981,842
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 controls 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	Riverside County Flood Control and Water Conservation District	Pending until Woodcrest Dam is complete 5 year CIP (Capital Improvement Plan) Projected start and end: during the life of the plan (2018-2023)	Riverside County Flood Control funds Cost: $1,854,991

	of the dam. Completion of this project is planned to follow the Woodcrest Dam Outlet Modification project.			
Flood	**Alessandro Dam Outlet Modification Project No. 1-8-00043** Reconstruct outlet structure to prevent blockage from sediment accumulation	Riverside County Flood Control and Water Conservation District	Pending until Woodcrest Dam is complete 5 year CIP (Capital Improvement Plan) Projected start and end: during the life of the plan (2018-2023)	Riverside County Flood Control funds Cost: $907,682
Flood	**Prenda Dam Outlet Modification Project No. 1-8-00044** Reconstruct outlet structure to prevent blockage from sediment accumulation	Riverside County Flood Control and Water Conservation District	Pending until Woodcrest Dam is complete 5 year CIP (Capital Improvement Plan) Projected start and end: during the life of the plan (2018-2023)	Riverside County Flood Control funds Cost: $1,238,312
Flood	**Woodcrest Dam Outlet Modification Project No. 1-8-00045** This project will upgrade the level of safety and serviceability. The approved Project Charter identifies the primary scope of work for the project as follows: design and construction of a new inlet structure to reduce potential for clogging of the outlet works;	Riverside County Flood Control and Water Conservation District	Development of design plans and specifications on hold until latest Geotechnical investigation is complete Projected Start: March 2019 Projected End: during the life of the plan (2018-2023)	Riverside County Flood Control funds Cost: $2,216,529

	rehabilitation of the existing outlet gate assembly and control stem; implementation of an automated gate control system; rehabilitation of the outlet pipe; restoration of the outlet channel; and installation of surficial erosion controls on the surface of the dam embankment. Once completed, this project will serve as an example for performing similar upgrades to the remaining Riverside Reservoirs			
Flood	**North Norco Channel Stage 10 Project No. 222-2-8-00140-10-12** The project is located just upstream of River Road within the city of Norco in Riverside County, California. This project consists of approximately 550 lineal feet of triple cell reinforced concrete box and 125 lineal feet of open concrete channel transition, will replace the existing interim dirt channel. The project remedies ongoing flooding	Riverside County Flood Control and Water Conservation District	Completed 9/9/14	Riverside County Flood Control funds

	problems in the area thus resulting in positive impacts to residents and businesses			
Flood	**Corona MDP Line 5 Stage 1 Project No. 2-8-00280** This project includes the construction of an underground storm drain beginning in Sherman Avenue south of Railroad Street and extending down Railroad Street westerly to Smith Street. The City is willing to undertake the design and construction of this project using District funding.	Riverside County Flood Control and Water Conservation District	Pending approval 5 year CIP (Capital Improvement Plan) Projected start and end: during the life of the plan (2018-2023)	Riverside County Flood Control funds Cost: $1,397,201
Flood	**Corona MDP Line 52 Stage 1 Project No. 2-8-00350** An underground storm drain extending north from Third Street along E. Grand Boulevard 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
Flood	**Coldwater Canyon Structural Improvements Project 2-8-00505** Proposed conceptual improvements include 1) reducing	Riverside County Flood Control and Water Conservation District	Pending approval 5 year CIP (Capital Improvement Plan) Projected start and end: during the life of the plan (2018-2023)	Riverside County Flood Control funds Cost: $6,005,806

	flood risk and nuisance to traveling public on Temescal Canyon Road at the intersection of Glen Ivy Road; and 2) an armored berm along the east bank of Coldwater Wash downstream of the intersection of Temescal Canyon Road and Glen Ivy Road. 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			
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	Riverside County Flood Control and Water Conservation District	Pending approval 5 year CIP (Capital Improvement Plan) Projected start and end: during the life of the plan (2018-2023)	Riverside County Flood Control funds Cost: included in the $6,005,806 amount for Coldwater Canyon Structural Improvement project listed above

	Wash and recommend potential minimalist interventions, if necessary, 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			
Flood	**Southeast Compton Wash At Corona Sanitary landfill Project No. 2-8-09054** Riverside County Waste Management District has requested assistance solving ongoing flooding and erosion problems along the southeast side of the landfill	Riverside County Waste Management District**	Pending approval 5 year CIP (Capital Improvement Plan) Projected start and end: during the life of the plan (2018-2023)	Riverside County Flood Control funds Cost: $500,000

Flood	**Lake Mathews Estates Water Quality Pond Project No. 2-8-09058** Proposed in the "Drainage Water Quality Management Plan for the Lake Matthews Watershed", this roughly 10-acre project is to be located on the south side of Cajalco Road about ¾-mile west of Wood Road. The project will capture first flush runoff from Cajalco Creek and carry it to an off-channel pond to be treated and/or infiltrated	Riverside County Flood Control and Water Conservation District	Pending approval 5 year CIP (Capital Improvement Plan) Projected start and end: during the life of the plan (2018-2023)	Riverside County Flood Control funds Cost: $2,794,983
Flood	**Temescal Wash Floodplain Project No. 2-8-00052** Acquisition of floodplain area for flood protection, water conservation and habitat mitigation banking	Riverside County Flood Control and Water Conservation District	Pending approval 5 year CIP (Capital Improvement Plan) Projected start and end: during the life of the plan (2018-2023)	Riverside County Flood Control funds Cost: $23,534,000
Flood	**Arroyo Del Toro Channel Stage 1 Project No. 223-3-8-00170-01-12** This project collects flows that pass under Interstate 15, flow through the cemetery and flood the intersection of Riverside Drive	Riverside County Flood Control and Water Conservation District	Completed 6/16/15	Riverside County Flood Control funds

	and Collier Avenue. The flows will now be collected in a channel and conveyed via an underground storm drain system to the Collier Marsh area			
Flood	**Ortega Channel Retrofit Project No. 3-8-00070** Project will replace a portion of the clog-prone storm drain with a more easily accessible and maintainable open channel	Riverside County Flood Control and Water Conservation District	Pending approval 5 year CIP (Capital Improvement Plan) Projected start and end: during the life of the plan (2018-2023)	Riverside County Flood Control funds Cost: $1,628,761
Flood	**LITTLE LAKE MDP LINE B, STG 1 STETSON AVENUE CHANNEL, STG 7 aka HEMET MDP LINE D Project Nos. 224-4-8-00265-01-12 224-4-8-00211-07-12** The District constructed a segment of the District's Little Lake MOP Line B. This infrastructure will diminish neighborhood flooding and damage to private property and businesses and improve the safety of the traveling public during storm events. This new drain will also permanently reduce	Riverside County Flood Control and Water Conservation District	Stage 1 Completed 06/21/16 Stage 2 Pending approval Projected start and end: during the life of the plan (2018-2023)	Riverside County Flood Control funds Cost: $6,398,777

	flood-related street maintenance and repair costs for the City of Hemet. Little Lake MDP Line B Stage 1 is located primarily within the City of Hemet, with small portions extending into the City of San Jacinto and unincorporated Riverside County beginning approximate 300 feet north of Berkley Ave and terminating approximately 200 feet south of Florida			
Flood	**Homeland MDP Line 2, Stage 2 Project No. 224-4-8-00337-02-12** The District constructed a segment of drainage infrastructure described in the District's Romoland Master Drainage Plan as Romoland MOP Line A, Stages 4, 5 and 6, Romoland MOP Lines A-2 and A-3, Stage 1, and Briggs Basin. In conjunction with the District's Homeland MDP Line 1, Stage 1, completion of this drainage infrastructure will reduce the	Riverside County Flood Control and Water Conservation District	Completed 6/5/12	Riverside County Flood Control funds

	floodplain by approximately 1, 762 acres and enable revisions to the FEMA Flood Insurance Rate Maps that result in a significant reduction in flood insurance premiums. The District's Homeland MDP Line 1, Stage 1 project is currently ongoing with an anticipated completion in February 2017			
Flood	**Sunnymead MDP Line P-6 Stage 2 Project No. 224-4-8-00716-02-12** The District constructed a segment of drainage infrastructure described in the District's Sunnymead Master Drainage Plan which remedies ongoing flooding problems in the area thus resulting in positive impacts toresidents and businesses.	Riverside County Flood Control and Water Conservation District	Completed 3/25/2014	Riverside County Flood Control funds
Flood	**San Jacinto MDP Line C, Stage 2, Lines C-4, C-5 & B Project No. 224-4-8-00124-02-12** The District constructed a segment of drainage	Riverside County Flood Control and Water Conservation District	Completed 6/30/15	Riverside County Flood Control funds

	infrastructure described in the District's San Jacinto Master Drainage Plan, which remedies the ongoing flooding problems at the intersections of San Jacinto Avenue and Menlo Avenue, San Jacinto Avenue and Midway Street, and Santa Fe Street and Midway Street. Consequently, the removal of ponding water at these intersections during storm events improves traffic and pedestrian safety and public access to the businesses along San Jacinto and Menlo Avenues. The District partnered with the City of San Jacinto to further improve normal residential traffic safety by replacing and reconstructing Midway Street between San Jacinto Avenue and Santa Fe Street			
Flood	**West End Moreno MDP Line LL Project No. 224-4-8-00783-01-12** The District constructed a segment of drainage infrastructure described in the	Riverside County Flood Control and Water Conservation District	Completed 5/12/15	Riverside County Flood Control funds

	District's West End Moreno MDP which remedies ongoing flooding problems in the area, thus resulting in positive impacts to residents and businesses			
Flood	**Romoland MDP Line A, STGS 4,5,6, Homeland MDP Line 1 Briggs Basin, Romoland MDP Lines A-2 and A-3 Project No. 224-4-8-00310-04-12** The District constructed a segment of drainage infrastructure described in the District's Romoland Master Drainage Plan as Romoland MOP Line A, Stages 4, 5 and 6, Romoland MOP Lines A-2 and A-3, Stage 1, and Briggs Basin. In conjunction with the District's Homeland MDP Line 1, Stage 1, completion of this drainage infrastructure will reduce the floodplain by approximately 1, 762 acres and enable revisions to the FEMA Flood Insurance Rate Maps that result in a significant	Riverside County Flood Control and Water Conservation District	Completed 8/23/16	Riverside County Flood Control funds

	reduction in flood insurance premiums. The District's Homeland MDP Line 1, Stage 1 project is currently ongoing with an anticipated completion in February 2017			
Flood	**Little Lake MDP Line B Stage 2 Project No. 4-8-00265** An underground storm drain from just south of Florida Avenue, southerly in Meridian Street to Whittier Avenue.	Riverside County Flood Control and Water Conservation District	Pending approval 5 year CIP (Capital Improvement Plan) Projected start and end: during the life of the plan (2018-2023)	Riverside County Flood Control funds Cost: $6,804,257
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 been through several evolutions and has been essentially dormant for nearly a decade. Funding shown is for intensive planning/engineerin	Riverside County Flood Control and Water Conservation District	Pending approval Projected Start: 11/2019 Projected End: during the life of the plan (2018-2023)	Riverside County Flood Control funds ADP (Area Drainage Plan) Funds Cost: $70,000,000

	g 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			
Flood	**Gilman Home Channel Lateral A Stage 3 Gilman Home Channel Stage 90 Project No. 225-5-8-00171-03-12** The District constructed a segment of drainage infrastructure described in the District's Banning Master Drainage Plan which remedies ongoing flooding problems in the area, thus resulting in positive impacts to residents and businesses. Moreover, this project will enable revision of the FEMA Flood Insurance Rate Maps in the impacted area resulting in a significant reduction in flood insurance premiums. Many	Riverside County Flood Control and Water Conservation District	Completed 9/22/15	Riverside County Flood Control funds

	owners with federally insured home loans will realize savings of several thousands of dollars per year			
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	Riverside County Flood Control and Water Conservation District	Pending approval Projected Start: 12/2020 Projected End: during the life of the plan (2018-2023)	Riverside County Flood Control funds Cost: $5,353,074
Flood	**Eagle Canyon Dam Stage 1 Project No. 6-8-00190** The District constructed a segment of drainage infrastructure described in the District's Palm Springs Master Drainage Plan. Construction of this project also includes remediation of potentially hazardous and nonhazardous illegally dumped	Riverside County Flood Control and Water Conservation District	Completed 11/17/15	Riverside County Flood Control funds

	materials and remedies ongoing flooding problems in the area, thus resulting in positive impacts to residents and businesses. Additionally, Palm Springs MDP Line 43 and Lateral 43A, the underground dam outlet, is currently under construction and completion is anticipated for February 2016. Completion of the underground infrastructure will enable revisions to the FEMA Flood Insurance Rate Maps in the impacted area immediately downstream of Eagle Canyon and will result in a significant reduction in flood insurance premiums			
Flood	**Palm Springs MDP Line 43 and Lateral 43A Project No. 226-6-8-00163-01-12** The District constructed a segment of drainage infrastructure described in the District's Palm Springs Master Drainage Plan as Palm Springs MOP Line 43 and Lateral	Riverside County Flood Control and Water Conservation District	Completed 3/15/16	Riverside County Flood Control funds

	43A. Construction of this project serves as the underground outlet to the District's Eagle Canyon Dam facility that was completed on September 21, 2015 with the Notice of Completion accepted by the Board as Agenda Item Number 11-1 on November 17, 2015. Completion of both District facilities will enable revisions to the FEMA Flood Insurance Rate Maps in the impacted area immediately downstream of Eagle Canyon Dam and will result in a significant reduction in flood insurance premiums			
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	Riverside County Flood Control and Water Conservation District/United States Army Corps of Engineers*	Pending approval 5 year CIP (Capital Improvement Plan) Projected start and end: during the life of the plan (2018-2023)	Riverside County Flood Control funds Cost: $82,000,000
Flood	**Whitewater River Levee Restoration Project No. 6-8-00250** Restoration work to increase freeboard and bring levee	Riverside County Flood Control and Water Conservation District	Pending – Full scope of restoration work not yet established but funding figure shown is based on preliminary engineer's estimate	Riverside County Flood Control funds Cost:1,260,000

	adjacent to Cimarron Golf Resort into compliance with FEMA certification guidelines		5 year CIP (Capital Improvement Plan) Projected start and end: during the life of the plan (2018-2023)	
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	Riverside County Flood Control and Water Conservation District	Expected Advertise Date: 2nd Quarter 2018 Projected Start: 08/2019 Projected End: during the life of the plan (2018-2023)	Riverside County Flood Control funds Cost: $6,187,021
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	RCFC/City of Banning	Notice to Proceed: 5/15/17 Completed: 2/27/18	Riverside County Flood Control funds

	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.			
Civil Disorder	Trained and equipped Mobile Field Force Teams throughout the county	Riverside County Sheriff	On-going for the life of 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 County's 2017 LHMP.	County General Fund

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APPENDIX D – Public Outreach Presentations and Meetings

Please see Attachment D: Agendas and Sign-ins for supporting documentation.

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Public Outreach Presentations and Updates

Date	Name of Meeting, Location	Type of Presentation	Number Attending	Hours
6/22/2016	Western Riverside Emergency Council (WREC) Meeting, Riverside	Informed Council of upcoming Plan update and encouraged participation	19	20 mins.
7/14/2016	Operational Area Planning Committee (OAPC) Meeting, Beaumont	Informed OA on upcoming Plan to update	163	15 mins
9/19/2016	Palo Verde COMM. Meeting, Blythe, CA.	LHMP discussion, Local Hazard Mitigation Plan update process, encouraged East County participation and Public Outreach	16	1
9/29/2016	Email Distribution #1	Email blast, Distributed contact verification emails for partnering jurisdictions and agencies. Provided LHMP informational guides and resources.	–	–
10/6/2016	Local Hazard Mitigation Plan Steering Committee Kick-Off for County Departments	Overview of Hazard Mitigation FEMA 2011 LHMP Review Guide Update Process County Inventory Checklist County Risk Assessment Participants, New, Returning, and Not Participating	19	2
10/11/2016	Emergency Management Project Committee	Project Overview, LHMP introduction, planning process	34	10 mins.
10/13/2016	Operational Area Planning Committee (OAPC) Meeting, Beaumont	Updated OA on progress of update, offered participants opportunity to reach out to county for technical support, offered public opportunity to ask questions and provide comment (no comments made)	64	2

10/19/2016	Steering Committee Email Distribution #1	Informed the members of the google drive that contains LHMP documentation for additional support Informed about the next steps and what about the next meeting date Provided contact information for EMD LHMP staff	–	–
12/1/2016	Email Distribution #2	Invitation to LHMP Template workshop, update on county hazard identification/ranking, and general information on where they should be in the update process	–	–
12/6/2016	Tribal Workshop, Riverside	Overview of Hazard Mitigation FEMA 2011 LHMP Review Guide County Update Process and Progress Mitigation Websites and Resources Technical Support	7	1
12/8/2016	City Workshop, Riverside	Overview of Hazard Mitigation FEMA 2011 LHMP Review Guide County Update Process and Progress Mitigation Websites and Resources Technical Support	15	2
12/8/2016	Mountain Emergency Communications COMM. Meeting, Idyllwild, CA	LHMP discussion, Local Hazard Mitigation Plan update process	7	2
12/13/2016	Special District Workshop, Riverside	Overview of Hazard Mitigation FEMA 2011 LHMP Review Guide County Update Process and Progress Mitigation Websites and Resources Technical Support	8	1
12/15/2016	School District Workshop, Riverside	Overview of Hazard Mitigation FEMA 2011 LHMP Review Guide County Update Process and Progress Mitigation Websites and Resources Technical Support	7	2.5
12/15/2016	Northwest COMM. Meeting, Jurupa Valley, CA	LHMP discussion, Local Hazard Mitigation Plan update process	12	2

12/20/2016	Southwest COMM. Meeting, Murrieta, CA	LHMP discussion, Local Hazard Mitigation Plan update process	6	2
12/29/2016	Steering Committee Email Distribution #2	Sent each member questions about specific hazards that pertained to the department they work for	–	–
1/4/2017	Email Distribution #3	Informed LHMP participants of additional LHMP workshops that will be hosted to provide further assistance	–	–
1/11/2017	Local Hazard Mitigation Plan Steering Committee, Riverside	Group Discussion, Hazard Identification/Ranking Final Review, Mitigation Actions and Strategies Brainstorm	16	2
1/12/2017	Operational Area Planning Committee (OAPC) Meeting, Beaumont	Updated OA on progress of update, offered participants opportunity to reach out to county for technical support, offered public opportunity to ask questions and provide comment (no comments made)	74	2
1/19/2016	Steering Committee Email Distribution #3	Thanked all members for participating in the previous meeting Provided the risk scores of the hazards that were discussed at the previous meeting Provided the most current updates for the mitigation actions from 2012 & asked for each of them to provide new actions for current county hazards Informed about the next meeting date	–	–
2/7/2017	City Workshop, Riverside	Answered LHMP questions & concerns Provided additional assistance if needed Reviewed LHMP drafts if needed	10	1
2/8/2017	School District Workshop, Riverside	Answered LHMP questions & concerns Provided additional assistance if needed Reviewed LHMP drafts if needed	2	1
2/9/2017	Special District Workshop, Riverside	Answered LHMP questions & concerns Provided additional assistance if needed Reviewed LHMP drafts if needed	4	1

2/14/2017	Email Distribution #4	Informed LHMP participants about the final 2017 LHMP County Hazard Ranking. Talked about a possible LHMP Training that EMD is deciding on hosting. Informed about the Senate Bills 1000 & 379. Provided a link to help participants obtain maps for their jurisdiction if they are having trouble with Hazus	–	–
2/23/2017	Email Distribution #5	Informed LHMP participants about the cancellation of the April workshops due to the substation of having the LHMP FEMA Training Informed about the confirmation of the FEMA G-318 Training that will be hosted April 3-4 and provided the sign-up link Informed that the June workshops are still going to be held to provide any additional assistance on the plan	–	–
3/1/2017	Steering Committee Reminder Email	Reminded members that the date for submitting new mitigation actions for the current top 10 county hazards was approaching	–	–
3/15/2017	Palo Verde COMM. Meeting, Blythe, CA	LHMP discussion, Local Hazard Mitigation Plan update process	18	1.5
4/21/2017	Steering Committee Email Blast #4	Provided minutes from previous meeting, informed about reviewing LHMP mitigation actions and goals/objectives, sent calendar invite for next meeting	–	–
4/24/2017	Steering Committee Email	Sent selected committee members to provide input on LHMP hazard profiles depending on the hazard that corresponds to the department they represent	–	–
6/5/2017	Tribal Workshop, Riverside	Answered LHMP questions & concerns Provided additional assistance if needed Reviewed LHMP drafts if needed	4	1

6/6/2017	City Workshop, Riverside	Answered LHMP questions & concerns Provided additional assistance if needed Reviewed LHMP drafts if needed	8	1
6/7/2017	School District Workshop, Riverside	Answered LHMP questions & concerns Provided additional assistance if needed Reviewed LHMP drafts if needed	6	1
6/8/2017	Special District Workshop, Riverside	Answered LHMP questions & concerns Provided additional assistance if needed Reviewed LHMP drafts if needed	6	1
7/13/2017	Operational Area Planning Committee (OAPC) Meeting, Beaumont	Updated OA on progress of update, offered participants opportunity to reach out to county for technical support, offered public opportunity to ask questions and provide comment (no comments made)		2
8/17/2017	Local Hazard Mitigation Plan Steering Committee, Riverside	Review completed sections for finalization	10	1
9/2/2017	Indio Preparedness Month Booth, Home Depot, at 42100 Jackson Street from 9 a.m. - 12 p.m.	Personal preparedness and mitigation information		3
9/5/2017	Twitter Post	LHMP and NFIP information		
9/9/2017	Riverside Preparedness Month Booth, Galleria at Tyler, 1299 Galleria at Tyler from 11 a.m. - 3 p.m.	Personal preparedness and mitigation information		4
9/9/2017	Farm Barn, Wildomar Preparedness and Mitigation Presentation	Personal preparedness and mitigation information		1
9/12/2017	County Preparedness Month Booth, County of Riverside Administration Center, 4080 Lemon	Personal preparedness and mitigation information		5

	Street, from 10:30 a.m. - 1:30 p.m.			
9/16/2017	Lake Elsinore Preparedness Month Booth, 710 W. Graham Ave., Lake Elsinore, CA	Personal preparedness and mitigation information		4
9/16/2017	Perris Preparedness Month Booth, Walmart, 1800 N. Perris Blvd from 8 a.m. - 12 p.m.	Personal preparedness and mitigation information		4
9/23/2017	Jurupa Valley Preparedness Month Booth, K-Mart, 7840 Limonite Avenue from 8 a.m. - 12 p.m.	Personal preparedness and mitigation information		4
9/30/2017	Hemet Preparedness Month Booth, Hemet Valley Mall, 2200 W. Florida Ave. from 8 a.m. - 12 p.m.	Personal preparedness and mitigation information		4

LHMP Private Meetings Attended

Date	Location	Type of Meeting	Number Attending	Hours
8/24/2016	City Emergency Operations Center, Riverside	One to One Assistance LHMP Process Familiarity and HAZUS/GIS information	3	1
11/10/2016	Hemet Fire Administration Building, Hemet	Plan review, update process and clarification assistance	3	2.5
11/15/2016	Riverside EMD	Plan review, update process and clarification assistance	2	1
12/13/2016	Conference call to Mather	CA SHMPT Quarterly Meeting	N/A	4.5
12/14/2016	Hemet	Plan review, update process and clarification assistance	3	2
12/15/2016	Moreno Valley	Plan review, update process and clarification assistance	6	1
2/7/2017	Riverside EMD	Plan review, update process and clarification assistance	2	1
3/14/2017	Perris	Participation with Eastern Municipal Water Districts Planning Committee	10	2.5
3/15/2017	Riverside EMD	Plan review, update process and clarification assistance	3	5
3/28/2017	Riverside EMD	Plan review, update process and clarification assistance	3	2
3/29/2017	Beaumont Police Department	Plan review, update process and clarification assistance	4	2
4/11/2017	Mather	CA SHMPT Quarterly Meeting	N/A	4.5
4/11/2017	Murrieta Fire Administration	Plan review, update process and clarification assistance	4	1.15
4/13/2017	Cathedral City Fire Station	Plan review, update process and clarification assistance	2	2
4/20/2017	Banning City Hall	Plan review, update process and clarification assistance	3	1.5
4/20/2017	Desert Sands USD	Plan review, update process and clarification assistance	4	2
4/25/2017	Calimesa City Hall	Plan review, update process and clarification assistance		

4/25/2017	Temecula City Hall	Plan review, update process and clarification assistance	4	1.15
4/26/2017	Perris	Participation with Eastern Municipal Water Districts Planning Committee	6	2
4/27/2017	San Jacinto City Hall	Meeting with City Manager and staff to discuss joining the County LHMP	5	
5/1/2017	Moreno Valley USD	Plan review, update process and clarification assistance	3	1.5
5/1/2017	Lake Elsinore USD	Plan review, update process and clarification assistance	2	1.15
5/2/2017	Banning - High Valley Water District	Plan review, update process and clarification assistance	3	2
5/3/2017	Indian Wells & Palm Desert	Plan review, update process and clarification assistance	2	7
5/9/2017	La Quinta City Hall	Plan review, update process and clarification assistance	2	1.5
5/17/2017	Beaumont Police Department	Plan review, update process and clarification assistance	5	1.5
5/18/2017	Desert Hot Springs	Plan review, update process and clarification assistance	3	3
5/24/2017	Riverside EOC	Participation in Riversides LHMP planning meeting	6	1
5/25/2017	Wildomar City Hall	Plan review, update process and clarification assistance	3	2
5/25/2017	San Jacinto City Hall	Plan review, update process and clarification assistance	2	2.5
5/31/2017	Murrieta Fire Administration	Plan review, update process and clarification assistance	3	3
6/19/2017	Riverside EMD	LHMP and HMGP assistance for La Quinta	2	1
9/18/2017	Riverside Flood Control	LHMP and HMGP information presentation/meeting with Riverside County Flood Control Staff for potential Mitigation Action Project	5	2

APPENDIX E – Inventory Template

RIVERSIDE COUNTY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION AGENCY 2016 INVENTORY WORKSHEETS

Insert Jurisdiction/Agency Name
Insert Date

TABLE OF CONTENTS

Introduction: These documents are meant to be discussed, used and reviewed by a multi-disciplinary team. The Participation by a wide range of stakeholders who play a role in identifying and implementing mitigation actions is required.

SPECIAL CONCERNS:

1. *Has the completed Letter of Commitment been returned to EMD? EMD must forward this completed Letter of Commitment to CAL OES.*
2. *Has the completed Letter of Participation been returned to EMD?*

1. Local Jurisdiction Contact Information — Page 3
2. Hazard Identification Questionnaire — Pages 4-6
3. Specific Hazards Summary — Page 7
4. Jurisdiction Vulnerability Worksheet — Pages 8-9
5. Jurisdiction Mitigation Strategies and Goals — Pages 10-14
6. Local Jurisdiction Proposed Mitigation Action and Strategy Proposal — Pages 14-16
7. Local Jurisdiction Development Trends — Pages 17-18
8. Appendix A-Plan Review Tool — Pages A1-10

Appendix A the Plan Review Tool for your reference. This is the document Cal OES and FEMA will utilize to verify that all of the required information is in the submitted documents. Please refer to the document for information.

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?				

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.

HAZARD IDENTIFICATION 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.

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 2012.

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?

4. JURISDICTION VULNERABILITY WORKSHEET

This table is a listing of the primary hazards identified by the 2012 LHMP working groups. Each jurisdiction was asked to evaluate the potential for an event to occur in their jurisdiction by hazard. They were also asked to evaluate the potential impact of that event by hazard on their jurisdiction. The impact potential was determined based on:

1. Economic loss and recovery
2. Physical loss to structures (residential, commercial, and critical facilities)
3. The loss or damage to the jurisdictions infrastructure
4. Their ability to continue with normal daily governmental activities
5. Their ability to quickly recover from the event and return to normal daily activities
6. The loss of life and potential injuries from the event.

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).

With the assistance of the RCIP Plan and County Departments, Riverside County OES conducted an extensive evaluation of the severity and probability potential for the county as a whole. The hazards were also ranked for the County. These numbers and rankings were provided to the jurisdictions as a comparison guide.

A separate table was created to address the hazards relating to agriculture and was assessed by the agriculture working group.

a. Instructions for Updating Jurisdictions and Special Districts: Please review the table, determine if your ranking from the 2012 LHMP remains the same.
b. Instructions for New Jurisdictions and Special Districts: Please evaluate the potential for an event to occur in your jurisdiction by hazard. Then, evaluate the potential impact of that event by hazard on your jurisdiction according to #1-6 from the potential impact list above.

NOTE: Under Medical, Pandemic was added. This was a result of the H1N1 and other incidents.

July 2018

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 MAN-MADE					
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. PANDEMIC					

5. JURISDICTION MITIGATION STRATEGIES AND GOALS

This comprehensive table is a listing of the various mitigation strategies, goals, and objectives developed by the 2012 LHMP working groups. The jurisdictions were also given the opportunity to list additional strategies, goals, and objectives specific to either their jurisdiction or their workgroup (i.e. the hospitals, agriculture, etc.).

LOCAL JURISDICTION MITIGATION STRATEGIES AND GOALS

With your Planning Team

a. Instructions for Updating Jurisdictions and Special Districts: please review the table; determine if your ranking from the 2012 LHMP remains the same.

b. Instructions for New Jurisdictions and Special Districts: please follow below:

Please evaluate the priority level for each listed mitigation goal identified below as it relates to your jurisdiction or facility. If you have any additional mitigation goals or recommendations, please list them at the end of this document.

Place an H (High), M (Medium), L (Low), or N/A (Not Applicable) for your priority level for each mitigation goal in the box next to the activity.

EARTHQUAKE	
	Aggressive public education campaign in light of 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 2012 LHMP, each jurisdiction was required to develop a Mitigation Strategy Proposal based on one of the following:

1. The strategy, goal, or objective rating "High Priority" on the Local Jurisdiction Mitigation Strategies and Goals (WORKSHEET ABOVE)
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

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 if your ranking from the 2012 LHMP remains the same.

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.

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

APPENDIX A:
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 the 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		
ELEMENT E: REQUIRED REVISIONS			
ELEMENT F. ADDITIONAL STATE REQUIREMENTS (OPTIONAL FOR STATE REVIEWERS ONLY; NOT TO BE COMPLETED BY FEMA)			
F1.			

1. REGULATION CHECKLIST **Regulation** (44 CFR 201.6 Local Mitigation Plans)	**Location in Plan (section and/or**	**Met**	**Not Met**
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 Requirements
1												
2												
3												
4												
5												
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19												

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 Requirements
20												

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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

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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

APPENDIX H – Mitigation Cost Analysis Guidelines

Continue to next page.

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 – 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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APPENDIX J – References

References for the Updated LHMP included information from many websites, FEMA and Cal EMA guidance documents and resources from the County of Riverside Departments.

Guidance and other Documents:
2012 Riverside County Operational Area Multi-Jurisdictional Local Hazard Mitigation Plan (LHMP)
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

Website 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 Link	http://www.rctlma.org/admin/content/ordinance_
Riverside County Building and Safety Link	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.	http://www.sheldus.org.

Columbia, SC: University of South Carolina. 2009.	
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
Active Shooter Incidents in the United States in 2014 and 2015	file:///C:/Users/sbruns/Downloads/ActiveShooterIncidentsUS_2014-2015.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 3	https://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/
Handouts and Documents Distributed to Participants:	
FEMA Local Mitigation Planning Handbook	
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
FEMA Mitigation Ideas
2016 Riverside County SCAG Repot – Profile of Riverside County
Community Rating System
FEMA Local Mitigation Plan Review Guide
2016 Inventory Worksheet
2017 LHMP Template
Senate Bill 1000
Senate Bill 379
FEMA Mitigation Grant Information