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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)



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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 regional stakeholders through the Operational Area Planning Committee distribution list.

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



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- 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

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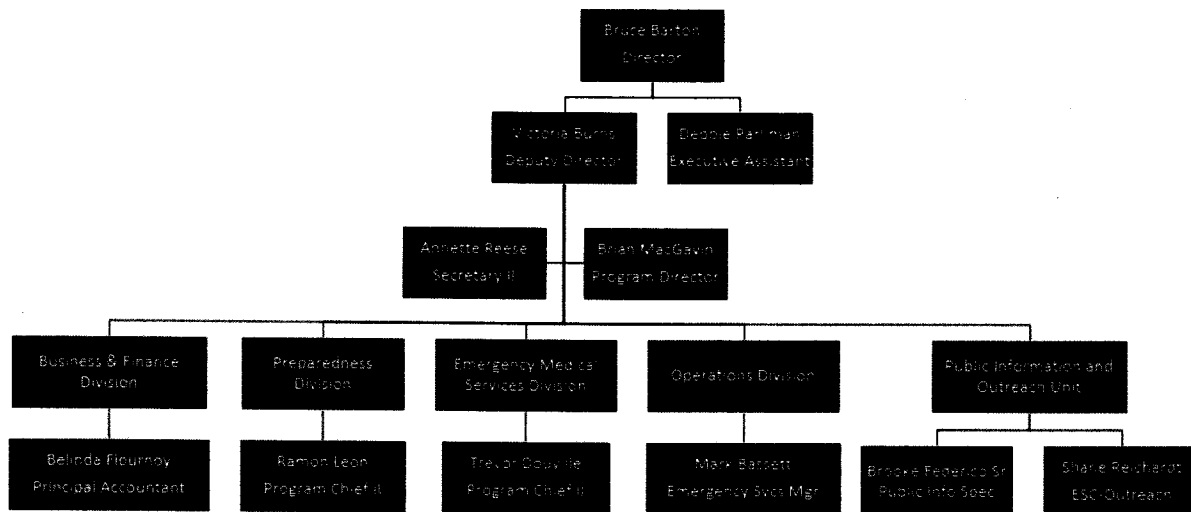


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- Emergency Services Manager
- Program Coordinator II
- Emergency Services Coordinators (7)
- Emergency Medical Services Specialist (3)
- Senior Health Educator
- Health Education Assistant
- Volunteer Services Program Manager
- Grants Personnel (Administrative 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 (ICS) Organizational Chart. There are four divisions; Preparedness, Operations, Business and Finance, and Emergency Medical Services. The Department is able to expand or contract similarly to ICS and places an importance on Span of Control. The following pages have figures of the Emergency Management Department Organizational Chart.

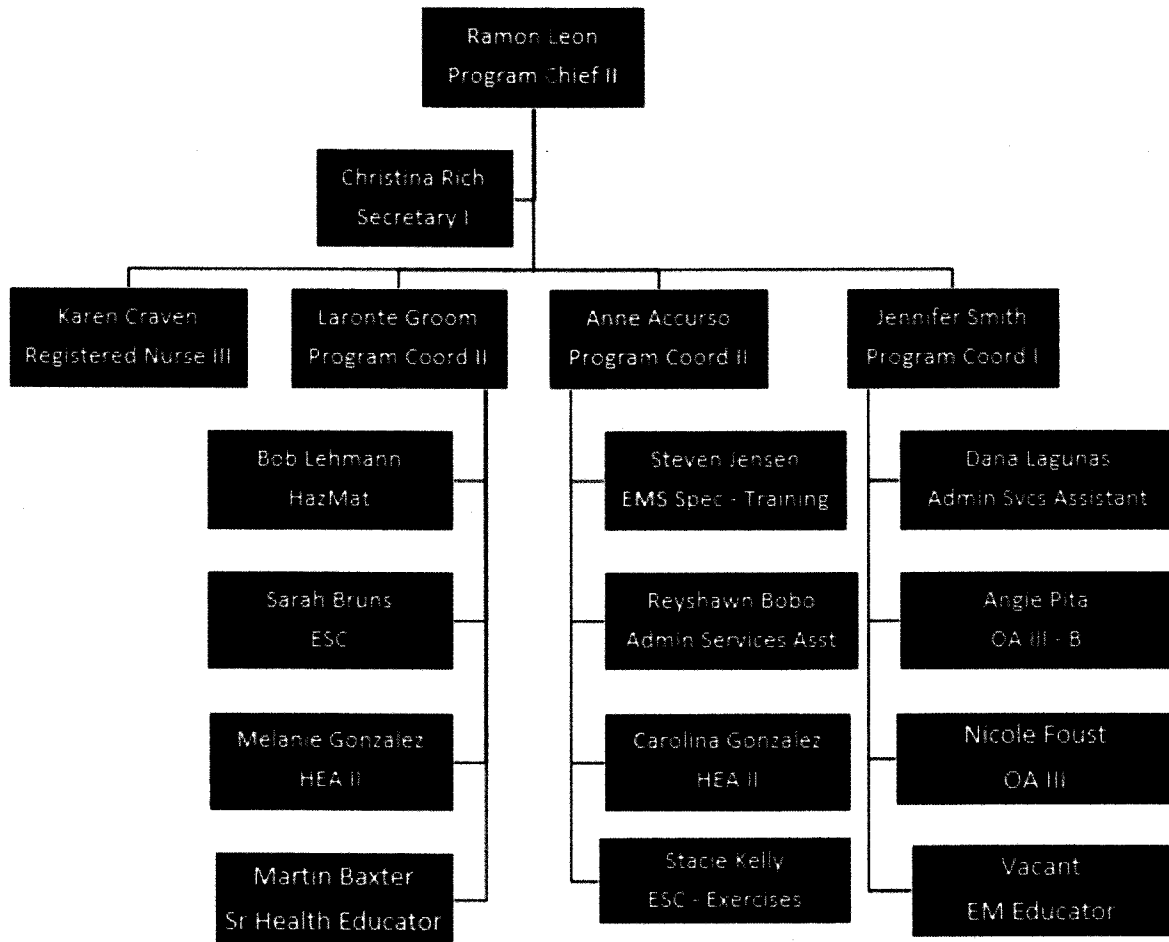
**Figure 12:** Riverside County Emergency Management Department Organizational Chart:





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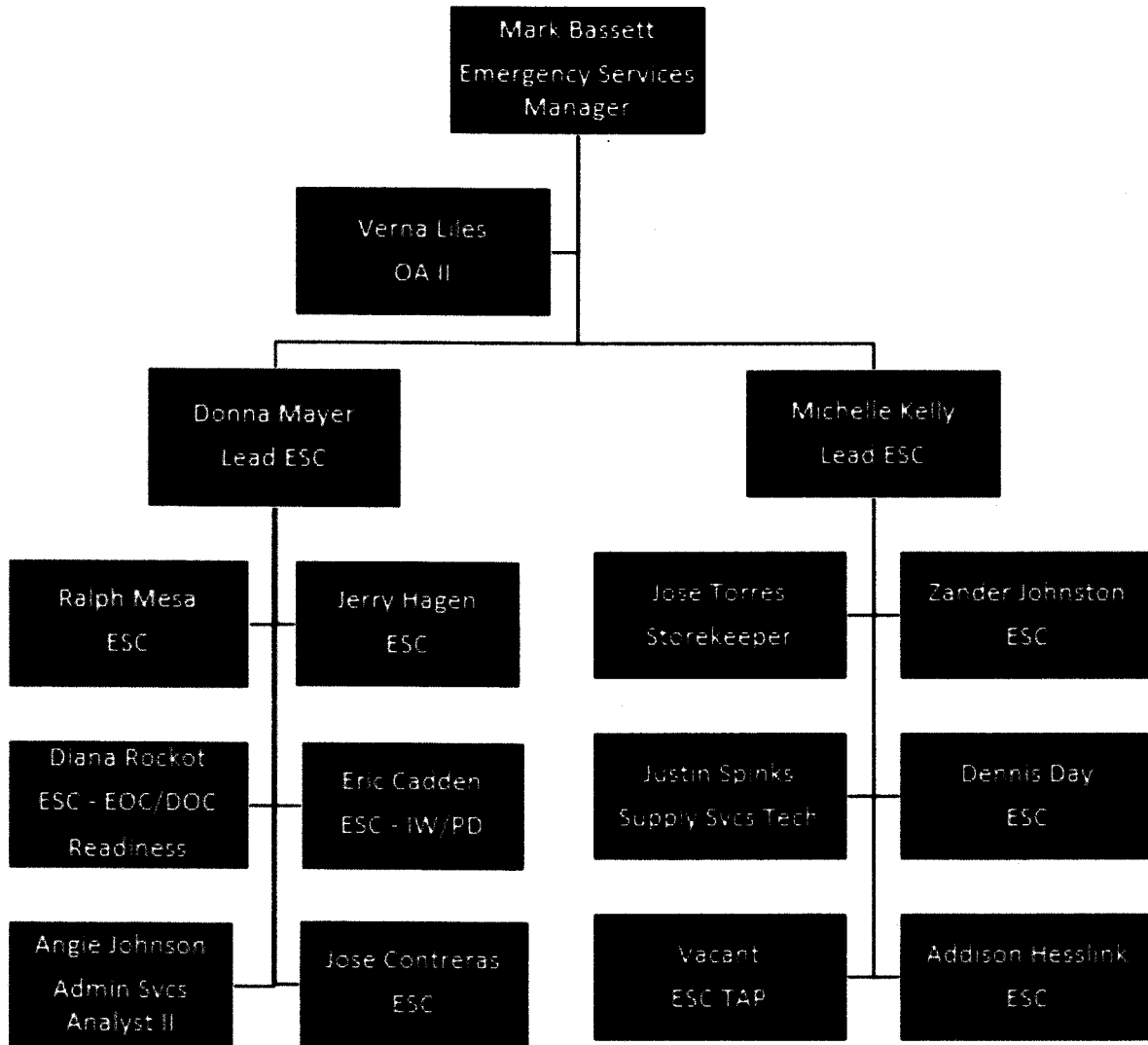
Figure 13: EMD Preparedness Division





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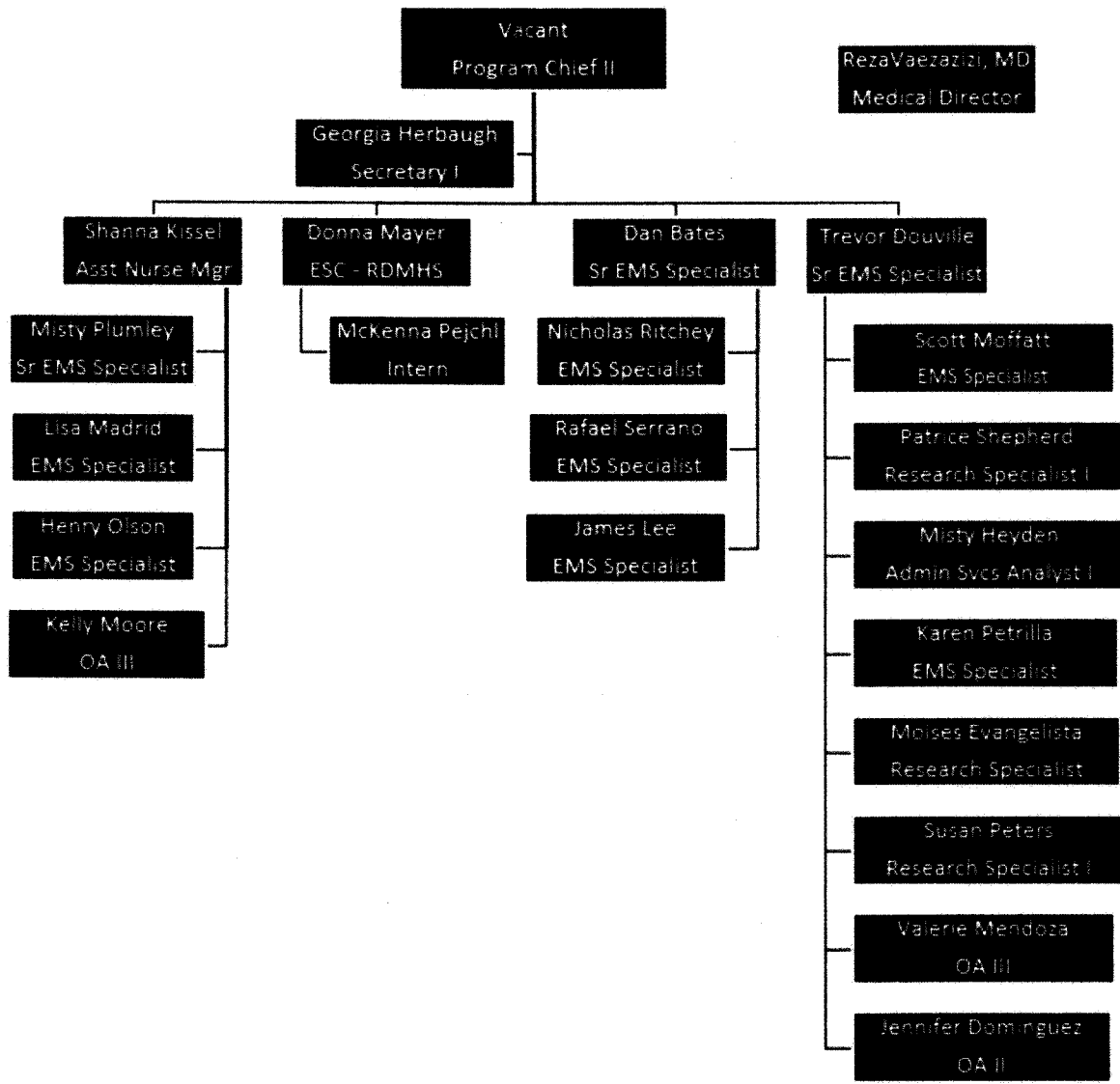
Figure 14: EMD Operations Division





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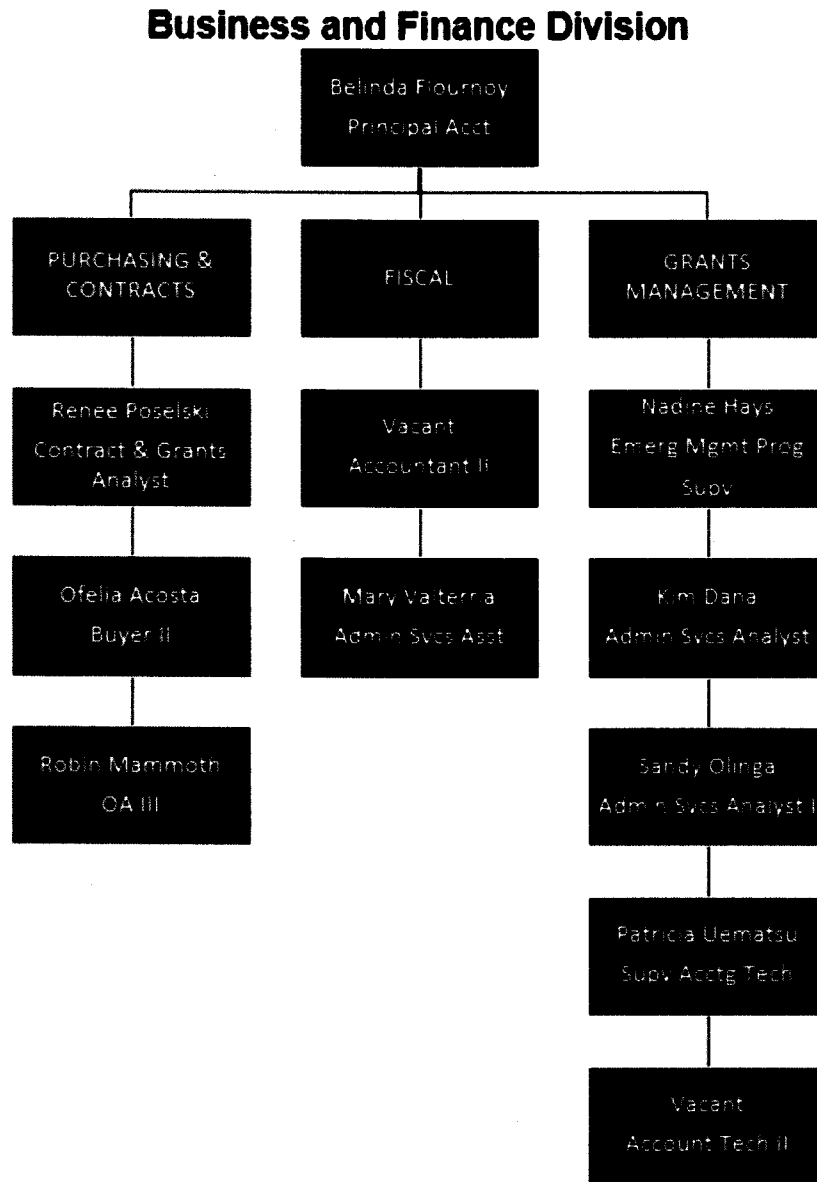
Figure 15: EMD Riverside Emergency Medical Services Agency Division





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Figure 16: EMD Business and Finance Division







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### 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

<b>DEPARTMENTS</b>	<b>POSITION</b>	<b>TOPIC</b>
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

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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

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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 through 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)



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### **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 throughout 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.

# Riverside Operational Area Multi-Jurisdictional Local Hazard Mitigation Plan (LHMP)



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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](#)




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Figure 18: Twitter Post

Twitter URL:

[https://twitter.com/RivCoReady?ref\\_src=twsrc%5Etfw&ref\\_url=http%3A%2F%2Frivcoemr.org%2Frivcoready%2F](https://twitter.com/RivCoReady?ref_src=twsrc%5Etfw&ref_url=http%3A%2F%2Frivcoemr.org%2Frivcoready%2F)

**Tweets   Tweets & replies   Media**

 **RivCoReady** @RivCoReady · 23h  
Make sure you know what your insurance policy covers before an emergency:  
[fema.gov/national-flood...](http://fema.gov/national-flood...) #NatlPrep



🗨️   ↻ 2   ❤️



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Figure 19 LHMP Postcard Side 1

**THE TIME TO PREPARE IS NOW**

Learn what items to put in your family emergency kit and how to start home mitigation projects at [RivCoReady.org](http://RivCoReady.org), or contact us at (951) 358-7100.

Figure 20 LHMP Postcard Side 2

Flooding is the most commonly occurring disaster in Riverside County. The National Flood Insurance Program is federally backed flood insurance that decreases the risk and effects of flooding on private and public buildings.

For more information, visit: [FEMA.gov/national-flood-insurance-program](http://FEMA.gov/national-flood-insurance-program)

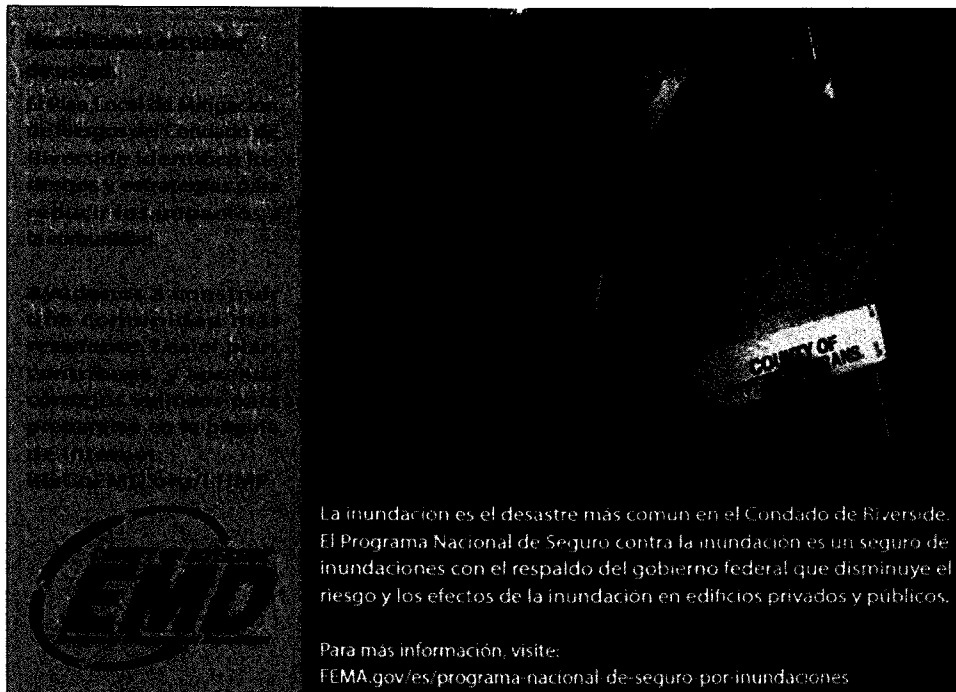


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Figure 21: LHMP Spanish Postcard Side 1



Figure 22: LHMP Spanish Postcard Side 2







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### 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 6<sup>th</sup>, 8<sup>th</sup>, 13<sup>th</sup> and 15<sup>th</sup> 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 3<sup>rd</sup> and 4<sup>th</sup>.

**Table 6:** Table of Presentations and Meetings

The following table documents public outreach efforts and community meetings:

<b>Public Outreach Presentations and Updates</b>				
<b>Date</b>	<b>Name of Meeting, Location</b>	<b>Type of Presentation</b>	<b>Number Attending</b>	<b>Hours</b>
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.	-	-

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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

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		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

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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	-	-

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2/23/2017	Email Distribution #5	Informed LHMP participants about the cancellation of the April workshops due to the substitution 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	-	-

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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

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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:

<b>LHMP Meetings Attended</b>				
<b>Date</b>	<b>Location</b>	<b>Type of Meeting</b>	<b>Number Attending</b>	<b>Hours</b>
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

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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 Riverside 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



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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,

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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



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## 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

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9. Flood

10. Civil Disorder



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## 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	<ul style="list-style-type: none"> <li>• History of events</li> <li>• Presence of fault lines and geologic activity</li> </ul>
Pandemic Flu	<ul style="list-style-type: none"> <li>• Due to air travel and urban expansion there is increasing probability of health related emergencies</li> </ul>
Wildland Fire	<ul style="list-style-type: none"> <li>• History of events</li> <li>• Presence of a large amount of timber and brush</li> </ul>
Electrical Failure	<ul style="list-style-type: none"> <li>• History of events</li> </ul>
Emergent Disease/Contamination	<ul style="list-style-type: none"> <li>• History of events</li> </ul>
Cyber Attack	<ul style="list-style-type: none"> <li>• History of events and danger to sensitive security information for Health Care Facilities</li> </ul>
Terrorist Event	<ul style="list-style-type: none"> <li>• Heightened sense of awareness since September 2001</li> <li>• History of event in December 2015</li> </ul>
Communications Failure	<ul style="list-style-type: none"> <li>• History of events</li> <li>• Impact level of events</li> </ul>
Flood	<ul style="list-style-type: none"> <li>• History of events and the presence of a large number of rivers and channels</li> </ul>
Civil Disorder	<ul style="list-style-type: none"> <li>• Vulnerability due to number of public venues</li> </ul>
Drought	<ul style="list-style-type: none"> <li>• History of events</li> <li>• Potential to drastically increase wildfire hazard</li> </ul>

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<b>Nuclear/Radiological Incident</b>	<ul style="list-style-type: none"> <li>• Vulnerability due to transportation routes and relative proximity of San Onofre Nuclear Generating Station (SONGS)</li> </ul>
<b>Extreme Weather</b>	<ul style="list-style-type: none"> <li>• History of events</li> </ul>
<b>Transportation Failure</b>	<ul style="list-style-type: none"> <li>• History of events and the presence of a large number of transportation corridors and airport flight paths</li> </ul>
<b>Dam Failure</b>	<ul style="list-style-type: none"> <li>• Vulnerability of dams</li> </ul>
<b>Aqueduct</b>	<ul style="list-style-type: none"> <li>• Presence of aqueducts serving multiple counties</li> </ul>
<b>Tornado</b>	<ul style="list-style-type: none"> <li>• History of events</li> </ul>
<b>Insect Infestation</b>	<ul style="list-style-type: none"> <li>• History of events</li> </ul>
<b>Jail/Prison Event</b>	<ul style="list-style-type: none"> <li>• Vulnerability of State and County correctional facilities</li> </ul>
<b>Pipeline Disruption</b>	<ul style="list-style-type: none"> <li>• History of events</li> <li>• Multiple pipelines within the OA</li> </ul>
<b>Landslide</b>	<ul style="list-style-type: none"> <li>• History of events</li> </ul>
<b>HazMat Incident</b>	<ul style="list-style-type: none"> <li>• History of events</li> <li>• Many transportation corridors and Hazardous Materials Facilities</li> </ul>
<b>Water Supply Disruption/Contamination</b>	<ul style="list-style-type: none"> <li>• History of events</li> <li>• Potential disruption to the OA</li> </ul>



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### 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

<b>Mitigation Actions Table</b>			
<b>Type of Hazard</b>	<b>Mitigation Actions</b>	<b>Departments/ Jurisdictions</b>	<b>Status Update</b>
<b>ALL</b>	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.
<b>DROUGHT</b>	Construct reservoirs and water tanks to increase water storage	Water Conservation, Agriculture and County Fire	On-going, no update has been made
<b>EARTHQUAKE</b>	CREWS Earthquake Mitigation Project	County-wide	Ongoing process of recruiting non-participating cities in the Coachella Valley area into the early earthquake warning program.
<b>FIRE</b>	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

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<b>FIRE</b>	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.
<b>FIRE</b>	Single Tree Removal – removed dying and dead trees.	Idyllwild	Ongoing: dead and dying trees are continuously monitored and removed as needed.
<b>FIRE</b>	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
<b>FLOOD</b>	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.
<b>FLOOD</b>	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.
<b>FLOOD</b>	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
<b>FLOOD</b>	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.



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<b>FLOOD</b>	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
<b>FLOOD</b>	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	<b>Part 1</b> of this project involving Riverside County Flood Control and TLMA was completed  <b>Part 2</b> of this project involving only Riverside County Flood Control is still pending approval
<b>FLOOD</b>	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.
<b>FLOOD</b>	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
<b>FLOOD</b>	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
<b>FLOOD</b>	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)
<b>FLOOD</b>	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.

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	contract as the Ontario Avenue Storm Drain project		
<b>FLOOD</b>	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
<b>FLOOD</b>	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
<b>FLOOD</b>	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
<b>FLOOD</b>	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
<b>FLOOD</b>	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.

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<b>FLOOD</b>	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.
<b>FLOOD</b>	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.
<b>FLOOD</b>	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
<b>FLOOD</b>	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
<b>FLOOD</b>	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
<b>FLOOD</b>	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
<b>FLOOD</b>	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.

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<b>FLOOD</b>	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.
<b>FLOOD</b>	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.
<b>FLOOD</b>	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.
<b>FLOOD</b>	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.
<b>FLOOD EARTHQUAKE</b>	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
<b>FLOOD EARTHQUAKE</b>	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

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<p><b>LANDSLIDE EARTHQUAKE FLOOD</b></p>	<p>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.</p>	<p>Transportation and Land Management Agency</p>	<p><b>Phase 2A-</b>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. <b>Phase 2B-Construction</b> of this segment was completed in Fiscal Year 2014/2015.</p>
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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

<b>2017 Mitigation Actions Table</b>				
<b>Type of Hazard</b>	<b>Mitigation Actions</b>	<b>Departments/ Jurisdictions</b>	<b>Status Update/Timeframe</b>	<b>Potential Funding Source</b>
<b>All Hazards</b>	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)
<b>All Hazards</b>	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
<b>Earthquake</b>	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

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	Earthquake Response Plan		this plan as needed. This action will be reassessed during the monitoring and update phase of the County's 2017 LHMP.	
<b>Earthquake</b>	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
<b>Earthquake</b>	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
<b>Earthquake</b>	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

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<b>Pandemic Flu</b>	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)
<b>Pandemic Flu</b>	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
<b>Pandemic Flu</b>	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
<b>Pandemic Flu</b>	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
<b>Pandemic Flu</b>	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)
<b>Pandemic Flu</b>	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



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<b>Wildland Fire</b>	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
<b>Wildland Fire</b>	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
<b>Wildland Fire</b>	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
<b>Wildland Fire</b>	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
<b>Wildland Fire</b>	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
<b>Wildland Fire</b>	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

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	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.	
<b>Wildland Fire</b>	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
<b>Wildland Fire</b>	Continue wildland fire suppression/prepare dness 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
<b>Wildland Fire</b>	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
<b>Wildland Fire</b>	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

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	use of pesticide when applicable			
<b>Wildland Fire</b>	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
<b>Wildland Fire</b>	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
<b>Electrical Failure</b>	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
<b>Emergent Disease/ Contamination</b>	Drafted a Region VI Highly Contagious Disease Transportation Plan	Riverside County Emergency Management Department	Completed on 12/08/2016	HPP Grant Ebola Grant
<b>Emergent Disease/ Contamination</b>	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

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<p><b>Emergent Disease/ Contamination</b></p>	<p>Drafted a Riverside County Viral Hemorrhagic Fever Preparedness and Response Plan (VHF Plan)</p>	<p>Riverside County Emergency Management Department &amp; Riverside University Health System-Public Health</p>	<p>Completed on 11/2016</p>	<p>HPP Grant Ebola Grant</p>
<p><b>Cyber Attack</b></p>	<p><b>Enterprise Intrusion Prevention System (IPS)</b> Protects the county network from Internet-based threats and attacks (~140,000 attacks/day on average)</p>	<p>Riverside County Technology Information</p>	<p>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.</p>	<p>County General Fund</p>
<p><b>Cyber Attack</b></p>	<p><b>Enterprise Breach Detection System</b> 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 &amp; control) and botnet activities</p>	<p>Riverside County Technology Information</p>	<p>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.</p>	<p>County General Fund</p>
<p><b>Cyber Attack</b></p>	<p><b>Albert Sensor</b> Monitors and reports to the Center for Internet Security (CIS) Multi-State Information Sharing and Analysis Center (MS-ISAC) all Domain Name</p>	<p>Riverside County Technology Information</p>	<p>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</p>	<p>County General Fund</p>

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	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.	
<b>Cyber Attack</b>	<b>Countywide Security Awareness Training</b> 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
<b>Cyber Attack</b>	<b>Enterprise Security Information Event Management (SIEM)</b> 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

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<p><b>Cyber Attack</b></p>	<p><b>Enterprise Internet Proxy (Web Filter)</b> Prevents county employees and malware from accessing compromised/malicious websites and C2 (command &amp; control) servers, in addition to non-county authorized websites based on category/content filtration policies/rules</p>	<p>Riverside County Technology Information</p>	<p>May 2017 – December 2018  Product (Blue Coat Proxy Advance Secure Gateway (ASG)) has been procured and is in the process of being deployed.</p>	<p>County General Fund</p>
<p><b>Cyber Attack</b></p>	<p><b>Governance, Risk, &amp; Compliance (GRC) Software Suite</b> 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</p>	<p>Riverside County Technology Information</p>	<p>Implementation estimated to begin in June 2017 – July 2018.  Product (RSA Archer GRC) has been procured and is in the process of being deployed.</p>	<p>County General Fund</p>
<p><b>Cyber Attack</b></p>	<p><b>Security Operations Center (SOC)</b> Planning phase completed, construction estimated to begin in September 2017</p>	<p>Riverside County Information Technology</p>	<p>September 2017 – September 2018.  The County’s Cyber Security Operations Center (SOC) is under construction.</p>	<p>County General Fund</p>

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<p><b>Cyber Attack</b></p>	<p><b>Information Security Forum (ISF)</b> Convene on a quarterly basis with department information security officers/liasons to discuss key security topics, risk trends, and other related matters, including:</p> <p>Formation of a Critical Security Incident Response Team (CSIRT)</p> <p>Conducting security incident/breach simulations and tabletop exercises</p>	<p>Riverside County Information Technology</p>	<p>October 2018 – ongoing</p> <p>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.</p> <p>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.</p>	<p>County General Fund</p>
<p><b>Terrorist Event</b></p>	<p>SWAT team trained to respond to terrorism events</p>	<p>Riverside County Sheriff</p>	<p>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.</p>	<p>County General Fund</p>
<p><b>Terrorist Event</b></p>	<p>Hazard Device Team trained to respond to terrorism events</p>	<p>Riverside County Sheriff</p>	<p>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.</p>	<p>County General Fund</p>
<p><b>Terrorist Event</b></p>	<p>Sheriff Emergency Response Team trained to respond to terrorism events</p>	<p>Riverside County Sheriff</p>	<p>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</p>	<p>County General Fund</p>

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			monitoring and update phase of the County's 2017 LHMP.	
<b>Terrorist Event</b>	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
<b>Terrorist Event</b>	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
<b>Terrorist Event</b>	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
<b>Communications Failure</b>	<b>County of Riverside Network (CORNET)</b> 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
<b>Communications Failure</b>	<b>Enterprise Voice Network (VoIP)</b> 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



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	<p>ingress/egress PSTN access via 8 geographically separated locations</p> <p>Carrier failover protection for inbound voice traffic</p> <p>Enterprise call processing for VoIP Endpoints are logically and physically separated into 3 datacenters ensuring a High-Availability solution</p> <p>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</p>		<p>connection and call processing. This action will be reassessed during the monitoring and update phase of the County's 2017 LHMP.</p>	
<p><b>Communications Failure</b></p>	<p><b>Enterprise Best Practices</b> Internal escalation contact list for all essential personal readily available</p> <p>24x7 On-Call staffing availability for both Voice and Data Networks</p> <p>Vendor support available at 24x7x4 for all critical</p>	<p>Riverside County Technology Information</p>	<p>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.</p>	<p>County General Fund</p>

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	<p>Network and Voice equipment</p> <p>Regular professional staff training on emerging technologies</p> <p>Frequent equipment configuration backups to SAN Critical Enterprise level equipment is located at facilities with full battery and generator backup power</p>			
<p><b>Communications Failure</b></p>	<p><b>Enterprise Emergency Notification System</b></p> <p>InformaCast Advanced on-premise notification solution for immediate reach to the County's 20,000+ VoIP endpoints</p> <p>InformaCast Mobile cloud-based notification solution to extend the County's reach off-network to mobile devices such as cellular phones and tablets</p>	<p>Riverside County Technology Information</p>	<p>On-Premise solution has been rolled out to all County VoIP endpoints.</p> <p>Mobile Solution has been rolled out to EMD.</p> <p>Mobile solution is ready to be rolled out to other departments as requested.</p> <p>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.</p>	<p>County General Fund</p> <p>Department Funds; departments who wish to take advantage of this service will be billed back to the departments based on how many users</p>

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<p><b>Communications Failure</b></p>	<p><b>Network Connectivity</b> Use of Cellular based redundant WAN links for critical county locations.</p> <p>Introduction of MPLS technologies to provide alternate network paths for County locations</p>	<p>Riverside County Technology Information</p>	<p>Several locations have purchased a Cellular based redundant WAN link .</p> <p>Solution can be purchased by other departments. Installation can take up to 6 weeks to install, based on equipment availability.</p> <p>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.</p>	<p>County General Fund</p> <p>Department Funds; billable by the cellular carrier to requesting departments</p>
<p><b>Flood</b></p>	<p><b>University Wash Channel, Stage 3 Project No. 221-1-8-00120-03-12</b></p> <p>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</p>	<p>Riverside County Flood Control and Water Conservation District</p>	<p>Notice To Proceed 2/21/17</p> <p>Completed 11/14/17</p>	<p>Riverside County Flood Control funds</p> <p>Cost: \$3,044,500</p>
<p><b>Flood</b></p>	<p><b>Monroe MDP – Monroe Channel Project No. 1-8-00071 Stage 4</b></p> <p>At request of the City of Riverside, replacement of</p>	<p>Riverside County Flood Control and Water Conservation District</p>	<p>Expected to be advertise in 4th Quarter 2016</p> <p>Notice to Proceed 8/30/17</p> <p>Completed 5/01/18</p>	<p>Riverside County Flood Control funds</p> <p>Cost:\$2,489,067</p>

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	<p>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</p>			
<b>Flood</b>	<p><b>Jurupa – Pyrite MDP Line A-2 Project No. 1-8-00234 Stage 1</b> 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</p>	<p>Riverside County Flood Control and Water Conservation District</p>	<p>30% Plans &amp; R/W Acquisition as of 1/10/17  Projected Start: 9/2018  Projected End: during the life of the plan (2018-2023)</p>	<p>Riverside County Flood Control funds  Cost: \$338,332</p>
<b>Flood</b>	<p><b>University MDP Line 3 Project No. 1-8-09020 Stage 1</b> 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.</p>	<p>Riverside County Flood Control and Water Conservation District</p>	<p>Pending approval  Projected Start: 12/2020  Projected End: during the life of the plan (2018-2023)</p>	<p>Riverside County Flood Control funds  Cost: \$2,926,028</p>

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	Budgeted for scoping study and evaluation of FEMA map floodplain limits only			
<b>Flood</b>	<p><b>Santa Ana River Stabilization Project No. 1-8-00010 Stg. 90</b> 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</p>	Riverside County Flood Control and Water Conservation District	<p>Pending approval 5 year CIP (Capital Improvement Plan)  Projected start and end: during the life of the plan (2018-2023)</p>	<p>Riverside County Flood Control funds  Cost: \$10,685,000</p>
<b>Flood</b>	<p><b>Box Springs Dam – Outlet Modification Project No. 1-8-00041</b> Reconstruct outlet structure to prevent blockage from sediment accumulation</p>	Riverside County Flood Control and Water Conservation District	<p>Pending until Woodcrest Dam is complete 5 year CIP (Capital Improvement Plan)  Projected start and end: during the life of the plan (2018-2023)</p>	<p>Riverside County Flood Control funds  Cost: \$981,842</p>
<b>Flood</b>	<p><b>Sycamore Dam – Outlet Structure Modifications Project No. 1-8-00042</b> This project will upgrade the level of safety and serviceability. Initial project components</p>	Riverside County Flood Control and Water Conservation District	<p>Pending until Woodcrest Dam is complete 5 year CIP (Capital Improvement Plan)  Projected start and end: during the life of the plan (2018-2023)</p>	<p>Riverside County Flood Control funds  Cost: \$1,854,991</p>

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	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.			
<b>Flood</b>	<b>Alessandro Dam Outlet Modification Project No. 1-8-00043</b>  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
<b>Flood</b>	<b>Prenda Dam Outlet Modification Project No. 1-8-00044</b>	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

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	Reconstruct outlet structure to prevent blockage from sediment accumulation		Projected start and end: during the life of the plan (2018-2023)	
<b>Flood</b>	<p><b>Woodcrest Dam Outlet Modification Project No. 1-8-00045</b></p> <p>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</p>	Riverside County Flood Control and Water Conservation District	<p>Development of design plans and specifications on hold until latest Geotechnical investigation is complete</p> <p>Projected Start: March 2019</p> <p>Projected End: during the life of the plan (2018-2023)</p>	<p>Riverside County Flood Control funds</p> <p>Cost: \$2,216,529</p>

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	Riverside Reservoirs			
Flood	<p><b>North Norco Channel Stage 10 Project No. 222-2-8-00140-10-12</b></p> <p>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</p>	Riverside County Flood Control and Water Conservation District	Completed 9/9/14	Riverside County Flood Control funds
Flood	<p><b>Corona MDP Line 5 Stage 1 Project No. 2-8-00280</b></p> <p>This project includes the construction of an underground storm drain beginning in Sherman Avenue south of Railroad Street and</p>	Riverside County Flood Control and Water Conservation District	<p>Pending approval</p> <p>5 year CIP (Capital Improvement Plan)</p> <p>Projected start and end: during the life of the plan (2018-2023)</p>	<p>Riverside County Flood Control funds</p> <p>Cost: \$1,397,201</p>



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	extending down Railroad Street westerly to Smith Street. The City is willing to undertake the design and construction of this project using District funding.			
<b>Flood</b>	<b>Corona MDP Line 52 Stage 1 Project No. 2-8-00350</b> 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
<b>Flood</b>	<b>Coldwater Canyon Structural Improvements Project 2-8-00505</b> 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

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	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			
<b>Flood</b>	<p><b>Coldwater Canyon Floodplain Acquisition Project No. 2-8-00505</b></p> <p>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</p>	Riverside County Flood Control and Water Conservation District	<p>Pending approval</p> <p>5 year CIP (Capital Improvement Plan)</p> <p>Projected start and end: during the life of the plan (2018-2023)</p>	<p>Riverside County Flood Control funds</p> <p>Cost: included in the \$6,005,806 amount for Coldwater Canyon Structural Improvement project listed above</p>

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	would support potential interventions recommended by the report including floodplain buyout			
<b>Flood</b>	<p><b>Southeast Compton Wash At Corona Sanitary landfill Project No. 2-8-09054</b></p> <p>Riverside County Waste Management District has requested assistance solving ongoing flooding and erosion problems along the southeast side of the landfill</p>	Riverside County Waste Management District**	<p>Pending approval</p> <p>5 year CIP (Capital Improvement Plan)</p> <p>Projected start and end: during the life of the plan (2018-2023)</p>	<p>Riverside County Flood Control funds</p> <p>Cost: \$500,000</p>
<b>Flood</b>	<p><b>Lake Mathews Estates Water Quality Pond Project No. 2-8-09058</b></p> <p>Proposed in the "Drainage Water Quality Management Plan for the Lake Mathews Watershed", this roughly 10-acre project is to be located on the south side of Cajalco Road about 3/4-mile west of Wood Road. The project will capture first flush runoff from Cajalco Creek and carry it to an off-channel pond to</p>	Riverside County Flood Control and Water Conservation District	<p>Pending approval</p> <p>5 year CIP (Capital Improvement Plan)</p> <p>Projected start and end: during the life of the plan (2018-2023)</p>	<p>Riverside County Flood Control funds</p> <p>Cost: \$2,794,983</p>

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	be treated and/or infiltrated			
<b>Flood</b>	<p><b>Temescal Wash Floodplain Project No. 2-8-00052</b></p> <p>Acquisition of floodplain area for flood protection, water conservation and habitat mitigation banking</p>	Riverside County Flood Control and Water Conservation District	<p>Pending approval</p> <p>5 year CIP (Capital Improvement Plan)</p> <p>Projected start and end: during the life of the plan (2018-2023)</p>	<p>Riverside County Flood Control funds</p> <p>Cost: \$23,534,000</p>
<b>Flood</b>	<p><b>Arroyo Del Toro Channel Stage 1 Project No. 223-3-8-00170-01-12</b></p> <p>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</p>	Riverside County Flood Control and Water Conservation District	Completed 6/16/15	Riverside County Flood Control funds

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<p><b>Flood</b></p>	<p><b>Ortega Channel Retrofit Project No. 3-8-00070</b> Project will replace a portion of the clog-prone storm drain with a more easily accessible and maintainable open channel</p>	<p>Riverside County Flood Control and Water Conservation District</p>	<p>Pending approval 5 year CIP (Capital Improvement Plan)  Projected start and end: during the life of the plan (2018-2023)</p>	<p>Riverside County Flood Control funds  Cost: \$1,628,761</p>
<p><b>Flood</b></p>	<p><b>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</b> 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</p>	<p>Riverside County Flood Control and Water Conservation District</p>	<p>Stage 1 Completed 06/21/16 Stage 2 Pending approval Projected start and end: during the life of the plan (2018-2023)</p>	<p>Riverside County Flood Control funds  Cost: \$6,398,777</p>

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	Hemet, with small portions extending into the City of San Jacinto and unincorporated Riverside County beginning approximately 300 feet north of Berkley Ave and terminating approximately 200 feet south of Florida			
Flood	<p><b>Homeland MDP Line 2, Stage 2 Project No. 224-4-8-00337-02-12</b></p> <p>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</p>	Riverside County Flood Control and Water Conservation District	Completed 6/5/12	Riverside County Flood Control funds

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	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			
<b>Flood</b>	<p><b>Sunnymead MDP Line P-6 Stage 2 Project No. 224-4-8-00716-02-12</b></p> <p>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 to residents and businesses.</p>	Riverside County Flood Control and Water Conservation District	Completed 3/25/2014	Riverside County Flood Control funds
<b>Flood</b>	<p><b>San Jacinto MDP Line C, Stage 2, Lines C-4, C-5 &amp; B Project No. 224-4-8-00124-02-12</b></p> <p>The District constructed a segment of drainage infrastructure described in the District's San Jacinto Master Drainage Plan, which remedies the</p>	Riverside County Flood Control and Water Conservation District	Completed 6/30/15	Riverside County Flood Control funds

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	<p>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</p>			
<p><b>Flood</b></p>	<p><b>West End Moreno MDP Line LL Project No. 224-4-8-00783-01-12</b> The District constructed a segment of drainage infrastructure described in the District's West End Moreno MDP which remedies ongoing flooding problems in the</p>	<p>Riverside County Flood Control and Water Conservation District</p>	<p>Completed 5/12/15</p>	<p>Riverside County Flood Control funds</p>



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	area, thus resulting in positive impacts to residents and businesses			
<b>Flood</b>	<p><b>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</b></p> <p>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</p>	Riverside County Flood Control and Water Conservation District	Completed 8/23/16	Riverside County Flood Control funds

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	<p>Homeland MDP Line 1, Stage 1 project is currently ongoing with an anticipated completion in February 2017</p>			
<b>Flood</b>	<p><b>Little Lake MDP Line B Stage 2 Project No. 4-8-00265</b> An underground storm drain from just south of Florida Avenue, southerly in Meridian Street to Whittier Avenue.</p>	<p>Riverside County Flood Control and Water Conservation District</p>	<p>Pending approval 5 year CIP (Capital Improvement Plan)  Projected start and end: during the life of the plan (2018-2023)</p>	<p>Riverside County Flood Control funds  Cost: \$6,804,257</p>
<b>Flood</b>	<p><b>San Jacinto River Stage 3 Project No. 4-8-00020</b> "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</p>	<p>Riverside County Flood Control and Water Conservation District</p>	<p>Pending approval  Projected Start: 11/2019  Projected End: during the life of the plan (2018-2023)</p>	<p>Riverside County Flood Control funds  ADP (Area Drainage Plan) Funds  Cost: \$70,000,000</p>

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	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			
<b>Flood</b>	<p><b>Gilman Home Channel Lateral A Stage 3 Gilman Home Channel Stage 90 Project No. 225-5-8-00171-03-12</b></p> <p>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</p>	Riverside County Flood Control and Water Conservation District	Completed 9/22/15	Riverside County Flood Control funds

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	home loans will realize savings of several thousands of dollars per year			
<b>Flood</b>	<p><b>Beaumont MDP Line 16 Stage 1 Project No. 5-8-00201</b></p> <p>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</p>	Riverside County Flood Control and Water Conservation District	<p>Pending approval</p> <p>Projected Start: 12/2020</p> <p>Projected End: during the life of the plan (2018-2023)</p>	<p>Riverside County Flood Control funds</p> <p>Cost: \$5,353,074</p>
<b>Flood</b>	<p><b>Eagle Canyon Dam Stage 1 Project No. 6-8-00190</b></p> <p>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</p>	Riverside County Flood Control and Water Conservation District	Completed 11/17/15	Riverside County Flood Control funds

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	<p>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</p>			
<p><b>Flood</b></p>	<p><b>Palm Springs MDP Line 43 and Lateral 43A Project No. 226-6-8-00163-01-12</b> 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</p>	<p>Riverside County Flood Control and Water Conservation District</p>	<p>Completed 3/15/16</p>	<p>Riverside County Flood Control funds</p>

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	<p>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</p>			
<p><b>Flood</b></p>	<p><b>Murrieta Creek Channel (Phase II &amp; III) Project No. 7-8-00021</b> Murrieta Creek Flood Control Project from Old Town Temecula to Elm Street in Murrieta</p>	<p>Riverside County Flood Control and Water Conservation District/United States Army Corps of Engineers*</p>	<p>Pending approval  5 year CIP (Capital Improvement Plan)  Projected start and end: during the life of the plan (2018-2023)</p>	<p>Riverside County Flood Control funds  Cost: \$82,000,000</p>

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<p><b>Flood</b></p>	<p><b>Whitewater River Levee Restoration Project No. 6-8-00250</b> Restoration work to increase freeboard and bring levee adjacent to Cimarron Golf Resort into compliance with FEMA certification guidelines</p>	<p>Riverside County Flood Control and Water Conservation District</p>	<p>Pending – Full scope of restoration work not yet established but funding figure shown is based on preliminary engineer’s estimate</p> <p>5 year CIP (Capital Improvement Plan)</p> <p>Projected start and end: during the life of the plan (2018-2023)</p>	<p>Riverside County Flood Control funds</p> <p>Cost:1,260,000</p>
<p><b>Flood</b></p>	<p><b>Palm Canyon Wash – Cherley Creek Levee Restoration Stage 90 Project No. 6-8-00040</b> 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</p>	<p>Riverside County Flood Control and Water Conservation District</p>	<p>Expected Advertise Date: 2nd Quarter 2018</p> <p>Projected Start: 08/2019</p> <p>Projected End: during the life of the plan (2018-2023)</p>	<p>Riverside County Flood Control funds</p> <p>Cost: \$6,187,021</p>
<p><b>Flood</b></p>	<p><b>Banning MDP Line D-2 Stage 1 Project No. 5-8-00169</b> 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</p>	<p>RCFC/City of Banning</p>	<p>Notice to Proceed: 5/15/17</p> <p>Completed: 2/27/18</p>	<p>Riverside County Flood Control funds</p>

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	<p>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.</p>			
<p><b>Civil Disorder</b></p>	<p>Trained and equipped Mobile Field Force Teams throughout the county</p>	<p>Riverside County Sheriff</p>	<p>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.</p>	<p>County General Fund</p>

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



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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
<b>Governmental activities:</b>					
<i>Capital assets, not being depreciated:</i>					
Land & easements	\$ 529,885	\$ 7,889	\$ (188)	\$ -	\$ 537,586
Construction in progress	757,220	295,880	(221)	(343,280)	709,599
<b>Total capital assets, not being depreciated</b>	<b>1,287,105</b>	<b>303,769</b>	<b>(409)</b>	<b>(343,280)</b>	<b>1,247,185</b>
<i>Capital assets, being depreciated:</i>					
<b>Infrastructure</b>					
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
<b>Land improvements</b>	<b>110</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>110</b>
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
<b>Total capital assets, being depreciated</b>	<b>5,025,747</b>	<b>110,050</b>	<b>(28,052)</b>	<b>343,256</b>	<b>5,451,001</b>
<b>Less accumulated depreciation for:</b>					
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)
<b>Total accumulated depreciation</b>	<b>(1,957,195)</b>	<b>(199,104)</b>	<b>26,607</b>	<b>24</b>	<b>(2,129,668)</b>
<b>Total capital assets, being depreciated, net</b>	<b>3,068,552</b>	<b>(89,054)</b>	<b>(1,445)</b>	<b>343,280</b>	<b>3,321,333</b>
<b>Governmental activities capital assets, net</b>	<b>\$ 4,355,657</b>	<b>\$ 214,715</b>	<b>\$ (1,854)</b>	<b>\$ -</b>	<b>\$ 4,568,518</b>

Source: (Riverside County Comprehensive Annual Financial Report 2016)



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#### 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.

Table 11: Critical Facilities

FACILITY TYPE	UNICORPORATED	INCORPORATED CITIES	TOTAL FACILITIES	REPLACEMENT VALUE
Airports	4	12	16	\$4,718,671
Correctional Facilities (Jails/Prisons)	4	4	8	\$316,591,306
Educational Institutions	-	-	641	\$1,688,809,964
Fire Stations	41	94	135	\$539,834,410
Law Enforcement Facilities	4	24	28	\$647,199,000
Medical Facilities	1	17	18	\$331,174,000

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

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

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

\*\*Facilities unable to give replacement values.

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Figure 25: Riverside County Capital Assets

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

Function/Program	Fiscal Year Ending June 30				
	2016	2015	2014	2013	2012
<b>County Libraries</b>					
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	-	-	-	-
<b>Riverside University Health Systems - Medical Center</b>					
Major clinics	4	4	4	4	4
Routine and specialty clinics	44	44	44	37	-
Beds licensed	439	439	439	439	439
<b>Fire</b>					
Stations	37	37	37	38	42
Trucks	158	158	145	142	145
<b>Parks and Recreation</b>					
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	-	-	-
<b>Sheriff</b>					
Patrol stations	10	10	10	10	10
Patrol vehicles	930	932	928	916	915
<b>Waste Resources</b>					
Landfills	6	6	6	6	6
Capacity in tons	52,191,202	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.

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**Table 12: Riverside County Communications Infrastructure Facilities**

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

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**Table 13:** Riverside County Public Safety Enterprise Communications System Radio Locations

<b>PSEC - Site Information</b>				
<b>#</b>	<b>Site Name</b>	<b>City</b>	<b>ZIP</b>	<b>Building ID</b>
1	Alessandro	Riverside	92506	RV0908
2	Billy Goat	Aguanga	92536	AZ4704
3	Box Canyon	Desert Center	92239	DC2918
4	Arlington	Riverside	92503	RV1055
5	Avocado Flats	Fallbrook	92028	SND6000
6	Banning	Banning	92220	BA102
7	Big Maria	Blythe	92225	BL328
8	Quail Mesa	Parker		ARZ6102
9	Black Eagle	Desert Center	92239	DC2905
10	Black Jack	Desert Center	92239	DC2906
11	Black Rock	Blythe	92225	BL307
12	Blue Mountain	Colton	92313	New # CTN6500
13	Blythe	Blythe	92225	BL327
14	Box Springs	Riverside	92557	MV1201
15	Brookside	Beaumont	92223	BE1607
16	Cactus City	Indio	92203	IN736
17	Cajalco	Corona	92881	CR410
18	Chuckwalla	Desert Center	92239	DC2917
19	Clinton Keith	Murrieta	92562	MU1320
20	Corn Springs	Desert Center	92239	DC2907
21	Corona	Corona	91720	CR403
22	Corona\Buena Vista	Corona	92882	CR411
23	Edom Hill	Desert Hot Springs	92241	NEW# DH1704 OLD-IN065 (DH065)
24	El Cariso	Lake Elsinore	92530	LE513

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25	Elsinore Peak	Lake Elsinore	92530	LE515
26	Elsinore Peak	Lake Elsinore		LE516
27	Elsinore Peak Generator Building	Lake Elsinore		LE517
28	Estelle Mountain	Perris	92570	PR818
29	Glen Avon	Riverside	92509	New # JV5945 (Old # RV1049)
30	Gold Crown (Pinto) <b>Eliminated</b>	Eliminated	Eliminated	Eliminated
31	Green River	Corona	92880	CR412
32	Hemet	Hemet	92543	HM605
33	Hidden Valley	Parker	85371	ARZ6101
34	Homeland	Homeland	92548	HL4902
35	Indio	Indio	92201	IN706
36	Indio Hill	Indio	92201	IN064 NEW# IN737
37	Iron Mountain	Earp	92242	DC2909
38	Joshua Tree	Joshua Tree	92277	DC2910
39	JTNP - Belle	Joshua Tree National Park	92239	DC2904
40	JTNP - Cottonwood <b>Eliminated</b>	Desert Center	92239	DC2908
41	JTNP - Lost Horse <b>Eliminated</b>	Eliminated	Eliminated	Eliminated
42	Lake Hemet	Mountain Center	92561	MC3603

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43	Lake Matthews	Riverside	92504	RV1048
44	Lake Riverside	Aguanga	92536	AZ4703
45	Leona	Perris	92570	PR819
46	Line	Mecca	92254	ME2008
47	Margarita	Temecula	92592	TM1510
48	Marion Ridge	Idyllwild	92549	ID2503
49	Marshell	Perris	92570	PR820
50	Mead Valley	Perris	92570	PR821
51	Mecca Landfill	Desert Center	92239	DC2911
52	Menifee	Menifee	92584	MN2104
53	Morongo	Cabazon	92230	CB3107
54	Mt. David	Beaumont	92223	BE1601
55	North Mt.	San Jacinto	92583	SJ1404
56	Palen McCoy	Desert Center	92239	DC2920
57	Palo Verde	Ripley	92225	RP4603
58	Paradise	Norco	92860	New # NR3704
59	Beacon Hill	Norco	92860	NR3703
60	Perris	Perris	92570	PR805
61	Pleasants Peak  ELIMINATED	Corona	92879	CR004 ELIMINATED
62	Quail Valley	Quail Valley	92587	QV5102
63	Rancho Carillo/ Caspers Park	Lake Elsinore	92530	LE514
64	Ranger Peak	Idyllwild	92549	BA180
65	Red Mountain	Hemet	92544	HM612
66	Redondo Mesa	Murrieta	92562	MU1321
67	Rice	Desert Center	92239	DC2912
68	Ridge Road	Lake Elsinore	92530	LE512
69	Riverside CAC	Riverside	90501	RV0905



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70	Road 62	Desert Center	92239	DC2921
71	Road 177	Desert Center	92239	DC2913
72	Santa Rosa Peak	Mountain Center	92561	CO201
73	Santiago Peak	Corona	92883	CR413
74	Snow Peak	Morongo Valley	92339	MGV6201
75	Sunnyslope	Riverside	92509	New #JV5939 (Old #RV1050)
76	Temescal	Corona	92883	CR414
77	Timoteo	Moreno Valley	92555	MV1228
78	Toro Peak	Mountain Center	92561	MC3604
79	Vaquero	Temecula	92590	TM1509
80	Vidal Junction	Earp	92242	DC2915
81	Whitewater	Banning	92282	BA184



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#### **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.**

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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.

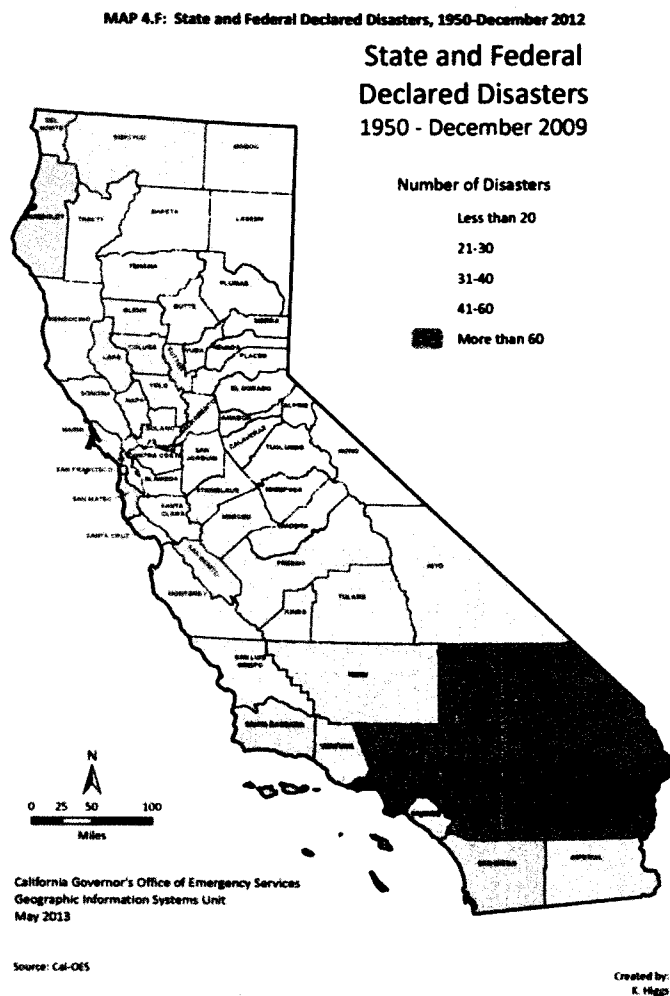


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4.4.2 Loss Factors

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



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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 14: 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 Through 2012	Federal Disaster Declarations Through 2012	Deaths Through 2012*	Injuries Through 2012*	Cal OES-Administered Costs Through 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
<b>Total</b>	<b>417</b>	<b>294</b>	<b>192</b>	<b>970</b>	<b>25,194</b>	<b>\$19,947,437,362</b>

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).

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- 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.



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#### **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



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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)

#### **4.4.4 Critical Infrastructures Maps**

The following maps show Riverside County's Critical Infrastructures.

Continue to next page.



# Riverside Operational Area Multi-Jurisdictional Local Hazard Mitigation Plan (LHMP)

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Map 2: Riverside County Fire Facilities Map

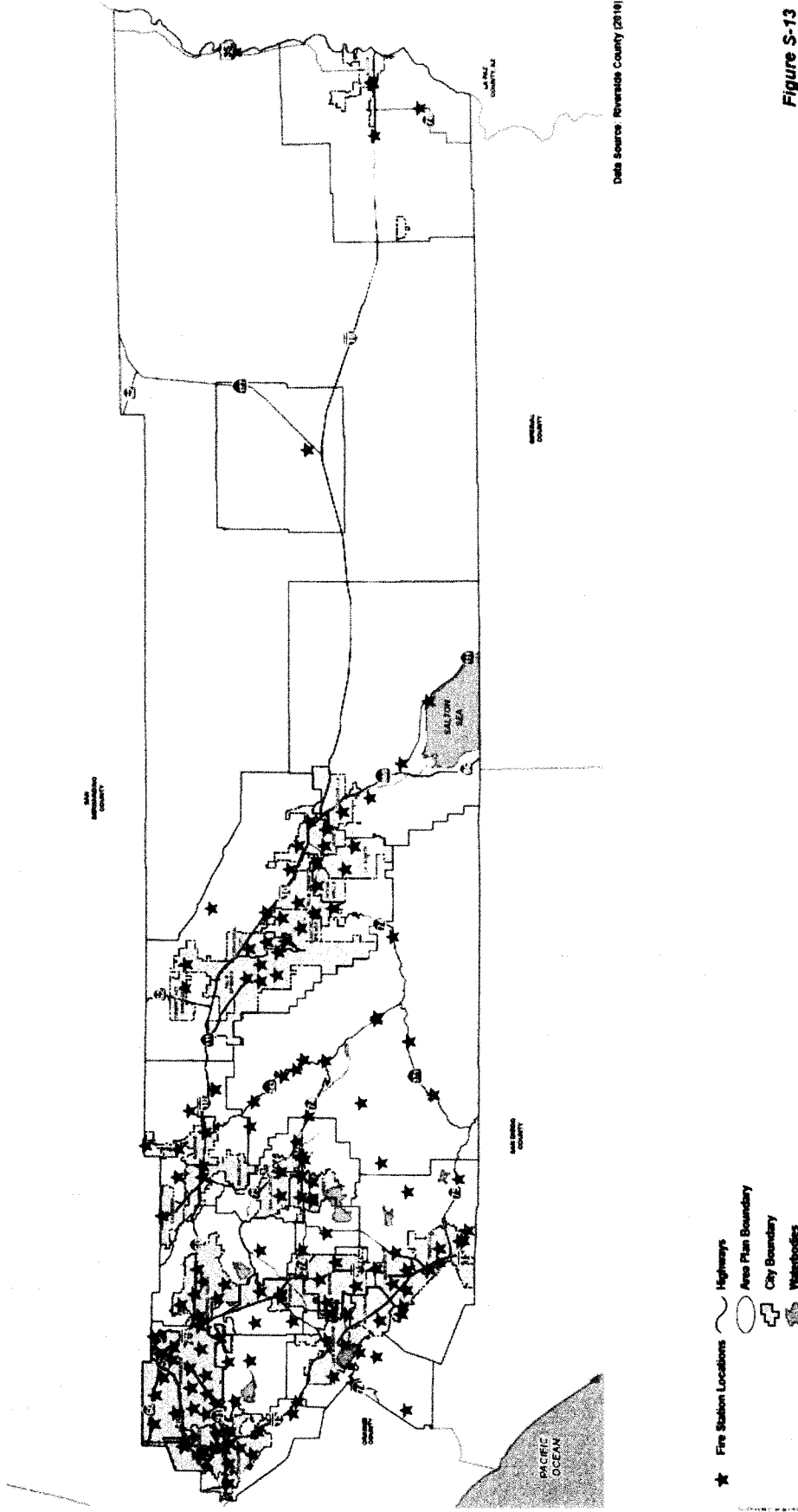


Figure S-13  
INVENTORY OF  
FIRE STATIONS/FACILITIES



December 8, 2015

0 10 20 Miles

© 2015 Riverside County

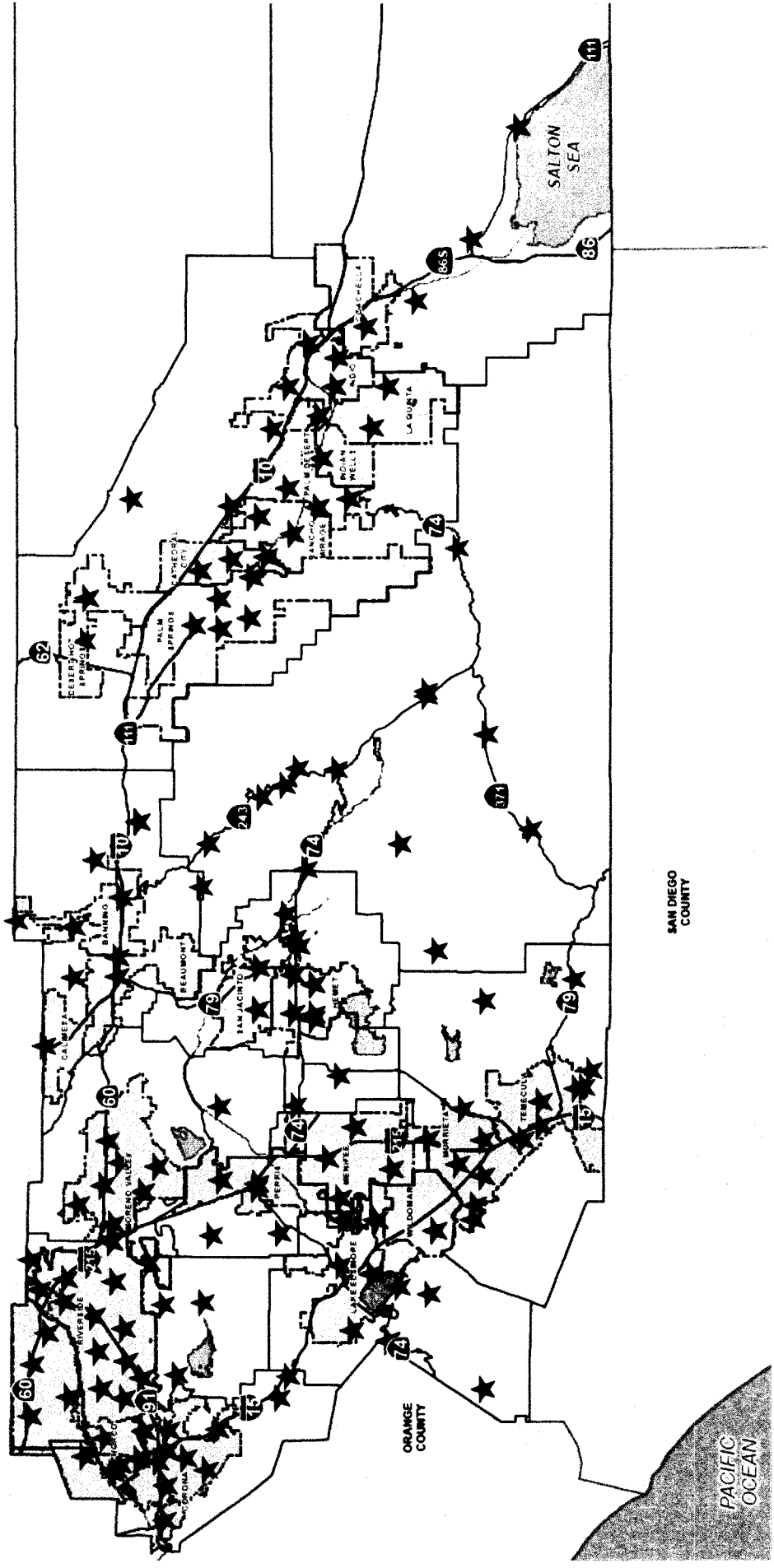


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Map 3: Western Riverside County Fire Facilities Map

SAN  
BERNARDINO  
COUNTY



ORANGE  
COUNTY

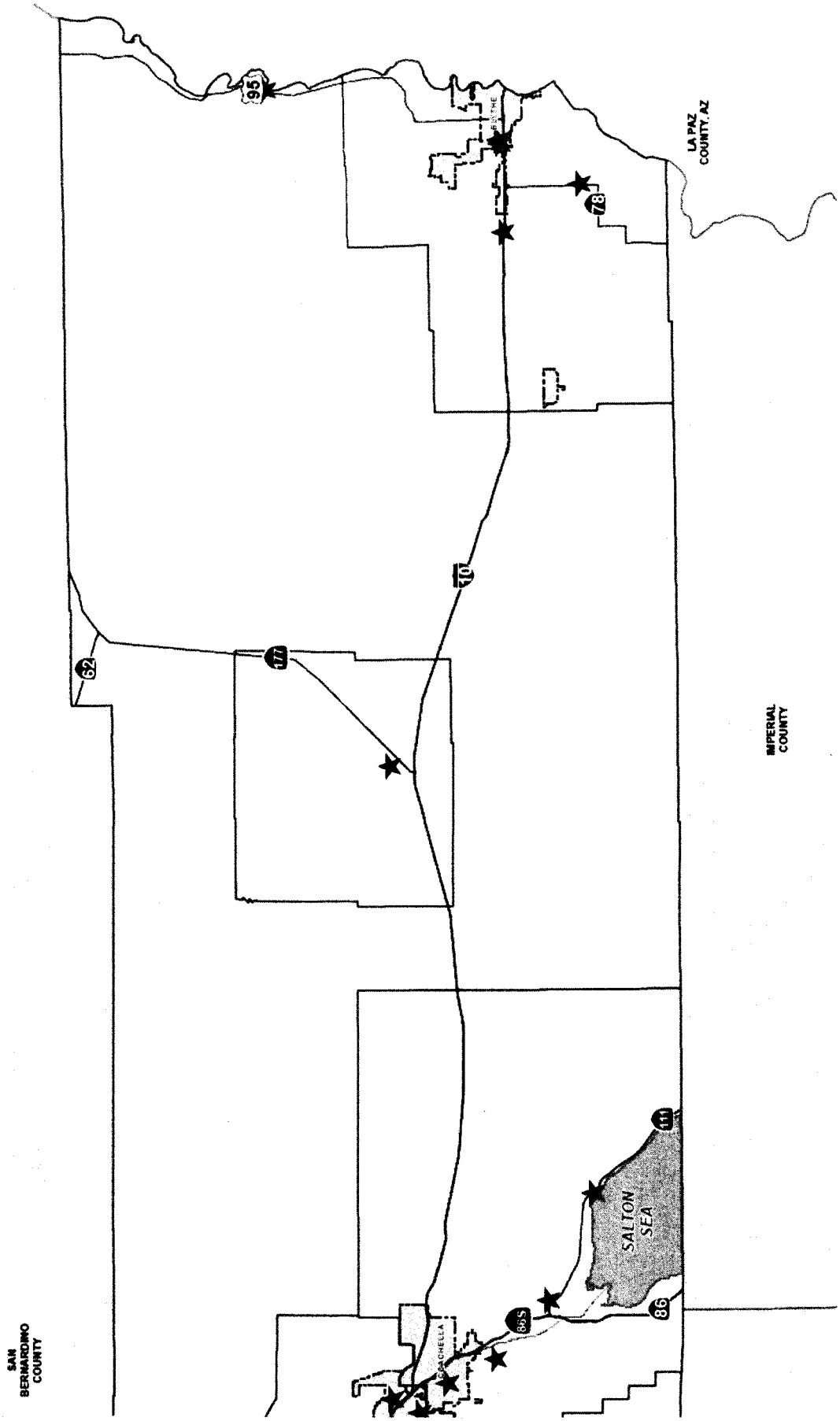
SAN DIEGO  
COUNTY

PACIFIC  
OCEAN

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Multi-Jurisdictional Local Hazard Mitigation Plan (LHMP)

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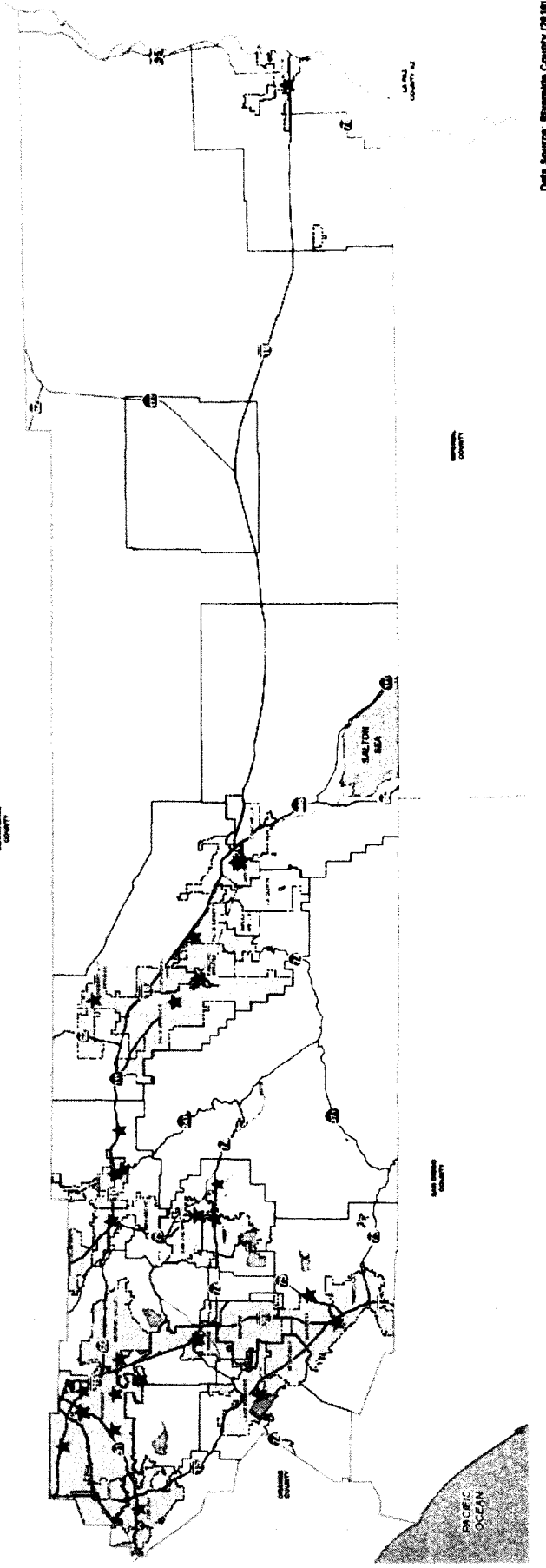
Map 4: Eastern Riverside County Fire Facilities Map



# Riverside Operational Area Multi-Jurisdictional Local Hazard Mitigation Plan (LHMP)

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Map 5: Riverside County Police and Sheriff Facilities Map



Data Source: Riverside County (2017)

- ★ Police and Sheriff Stations
- Highways
- Area Plan Boundary
- City Boundary
- Waterbodies

December 8, 2015  
0 10 20 Miles



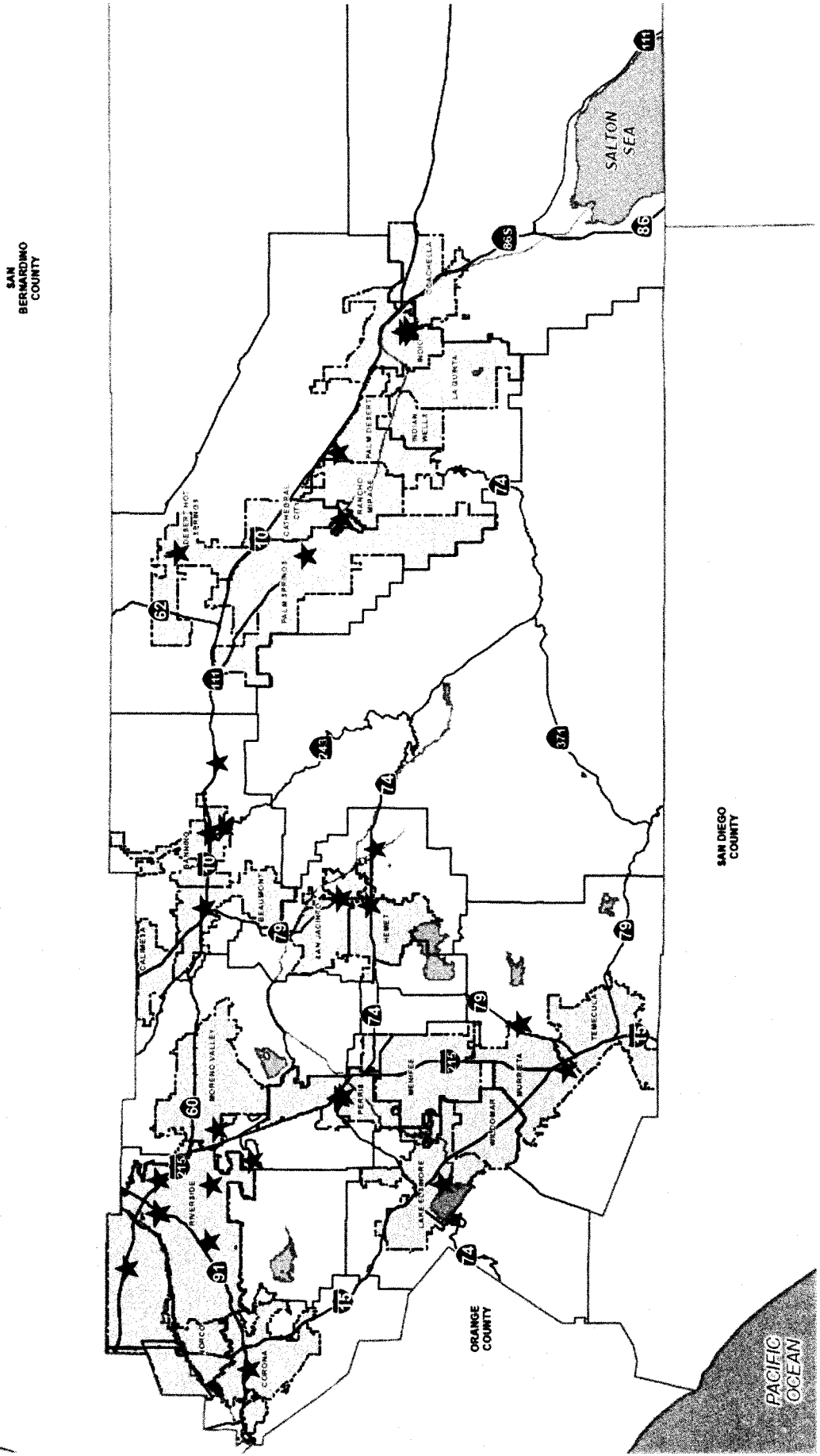
INVENTORY OF EMERGENCY  
RESPONSE FACILITIES

Figure S-14

# Riverside Operational Area Multi-Jurisdictional Local Hazard Mitigation Plan (LHMP)

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Map 6: Western Riverside County Police and Sheriff Facilities Map

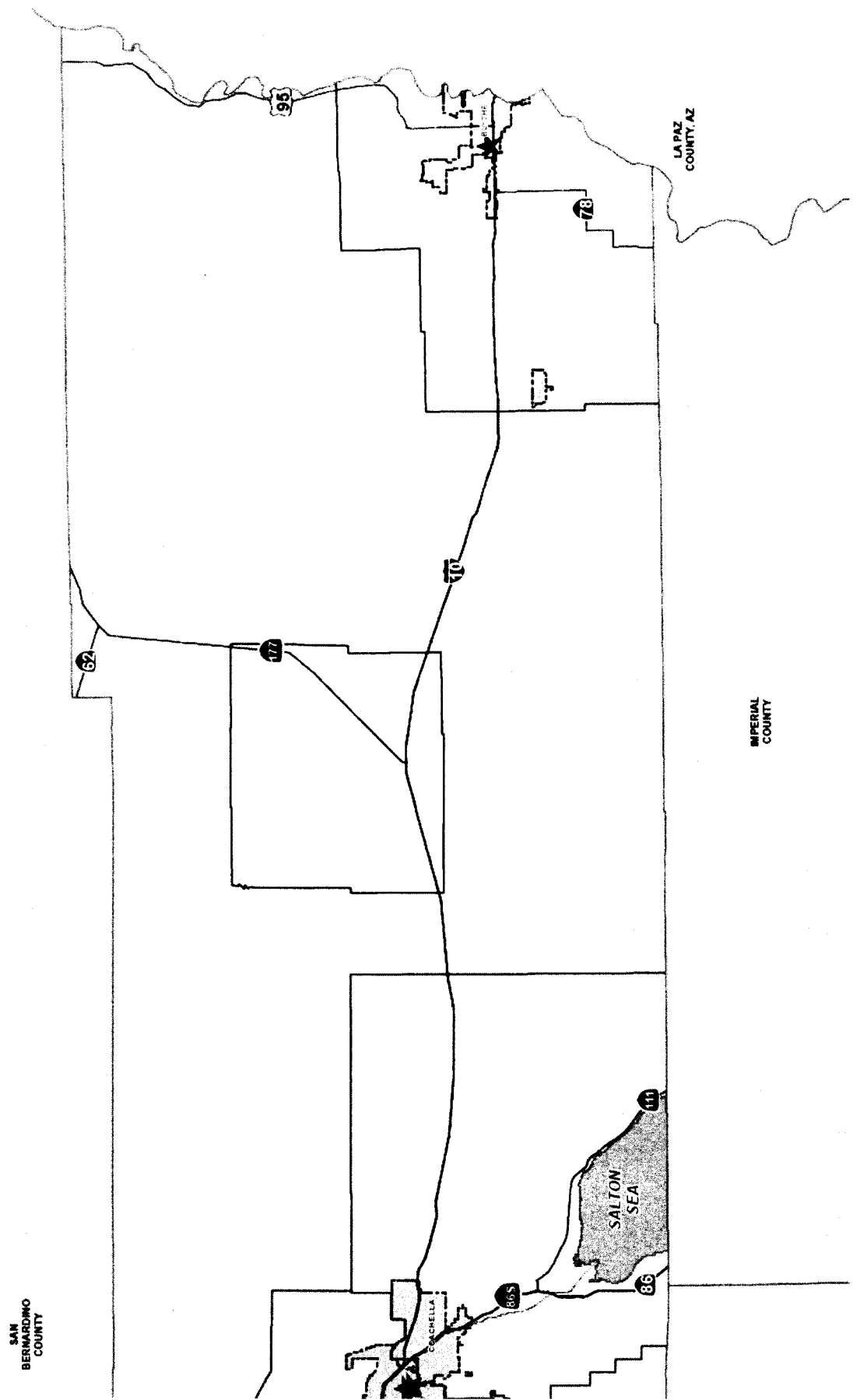




# Riverside Operational Area Multi-Jurisdictional Local Hazard Mitigation Plan (LHMP)

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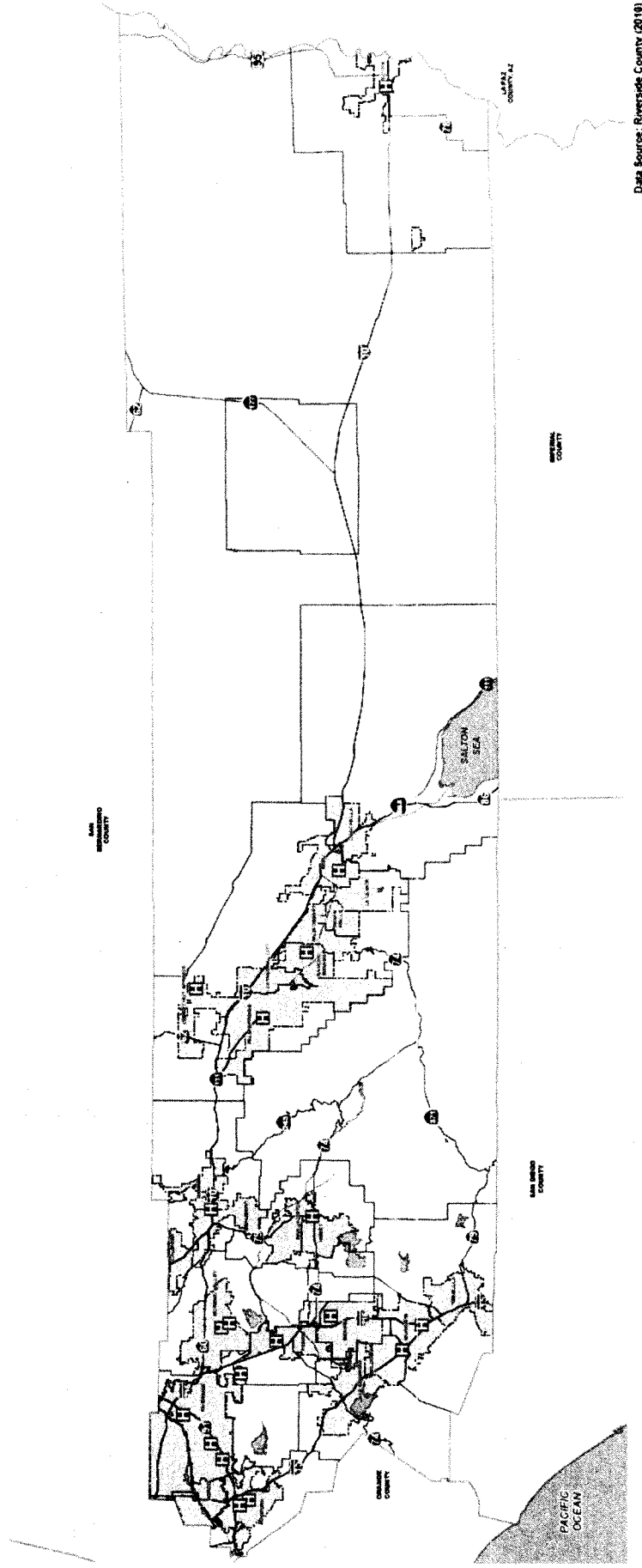
Map 7: Eastern Riverside County Police and Sheriff Facilities Map



# Riverside Operational Area Multi-Jurisdictional Local Hazard Mitigation Plan (LHMP)

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Map 8: Riverside County Hospital Locations Map



Data Source: Riverside County (2018)

- Hospital Locations
- Highways
- Area Plan Boundary
- City Boundary
- Waterbodies

December 8, 2015  
 Miles  
 0 10 20

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INVENTORY OF  
MAJOR HOSPITAL LOCATIONS

Figure S-12

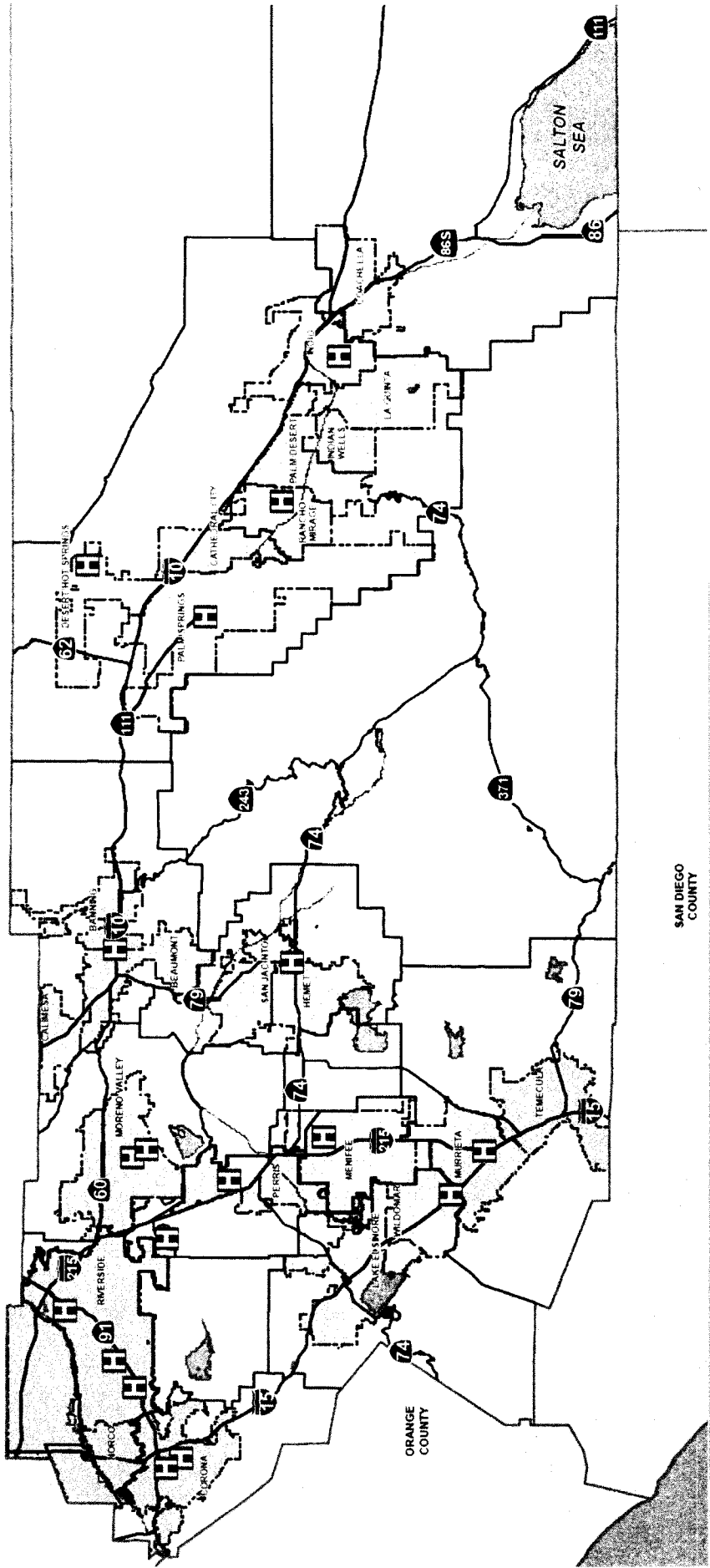


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Map 9: Western Riverside County Hospital Locations Map

SAN  
BERNARDINO  
COUNTY



SAN DIEGO  
COUNTY

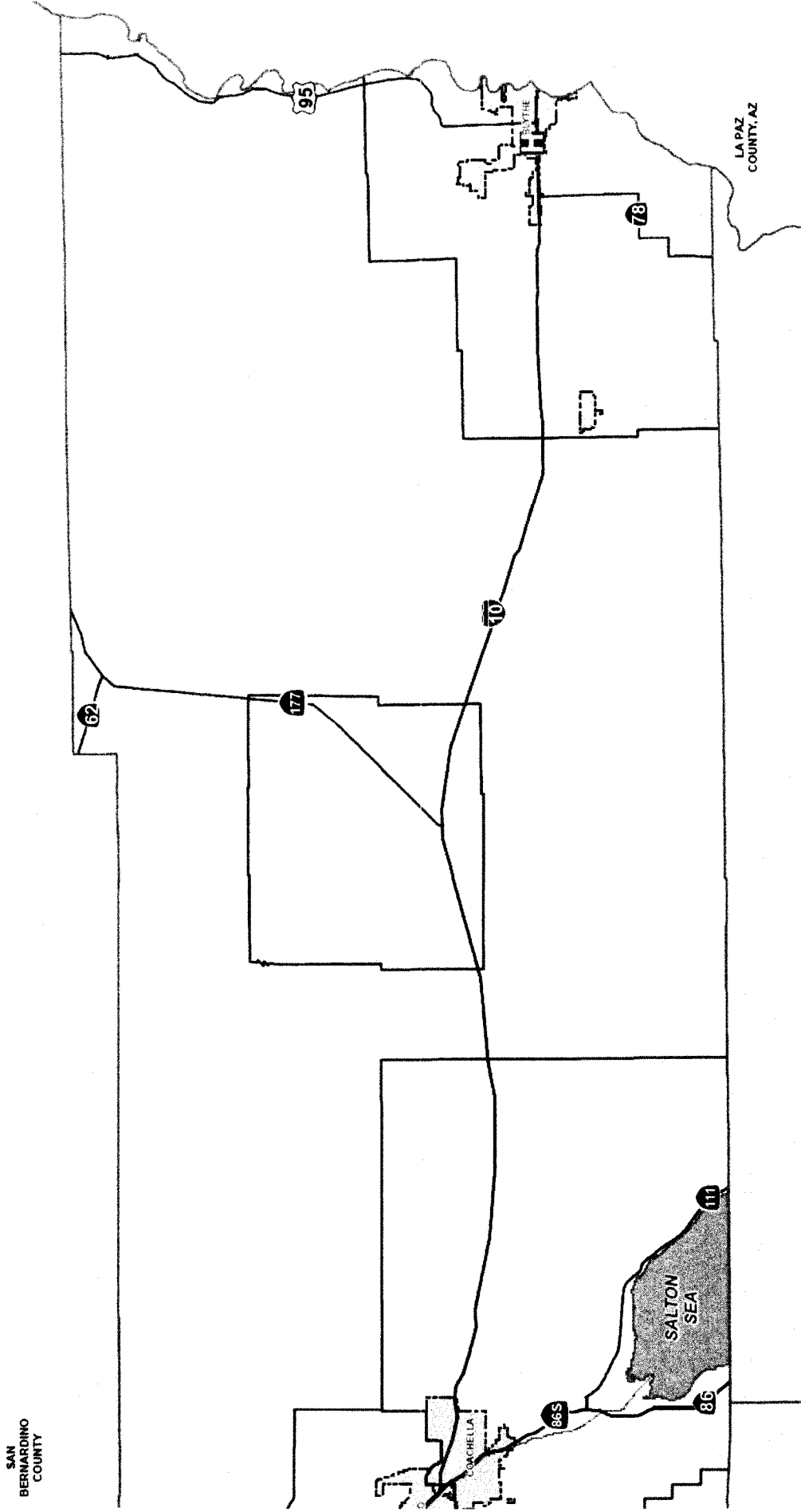
ORANGE  
COUNTY



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Map 10: Eastern Riverside County Hospital Locations Map

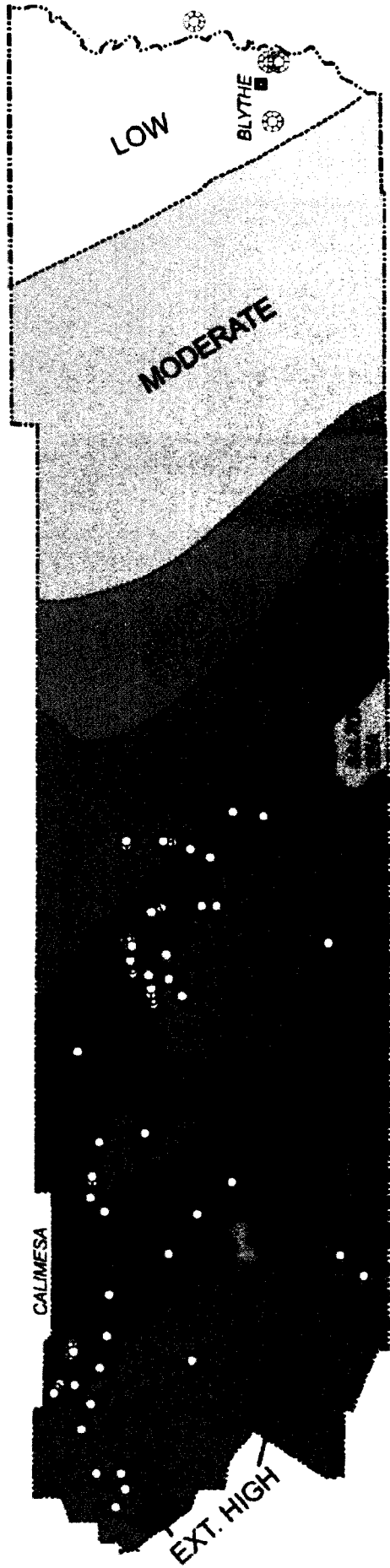




# Riverside Operational Area Multi-Jurisdictional Local Hazard Mitigation Plan (LHMP)

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## Map 11: Riverside County Communication Facilities and Ground Shaking Map



Data Source: Earth Consultants International (2003)

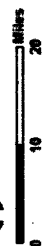
Location of Communication Facility: Television and Radio Stations  
and Businesses with a Commercial License  
(based on HAZUS 99 inventory.)

**General Ground Shaking Risk**

- Low - <10% g
- Moderate - 10-20% g
- High - 20-30% g
- Very High - 30-40% g
- Ext. High - >40% g



December 8, 2015



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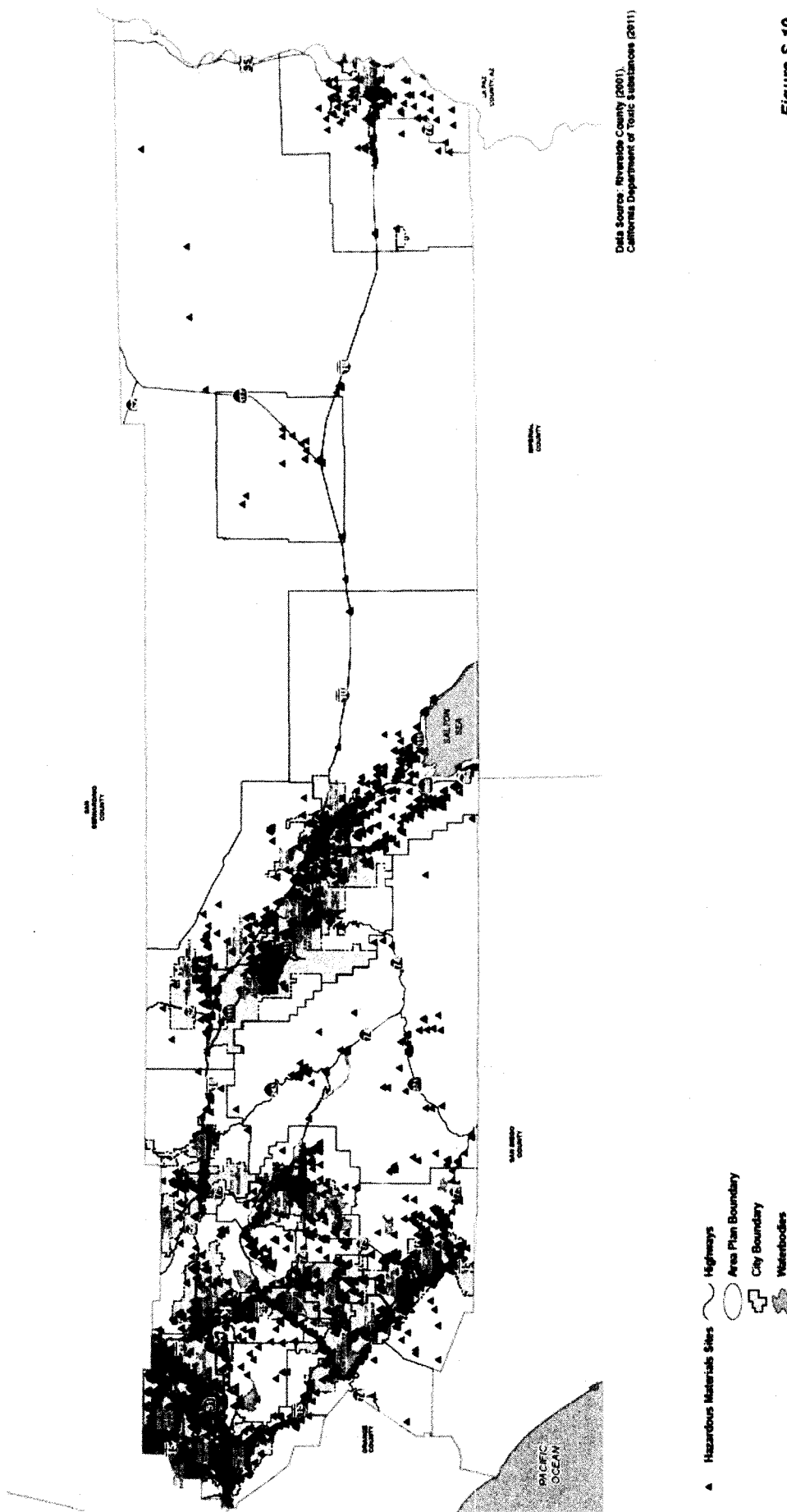
### INVENTORY OF COMMUNICATION FACILITIES

Figure S-16

# Riverside Operational Area Multi-Jurisdictional Local Hazard Mitigation Plan (LHMP)

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Map 12: Riverside County Hazardous Materials Locations Map



December 8, 2015  
0 10 20 Miles

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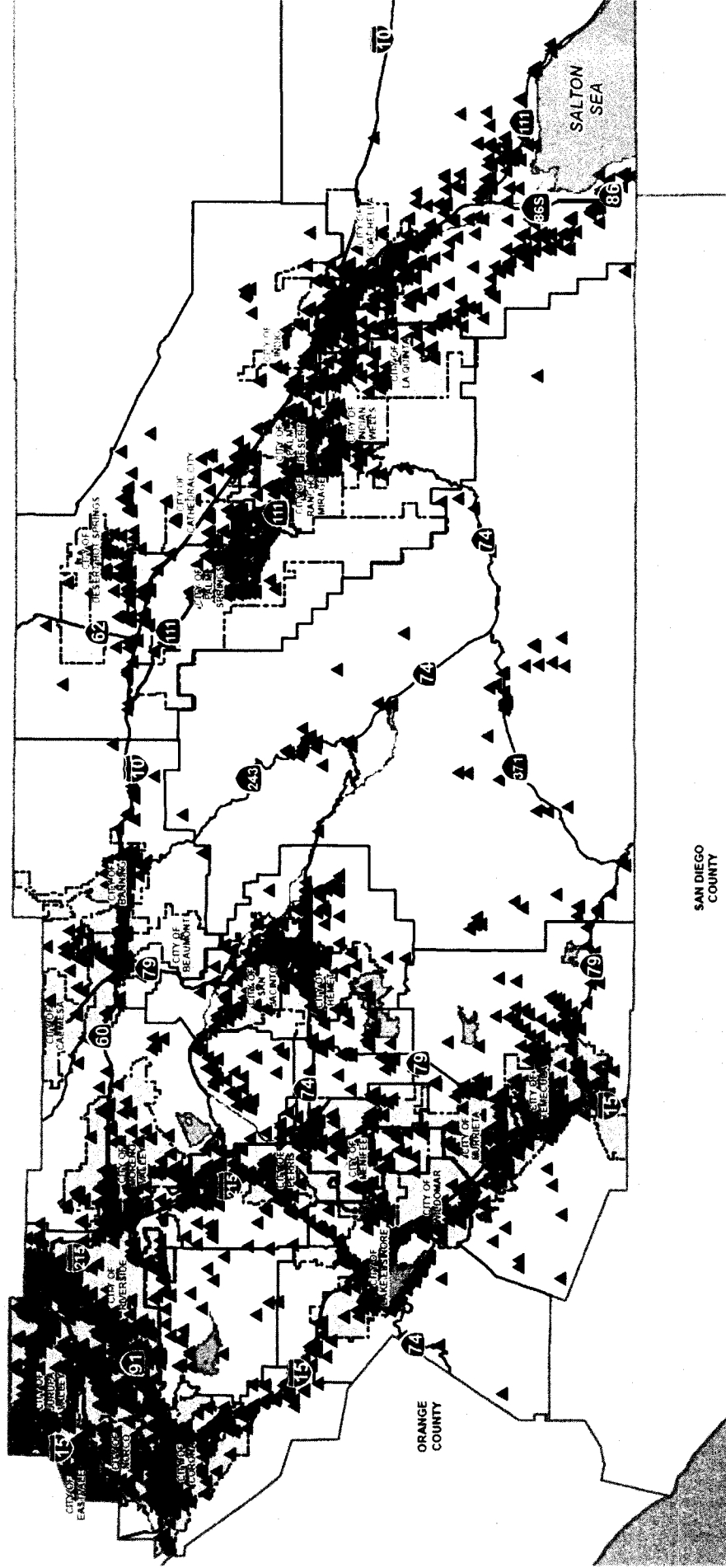
INVENTORY OF FACILITIES STORING  
HAZARDOUS MATERIALS

Figure S-19

# Riverside Operational Area Multi-Jurisdictional Local Hazard Mitigation Plan (LHMP)

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Map 13: Western Riverside County Hazardous Materials Locations Map



SAN BERNARDINO COUNTY

SAN DIEGO COUNTY

ORANGE COUNTY

SALTON SEA