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# **CITY OF REDLANDS LOCAL HAZARD MITIGATION PLAN**

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**Resubmitted: March 4, 2005**

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# **Hazard Mitigation Plan City of Redlands, CA**

**Adoption Date: November 2, 2004**

**Submitted: 10/04/2004**

**Updated: 02/18/2005**

**This Plan was developed in Partnership with The  
Redlands Unified School District and The University of  
Redlands**

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## **Section 1 – Introduction**

### **1.1 General Description**

Emergencies and disasters cause death or leave people injured or displaced, cause significant damage to our communities, businesses, public infrastructure and our environment, and cost tremendous amounts in terms of response and recovery dollars and economic loss.

Hazard mitigation reduces or eliminates losses of life and property. After disasters, repairs and reconstruction are often completed in such a way as to simply restore to pre-disaster conditions. Such efforts expedite a return to normalcy; however, the replication of pre-disaster conditions results in a cycle of damage, reconstruction, and repeated damage. Hazard mitigation ensures that such cycles are broken and that post-disaster repairs and reconstruction result in a reduction in hazard vulnerability.

While we cannot prevent disasters from happening, their effects can be reduced or eliminated through a well-organized public education and awareness effort, preparedness and mitigation. For those hazards, which cannot be fully mitigated, the community must be prepared to provide efficient and effective response and recovery.

### **1.2 Purpose and Authority**

The Disaster Mitigation Act of 2000 (DMA 2000), Section 322 (a-d) requires that local governments, as a condition of receiving federal disaster mitigation funds, have a mitigation plan that describes the process for identifying hazards, risks and vulnerabilities, identify and prioritize mitigation actions, encourage the development of local mitigation and provide technical support for those efforts. This mitigation plan serves to meet those requirements.

### **1.3 Community Information**

This section provides a broad perspective, brief history and describes the makeup and development of the community.

#### **A. Topography:**

The City of Redlands is located in southwestern San Bernardino County, 8 miles east of the City of San Bernardino, and 63 miles east of the Los Angeles metropolitan area. Primarily a residential community, Redlands incorporates approximately 37.5 square miles, and has a population of 68,800. Features include the Santa Ana River to the north, the Crafton Hills to the east, the San Timoteo Canyon to the south, and the City of Loma Linda to the west. Recognized geographical hazards include the San Andreas Fault Zone, generally located one mile north of the City of Redlands, the San Jacinto Fault Zone, generally located in San Timoteo Canyon, and 100-year flood zones which include the Santa Ana River System to the north, the San Timoteo Creek System generally located in San Timoteo Canyon, and the mission Zanja Creek System, traversing east-west through the city limits. The I-10

freeway bisects the City east to west, and State Route 30 junctions from the I-10 Freeway close to the west city limit.

**B. Climate:**

Redlands' climate is typical of Southern California inland areas. Residents experience mild winters, low annual rainfall, and prolonged, dry summers.

**C. Major River/Watersheds:**

Four principal streams drain into Redlands, each of which presents identifiable flood hazards at peak flows.

The Santa Ana River/Mill Creek, which emerges from its mountain canyon 5 miles northeast of Redlands, spreads out in shallow, braided channels more than a 1.5 mile-wide wash, mantled with fluvial debris. In 1965, 1966, 1969, 1976, 1980, 1992, 1993, and 1995 the flood waters from the upper regions of the Santa Ana River/Mill Creek were responsible for extensive damage to Orange Street and Alabama Street, ranging from washouts from five to six-foot high flood waters, to extensive, permanent damages from uncontrollable runoff from the upper regions of the San Bernardino mountains.

The Mission Zanja, also known as Mill Creek Zanja and Mission Storm Drain, is part of the area's history. The Mission Zanja was constructed for water supply in 1819. Diverting water from Mill Creek, the Zanja carried water for 12 miles to support the San Bernardino Assistencia and surrounding farms and ranches. Today, as it traverses an east/west direction, the Zanja drains major portions of the City through various storm drain systems. During significant storm periods, the Zanja poses a serious threat to the community, and is presently being studied by the U. S. Army Corps of Engineers to determine if Corps funding might be available for design and construction of facilities to remove the flood hazard. The Mission Zanja, from the 2800 block of Mentone Boulevard to the west edge of Sylvan Park, is a designated landmark, and part of the National Register of Historic Places.

**D. Population/Demographics:**

Redlands population: 68,800, with a median age of 35.1 years. See the attached Redlands City, California Statistics and Demographics drawn from the United States Census of 2000.

**E. Economy:**

The City's economic heritage is derived primarily from the citrus industry. Although no longer the prime industry of the city, large and small groves still provide a significant tie to early beginnings. The land boom of the late 1880s was a major influence on the local economy, and even after the collapse in 1888, Redlands was not only well established, but prospered. Redlands' warm winter climate drew Eastern visitors regularly, and for a period in the early 1900's the City was a resort area. Ironically, a momentary lapse in climate in January 1913 was a catastrophe to the orange industry. Citrus losses proved an economic and social disaster; Redlands lost 2,000 residents, and only after World War I did building and neighborhood development renew.

The interval from 1920-1930 was another period of growth and economic prosperity, largely due to the citrus industry. The town's other "industry," the University of Redlands, expanded as well and a general increase in population occurred. Another regional contributor was the establishment of Norton Air Force Base, which remained an active military facility until 1994. Because of Redlands' historic and cultural heritage, the City attracted commissioned military personnel as residents. The closure of Norton Air Force Base, coupled with a declining economy beginning in 1990, had a vital impact on the City's economic stability. Due to declining development in general, the City experienced a dwindling General Fund, resulting in a severe decrease in community services.

Enactment of a Utility User's Fund, sunsetting in 1998, has supplemented portions of the General Fund, but spending is conservative pending Supreme Court decisions affecting the legality of that revenue which was enacted by the City Council, rather than by legislative process. The Comprehensive Annual Financial Report for the year ended June 30, 1995 suggests a continuation of economic improvement for the City of Redlands. City services and infrastructure were revitalized by the first full year of the newly implemented utility user's tax while sales tax revenues showed some significant improvement over the past several years. The City survived with relatively little impact, a County-wide \$3.8 billion property value reduction and actively pursued some major development projects.

#### **E. Industry:**

Commercial, Industrial, and Office development within the City of Redlands Planning area together account for 6% land use. Office development occurs throughout the City, but is particularly concentrated in areas such as the Downtown and Orange Tree Lane areas as well as in the vicinity of Redlands Community Hospital. There are several sites within Redlands that may be termed heavy industrial. All of these occur in or along the Santa Ana Wash, including aggregate mining activities adjacent to Orange Street. Light industrial uses are situated primarily in the East Valley Corridor, Downtown, and Mentone areas while commercial uses are located in the historic downtown, Tri-Cities complex, along Redlands Boulevard, and in Mentone. Neighborhood shopping centers are distributed to serve most of the developed City.

#### *Associated Files*

File Title: [Capability Assessment Listing](#)

File Description: This document provides all Fiscal, Technical and existing planning authorities.

Uploaded: 7/27/2004

File Title: [Title 19 of the California Government Code](#)

File Description: This document provides Technical authority for the City of Redlands.

Uploaded: 7/27/2004

File Title: [Flood Hazard Mitigation Plan](#)

File Description: This City of Redlands document is included in the Planning Authorities for this document.

Uploaded: 7/27/2004

File Title: [2004 Disaster Resistant California](#)

File Description: This is a copy of a memorandum announcing the City of Redlands receipt of the 2004 Disaster Resistant California Community Award, which identified hazard mitigation programs conducted by the City of Redlands.

Uploaded: 6/24/2004

File Title: [Demographics](#)

File Description: This is a detailed listing of demographics for the City of Redlands drawn from the 2000 Census.

Uploaded: 7/27/2004

## Section 2 - Jurisdiction Information

### 2.1 Adoption by local governing body

<i>REQUIREMENT</i> §201.6(c)(5):	[The local hazard mitigation plan shall include] documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan (e.g., City Council, County Commissioner, Tribal Council) ...
-------------------------------------	--

#### **Primary Point of Contact**

The Point of Contact for information regarding this plan is:

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## 2.2 Multi-Jurisdictional plan adoption

<i>REQUIREMENT</i> <i>§201.6(c)(5):</i>	For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must document that it has been formally adopted.
--	--

*Not Applicable*

### Section 3 - Planning Process Documentation and Public Involvement

<b>REQUIREMENT</b> <i>IFR §201.6(c)(1):</i>	An open public involvement process is essential to the development of an effective plan. In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include: (1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval; (2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process; and (3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information. [The plan shall document] the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.
--	--

#### 3.1 Planning Team Member Information

This Hazard Mitigation Plan was compiled and authored by members of the following Planning Team:

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- **John Biggie**  
**Transportation Manager**  
*Description of Involvement:* Disaster Council Member, Local Hazard Mitigation Planning Team Member, and Local Mitigation Plan Partner

*Contact Information:*  
 Redlands Unified School District  
 P.O. Box 3008  
 Redlands, CA 92373  
 909-307-5370  
[John\\_biggie@Redlands.k12.ca.us](mailto:John_biggie@Redlands.k12.ca.us)
- **Rick Blackburn**  
**Disaster Coordinator**  
*Description of Involvement:* City of San Bernardino Multi-Jurisdictional Partner

*Contact Information:*  
 City of San Bernardino  
 300 N. D Street  
 San Bernardino, CA 92405  
 909-384-5115  
[Blackburn\\_Ri@ci.san-bernardino.ca.us](mailto:Blackburn_Ri@ci.san-bernardino.ca.us)

- **Dennis Bolt**  
**Member**  
*Description of Involvement:* Public Planning Meeting Invitee

*Contact Information:*  
Parks Commission  
1621 Sundown Court  
Redlands, CA 92374  
909-774-2226
  
- **Brenda Brennen**  
**Representative**  
*Description of Involvement:* Medical Corp Team & Planning Team

*Contact Information:*  
Sacred Heart Academy  
30603 Los Altos  
Redlands, CA 92373  
909-794-2999  
[brendabrennan@adelphia.net](mailto:brendabrennan@adelphia.net)
  
- **Barry Bruins**  
**Retired Peace Officer**  
*Description of Involvement:* Community at large

*Contact Information:*  
Community at Large  
338 Nottingham Drive  
Redlands, CA 92373  
909-793-9753  
[Bear49r@hotmail.com](mailto: Bear49r@hotmail.com)
  
- **James Bueermann**  
**Chief Of Police**  
*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
City of Redlands  
P. O. Box 3005, 35 Cajon Street  
Redlands, CA 92373  
909-798-7681  
[jbueerman@redlandspolice.org](mailto:jbueerman@redlandspolice.org)
  
- **Dr. Larry Burgess**  
**Director**  
*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
A.K. Smiley Library  
147 E. Vine St.  
Redlands, CA 92373  
909-798-7565

- **Char Burgess**  
**Dean of Students**  
*Description of Involvement:* Public Planning Team Invitee

*Contact Information:*  
University of Redlands  
P. O. Box 3080, 1200 E. Colton Avenue  
Redlands, CA 92373
- **Larry Butler**  
**Principal Construction Supt**  
*Description of Involvement:* Disaster Council Representative

*Contact Information:*  
City of Redlands  
P.O. Box 3005, Suite 222  
Redlands, CA 92373  
909-798-7655  
[lbutler@cityofredlands.org](mailto:lbutler@cityofredlands.org)
- **James Cavanaugh**  
**Member**  
*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
Downtown Redlands Business Association  
Sisters, 21 E. Citrus Avenue  
Redlands, CA 92373
- **Ruth Cook**  
**Member**  
*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
Planning Commission  
409 W. Olive Avenue  
Redlands, CA 92373
- **Rolland Crawford**  
**Fire Chief**  
*Description of Involvement:* Multi-Jurisdictional Partner

*Contact Information:*  
City of Loma Linda Fire Dept  
25541 Barton Road  
Loma Linda, CA 92354  
909-799-2852  
[rcrawford@ci.loma-linda.ca.us](mailto:rcrawford@ci.loma-linda.ca.us)
- **Rick Cross**  
**Public Works Ops Manager**  
*Description of Involvement:* Disaster Council Member

*Contact Information:*  
City of Redlands  
P.O. Box 3005, Suite 222  
Redlands, CA 92373  
909-798-7655  
[rcross@cityofredlands.org](mailto:rcross@cityofredlands.org)

- **Tony Crotinger**  
**Member**

*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
Downtown Redlands Business Association  
819 W. Colton Avenue  
Redlands, CA 92374

- **William Cunningham**  
**Representative**

*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
Community at Large  
421 San Timoteo Canyon Road  
Redlands, CA 92373

- **Jack Dangermond**  
**Owner, CEO, ESRI**

*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
ESRI  
380 New York Street  
Redlands, CA 92373

- **Shefchik Daniel**  
**Lieutenant**

*Description of Involvement:* Disaster Council Member and Local Hazard Mitigation Planning Team Member

*Contact Information:*  
City of Redlands Police Department  
P. O. Box 3005  
Redlands, CA 92373  
909-798-7612  
[dshefckik@redlandspolice.org](mailto:dshefckik@redlandspolice.org)

- **John Davidson**  
**City Manager**

*Description of Involvement:* Disaster Council Executive Director and Promulgation Authority

*Contact Information:*

City of Redlands  
P. O. Box 3005  
Redlands, CA 92373  
909-798-7510  
[jdavidson@cityofredlands.org](mailto:jdavidson@cityofredlands.org)

- **Russ DeKock**  
**Principal**

*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
Arrowhead Christian Academy  
105 Tennessee Street  
Redlands, CA 92373

- **Lesley Dwight**  
**Representative**

*Description of Involvement:* Citizen At Large

*Contact Information:*  
Community at large  
1439 Campus Avenue  
Redlands, CA 92374  
909-794-2836  
[lrwright@yahoo.com](mailto:lrwright@yahoo.com)

- **Daniel J. Eliseuson**  
**Representative**

*Description of Involvement:* Disaster Council Member and Local Hazard Mitigation Plan Member

*Contact Information:*  
Community at Large  
700 E. Redlands Blvd., Suite 249  
Redlands, CA 92374  
909-307-8522  
[writersubrosa@aol.com](mailto:writersubrosa@aol.com)

- **Gena Engelfried**  
**Principal**

*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
Grove High School  
1890 Orange Avenue  
Redlands, CA 92373

- **Mel Enslow**  
**Fire Chief**

*Description of Involvement:* Local Hazard Mitigation Planning Team Member

*Contact Information:*  
City of Redlands

P. O. box 3005, 35 Cajon Street, Suite 12  
Redlands, CA 92373  
909-78-7600  
[menslow@confire.org](mailto:menslow@confire.org)

- **Helen Farnam  
Manager**

*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
Excalibre Management  
2860 Mill Creek Road  
Mentone, CA 92359

- **Andrea Feathers  
Reporter**

*Description of Involvement:* Public Meeting Invitee/Press

*Contact Information:*  
Redlands Daily Facts  
700 Brookside Avenue  
Redlands, CA 92373

- **Sam Flechtner  
Response & Preparedness Spec**

*Description of Involvement:* Disaster Council Member and Local Hazard Mitigation Planning Team Member.

*Contact Information:*  
American Red Cross  
202 W. Rialto Avenue  
San Bernardino, CA 92408  
909-888-1481  
[flechtner.arciiec@verizon.net](mailto:flechtner.arciiec@verizon.net)

- **Sandra French  
Member**

*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
Historic Commission  
45 S Center Street  
Redlands, CA 92373

- **Mick Gallagher  
Member**

*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
Redevelopment Advisory Commission  
1467 Smiley Heights Drive  
Redlands, CA 92373

- **Barbara Garcia**  
**Member**  
*Description of Involvement:* Public Planning Meeting Invitee

*Contact Information:*  
 Business & Economic Advisory Board  
 Fremont Investments, 128 E. State Street  
 Redlands, CA 92373
- **David Garcia**  
**Member**  
*Description of Involvement:* Public Planning Meeting Invitee

*Contact Information:*  
 Public Works Commission  
 1530 Helena Court  
 Redlands, CA 92373  
 909-793-4174  
[RufusFred@aol.com](mailto:RufusFred@aol.com)
- **Gary George**  
**Councilmember**  
*Description of Involvement:* City Council Member/Promulgation Authority

*Contact Information:*  
 City of Redlands  
 P. O. Box 3005  
 Redlands, CA 92373  
 909-798-7510  
[ccouncil@cityofredlands.org](mailto:ccouncil@cityofredlands.org)
- **Gilberto Gil**  
**Councilmember**  
*Description of Involvement:* Mayor Pro Tempore, City Council Member and Promulgation Authority

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 City of Redlands  
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 Redlands, CA 92373  
 909-798-7510  
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- **Patricia Gilbreath**  
**Councilmember**  
*Description of Involvement:* City Council Member and Promulgation Authority

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 City of Redlands  
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 909-798-7510  
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- **Joe Gonzales**  
**Member**  
*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
Northside Advisory Committee  
1026 Webster Street  
Redlands, CA 92374
- **Steve Guggisberg**  
**Member**  
*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
Parks Commission  
1329 Sylvan Blvd  
Redlands, CA 92373
- **Conrad Guzkowski**  
**Member**  
*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
Redlands Advisory Commission  
744 E. Mariposa Drive  
Redlands, CA 92373
- **Janet Hanson**  
**Member**  
*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
Historic Commission  
1328 Llama Drive  
Redlands, CA 92373
- **Jon Harrison**  
**Councilmember**  
*Description of Involvement:* City Council Member and Promulgation Authority

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City of Redlands  
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[ccouncil@cityofredlands.org](mailto:ccouncil@cityofredlands.org)
- **Howard Hatch**  
**Emergency Services Office Superintendent**  
*Description of Involvement:* Multi-Jurisdictional Partner

*Contact Information:*

San Bernardino County Office of Emergency Services  
1743 Miro Way  
Rialto, CA 92376  
909-356-3998  
[hhatch@fire.sbfire.sbcounty.gov](mailto:hhatch@fire.sbfire.sbcounty.gov)

- **Bob Hawkins**  
**Executive Director**  
*Description of Involvement:* Public Meeting Invitee  
  
*Contact Information:*  
Kimberly Shirk Association  
1325 Prospect Drive  
Redlands, CA 92373
- **Al Hernandez**  
**Downtown Redlands Bus Assoc**  
*Description of Involvement:* Public Meeting Invitee  
  
*Contact Information:*  
Citrograph Printing  
113 E. State Street  
Redlands, CA 92373
- **Roberto Hernandez**  
**Reporter**  
*Description of Involvement:* Public Meeting Invitee/Press  
  
*Contact Information:*  
Riverside Press Enterprise  
421 E. Citrus Avenue  
Redlands, CA 92373  
9097933221
- **Cheryl Heseen**  
**Executive Director**  
*Description of Involvement:* Public Meeting Invitee  
  
*Contact Information:*  
Redlands Family Service Association  
402 W. Colton Avenue  
Redlands, CA 92374
- **Mobile Home**  
**Manager**  
*Description of Involvement:* Public Meeting Invitee  
  
*Contact Information:*  
Orange Grove Mobile Estates  
626 Dearborn  
Redlands, CA 92374

- **Retirement Home Administrator**  
*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
 Plymouth Village  
 900 Salem Drive  
 Redlands, CA 92373
- **Nikki Honore Purchasing Supervisor**  
*Description of Involvement:* Disaster Council Member and Vendor source/purchasing contact.

*Contact Information:*  
 City of Redlands  
 P. O. Box 3005  
 Redlands, CA 92373  
 909-798-7525  
[nhonoree@cityofredlands.org](mailto:nhonoree@cityofredlands.org)
- **Mike Huffstutler Executive Director**  
*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
 Bear Valley Mutual Water Company  
 101 E. Olive Avenue  
 Redlands, CA 92373
- **Joe Hughes Assistant City Manager**  
*Description of Involvement:* Multi-Jurisdictional Partner

*Contact Information:*  
 City of Highland  
 27215 Base Line  
 Highland, CA 92346  
 909-864-8732 x216  
[Joe\\_Hughes@eee.org](mailto:Joe_Hughes@eee.org)
- **Brad Hundman Member**  
*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
 Business & Economic Dev Advisory Commission  
 822 Robinhood Lane  
 Redlands, CA 92373
- **John Jaquess City Planner**  
*Description of Involvement:* Disaster Council Member and Local Hazard Mitigation

Planning Team Member

*Contact Information:*

City of Redlands Community Development Dept  
P. O. Box 3005, Suite 20  
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[jjaquess@cityofredlands.org](mailto:jjaquess@cityofredlands.org)

- **Brian King**  
**Chairman**

*Description of Involvement:* Public Planning Meeting Invitee

*Contact Information:*

Parks Commission  
10 E. Vine Street, Suite 214  
Redlands, CA 92373  
909-793-3858

- **Jan Korfmacher**  
**Member**

*Description of Involvement:* Public Meeting Invitee

*Contact Information:*

Historic Commission  
1239 Mira Monte Drive  
Redlands, CA 92373

- **Debra Kreske**  
**Emergency Service Officer**

*Description of Involvement:* Multi-Jurisdictional Partner

*Contact Information:*

San Bernardino County Office of Emergency Services  
1743 Miro Way  
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909-356-3998  
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- **Tina Kundig**  
**Finance Director**

*Description of Involvement:* Public Meeting Invitee

*Contact Information:*

City of Redlands  
35 Cajon Street  
Redlands, CA 92373  
909-798-7541  
[tkundig@cityofredlands.org](mailto:tkundig@cityofredlands.org)

- **Community at Large**  
**Local Business**

*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
Redlands Association of Realtors  
500 Brookside Avenue  
Redlands, CA 92373

- **Caroline Laymon**  
**Member**  
*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
Planning Commission  
13202 Bruder Lane  
Redlands, CA 92373

- **Michael S. Lee**  
**Member**  
*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
Public Works Commission  
771 Devonshire Drive  
Redlands, CA 92373  
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[Mlee168@hotmail.com](mailto:Mlee168@hotmail.com)

- **Wally Ann Lynard**  
**Member**  
*Description of Involvement:* Public Meeting Invitee

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Public Works Commission  
30655 Palo Alto Court,  
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909-748-7016  
[wlynard@aol.com](mailto:wlynard@aol.com)

- **James MacDonald**  
**Member**  
*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
Planning Commission  
30881 Alta Mora Drive  
Redlands, CA 92373

- **To Whom It may Concern Manager**  
**Administrator**  
*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
Mission Commons

10 Terracina Boulevard  
Redlands, CA 92374

- **Honorable Mayor  
Mayor**

*Description of Involvement:* Multi-Jurisdictional Partner

*Contact Information:*  
City of Yucaipa  
34272 Yucaipa Blvd.  
Yucaipa, CA 92399

- **Honorable Mayor  
Mayor**

*Description of Involvement:* Multi-Jurisdictional Partner

*Contact Information:*  
City of Highland  
27215 Baseline Avenue  
Highland, CA 92346

- **Honorable Mayor  
Mayor**

*Description of Involvement:* Multi-Jurisdictional Partner

*Contact Information:*  
City of Loma Linda  
25541 Barton Road  
Loma Linda, CA 92354

- **Don McCue  
Principal Archivist**

*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
A.K. Smiley Library  
127 W. Vine Avenue  
Redlands, CA 92373  
909-798-7565

- **Mitchell McKee  
Battalion Chief - Emergency Services**

*Description of Involvement:* Coordinator - Local Mitigation Planning Team,  
Emergency Services Manager

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City of Redlands Fire Department  
P. O. Box 3005, Suite 12  
Redlands, CA 92373  
909-798-7600  
[mmckee@confire.org](mailto:mmckee@confire.org)

- **Perry McCate**  
**Vice President - Operations**  
*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
 YMCA  
 500 E. Citrus Avenue  
 Redlands, CA 92373
- **Gary Miller**  
**Member**  
*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
 Planning Commission  
 1414 Sterling Road  
 Redlands, CA 92373
- **Sylvan Mobile**  
**Park Administration**  
*Description of Involvement:* Public Meeting invitee

*Contact Information:*  
 Sylvan Mobile Estates  
 455 Judson St.  
 Redlands, CA 92374
- **Eileen Moreno-Dirksen**  
**Assistant to Fire Chief**  
*Description of Involvement:* Disaster Council Member and Local Hazard Mitigation Planning Team Member

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 City of Redlands Fire Department  
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 Redlands, CA 92373  
 909-798-7600  
[edirksen@confire.org](mailto:edirksen@confire.org)
- **Ronald C. Mutter**  
**Public Works Director**  
*Description of Involvement:* Public Meeting Invitee  
 City Representative

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 Public Works Director  
 35 Cajon Street, Suite 222  
 Redlands, CA 92373  
 909-798-7655  
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- **Ed Nicholls**  
**Neighborhood Services Mgr**

*Description of Involvement:* Multi-Jurisdictional Partner

*Contact Information:*

City of Chino Hills  
2001 Grand Avenue  
Chino Hills, CA 91709  
909-364-2715  
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- **Cory Nomura**  
**Director of Admin Services**  
*Description of Involvement:* Disaster Council Member, Local Hazard Mitigation Planning Team Member and Local Mitigation Plan Multi-jurisdictional Partner

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- **Nancy Norton**  
**Member**  
*Description of Involvement:* Public Meeting Invitee

*Contact Information:*

Parks Commission  
539 E. Mariposa Dr.  
Redlands, CA 92373  
909-792-5917

- **Administration Office**  
**Citizen at Large**  
*Description of Involvement:* Public Meeting Invitee

*Contact Information:*

Lugonia Fountain Mobile Estates  
1251 E. Lugonia Avenue  
Redlands, CA 92374

- **Thomas Osborne**  
**Member**  
*Description of Involvement:* Public Meeting Invitee

*Contact Information:*

Planning Commission  
82 Kathi Street  
Redlands, CA 92373

- **Laura Palmer**  
**Representative**  
*Description of Involvement:* Local Hazard Mitigation Planning Team

*Contact Information:*  
Community At large  
400 Robinhood Lane  
Redlands, CA 92373  
909-335-9713

- **Richard Pepper**  
**Chief Building Official**

*Description of Involvement:* Disaster Council Member and Local Hazard Mitigation Planning Team Member

*Contact Information:*  
City of Redlands Building & Safety Department  
P. O. Box 3005, Suite 20  
Redlands, CA 92373  
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[rpepper@cityofredlands.org](mailto:rpepper@cityofredlands.org)

- **Susan Pepler**  
**Mayor**

*Description of Involvement:* Mayor, City of Redlands, Promulgation Authority

*Contact Information:*  
City of Redlands  
P. O. Box 3005  
Redlands, CA 92373  
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- **Mary Petite**  
**Cost Recovery/CDBG Admin**

*Description of Involvement:* Disaster Council Member, Local Hazard Mitigation Planning Team Member.

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City of Redlands Public Works Department  
P. O. Box 3005, Suite 222  
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- **Janet Petton**  
**Cemetery Manager**

*Description of Involvement:* Disaster Council and Local Hazard Mitigation Planning Team Member.

*Contact Information:*  
City of Redlands Municipal Utilities Department  
Hillside Cemetery  
Redlands, CA 92373  
909-798-7569  
[jpetton@cityofredlands.org](mailto:jpetton@cityofredlands.org)

- **Marjorie Pettus**  
**Director**  
*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
Administrative Services  
City of Redlands, P. O. Box 3005  
Redlands, CA 92373  
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- **Gary Phelps**  
**Director**  
*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
Municipal Utilities Department  
City of Redlands, P. O. Box 3005  
Redlands, CA 92373  
909.798.7698
- **Beverly Powell**  
**Regional Manager**  
*Description of Involvement:* Multi-Jurisdictional Partner

*Contact Information:*  
Southern California Edison  
278 Tennessee Street  
Redlands, CA 92374  
909-307-6742  
[powellba@sce.com](mailto:powellba@sce.com)
- **Lorrie Poyzer**  
**City Clerk**  
*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
City of Redlands  
35 Cajon Street  
Redlands, CA 92373  
909-798-7531  
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- **James Reed**  
**Member**  
*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
Public Works Commission  
614 Casa De Leon  
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[JREED@REDLANDSCLASSIC.com](mailto:JREED@REDLANDSCLASSIC.com)

- **Daniel J. Rendler**  
**Safety & Emergency Services Director**  
*Description of Involvement:* Multi-Jurisdictional Partner

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Sempra Utilities  
1981 Lugonia Avenue  
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- **Michael Reynolds**  
**City Treasurer**  
*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
City of Redlands  
35 Cajon Street, Suite 15A  
Redlands, CA 92373  
909-798-7544
- **Colin Rizzo**  
**Member & Student**  
*Description of Involvement:* Public Planning Meeting Invitee

*Contact Information:*  
Parks Commission  
1481 W. Cypress Avenue  
Redlands, CA 92373  
909-798-1091
- **Blanca Rodriguez**  
**Senior Librarian**  
*Description of Involvement:* Disaster Council Member and Local Hazard Mitigation Planning Team Member

*Contact Information:*  
A. K. Smiley Public Library  
125 W. Vine Street  
Redlands, CA 92373  
909-798-7674  
[yrr@akspl.org](mailto:yrr@akspl.org)
- **Kelly Rossetti**  
**Executive Director**  
*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
Y-Alliance  
16 E. Olive Avenue  
Redlands, CA 92373

- **Kristine Saukel**  
**Representative**  
*Description of Involvement:* Disaster Council Member and Local Hazard Mitigation Planning Team Member

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 Community at Large  
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[ksaukel@linkline.com](mailto:ksaukel@linkline.com)
- **Roy Savage**  
**Member**  
*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
 Parks Commission  
 1323 Pacific Street  
 Redlands, CA 92373  
 909-748-7208
- **Dustin Saxton**  
**Principal**  
*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
 Redlands Junior Academy  
 130 Tennessee Street  
 Redlands, CA 92373
- **David Schwartz**  
**Reporter**  
*Description of Involvement:* Public Meeting Invitee/Press

*Contact Information:*  
 The Sun  
 399 N. D Street  
 San Bernardino, CA 92401
- **Philip Sedgwick**  
**Volunteer**  
*Description of Involvement:* Disaster Council Member and Local Hazard Mitigation Planning Team Member

*Contact Information:*  
 Redlands RACES  
 13586 5<sup>th</sup> Street,  
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 909-795-5126  
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- **Michael Sepulveda**  
**Equipment Maintenance Supt**  
*Description of Involvement:* Disaster Council Member

*Contact Information:*  
Administrative Services - City of Redlands  
City Corporate Yard, 1270 W. Park  
Redlands, CA 92373  
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[msepulveda@cityofredlands.org](mailto:msepulveda@cityofredlands.org)
- **Robert Sepulveda**  
**Associate Engineer**  
*Description of Involvement:* Multi-Jurisdictional Partner

*Contact Information:*  
City of San Bernardino  
300 N. D Street  
San Bernardino, CA 92405  
909-384-5167  
[sepulveda\\_ro@sbcity.org](mailto:sepulveda_ro@sbcity.org)
- **Eric Shamp**  
**Member**  
*Description of Involvement:* Public Planning Meeting Invitee

*Contact Information:*  
Historic Commission  
23 Brookdale Drive  
Redlands, CA 92373
- **Jennifer Shanklund**  
**Public Works Department**  
*Description of Involvement:* Multi-Jurisdictional Partner

*Contact Information:*  
City of Yucaipa  
34272 Yucaipa Blvd.  
Yucaipa, CA 92399  
909-797-2489 x236  
[jshanklund@yucaipa.org](mailto:jshanklund@yucaipa.org)
- **Jeff Shaw**  
**Director**  
*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
Planning & Community Development  
35 Cajon Street  
Redlands, CA 92373  
909-798-7555  
[jshaw@cityofredlands.org](mailto:jshaw@cityofredlands.org)

- **Mark Sheppard**  
**Member**  
*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
Redevelopment Advisory Commission  
633 Elise Drive  
Redlands, CA 92373
- **Lorraine Beal Shoaf**  
**Member**  
*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
Redevelopment Advisory Commission  
1601 Barton Road, #509  
Redlands, CA 92373
- **Carolyn Showalter**  
**Volunteer**  
*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
Community at large  
105 E. Cypress Avenue  
Redlands, CA 92373  
909-793-6177  
[carolshowalter@aol.com](mailto:carolshowalter@aol.com)
- **Steve Sisk**  
**Response & Preparedness Dir**  
*Description of Involvement:* Disaster Council Member/Interagency Coordination

*Contact Information:*  
American Red Cross  
202 W. Rialto Avenue  
San Bernardino, CA 92403  
909-888-1481  
[sisks.arciec@verizon.net](mailto:sisks.arciec@verizon.net)
- **Kevin Smith**  
**Deputy Fire Marshal**  
*Description of Involvement:* Multi-Jurisdictional Partner

*Contact Information:*  
City of Chino Valley Fire Department  
2005 Grand Avenue  
Chino Hills, CA 91709  
909-902-5250 X230  
[ksmith@confire.org](mailto:ksmith@confire.org)  
[www.chinovalleyfire.org](http://www.chinovalleyfire.org)

- **Ann Marie Smith**  
**Member**  
*Description of Involvement:* Public Planning Meeting Invitee

*Contact Information:*  
Downtown Redlands Business Association  
Hockridge Florists, 111 E. Citrus Avenue  
Redlands, CA 92373
- **Jim Squire**  
**Planner**  
*Description of Involvement:* Multi-Jurisdictional Partner

*Contact Information:*  
San Bernardino County  
385 N. Arrowhead Avenue, 1st Floor  
San Bernardino, CA 92405  
909-387-4180  
[jsquire@lusd.sbcounty.gov](mailto:jsquire@lusd.sbcounty.gov)
- **Wayne Stair**  
**Member**  
*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
Downtown Redlands Business Association  
Redlands Centennial Bank, 218 E. State Street  
Redlands, CA 92373
- **Mark Stanson**  
**Member**  
*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
Public Works Commission  
1303 Mona  
Redlands, CA 92373  
909-335-9293  
[MSTANSON@aol.com](mailto:MSTANSON@aol.com)
- **Diana Stead**  
**Risk Manager**  
*Description of Involvement:* Disaster Council Member, Local Hazard Mitigation Planning Team Member and Local Mitigation Plan Partner

*Contact Information:*  
Redlands Unified School District  
P. O. Box 3008  
Redlands, CA 92374  
909-748-6759  
[Diana\\_Stead@Redlands.K12.ca.us](mailto:Diana_Stead@Redlands.K12.ca.us)

- **Joseph Stejskal**  
**Member**  
*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
Public Works Commission  
621 Via Vista  
Redlands, CA 92373  
909-792-6143  
[stejskaljo@cs.com](mailto:stejskaljo@cs.com)
- **Gary Sturdivan**  
**Safety & Regulatory Affairs Coordinator**  
*Description of Involvement:* Multi-Jurisdictional Partner

*Contact Information:*  
East Valley Water District  
1155 Del Rosa Avenue  
San Bernardino, CA 92410  
909-885-4900  
[gsturdivan@eastvalley.org](mailto:gsturdivan@eastvalley.org)
- **Leonard Temby**  
**Fire Marshal**  
*Description of Involvement:* Disaster Council Member and Local Hazard Mitigation Planning Team Member

*Contact Information:*  
City of Redlands Fire Department  
P. O. Box 3005, Suite 12  
Redlands, CA 92373  
909-798-7601
- **Paul Thompson**  
**Member**  
*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
Planning Commission  
31295 Alta Vista Drive  
Redlands, CA 92373
- **Kathie Thurston**  
**Executive Director**  
*Description of Involvement:* Community Representative

*Contact Information:*  
Redlands Chamber of Commerce  
1 E Redlands Boulevard  
Redlands, CA 92373  
909-793-2546  
[kathie1021@aol.com](mailto:kathie1021@aol.com)

- **Gary Tipton**  
**Safety Manager - Education Dept**  
*Description of Involvement:* Interagency Coordination

*Contact Information:*  
Redlands Community Hospital  
350 Terracina Blvd.  
Redlands, CA 92373  
909-335-6422  
[ggt@redlandshospital.com](mailto:ggt@redlandshospital.com)
- **Ken Tolar**  
**Business Coordinator**  
*Description of Involvement:* Local Hazard Mitigation Plan Partner

*Contact Information:*  
Redlands Unified School District  
P. O. Box 3008  
Redlands, CA 92373  
909-307-5300  
[kenneth\\_tolar@redlands.K12.ca.us](mailto:kenneth_tolar@redlands.K12.ca.us)
- **Bob Tyson, R.N.**  
**Emergency Room**  
*Description of Involvement:* Interagency coordination

*Contact Information:*  
Redlands Community Hospital  
350 Terracina Blvd.  
Redlands, CA 92373  
909-335-5500  
[rm+1@redlandshospital.org](mailto:rm+1@redlandshospital.org)
- **Gary VanDorst**  
**Solid Waste Manager**  
*Description of Involvement:* Disaster Council and Local Hazard Mitigation Planning Team Member

*Contact Information:*  
City of Redlands Municipal Utilities Department  
P. O. Box 3005, Suite 15B  
Redland, CA 92373  
909-798-7583  
[gvandorst@cityofredlands.org](mailto:gvandorst@cityofredlands.org)
- **Robert Visconte**  
**Representative**  
*Description of Involvement:* Multi-Jurisdictional Partner

*Contact Information:*  
Sempra Utilities  
624F W. Fourth Street  
San Bernardino, CA 92410

909-335-7961  
[rvisconti@semprautilities.com](mailto:rvisconti@semprautilities.com)

- **George Webber**  
**Member**

*Description of Involvement:* Public Meeting Attendee

*Contact Information:*  
Planning Commission  
1436 Serpentine Drive  
Redlands, CA 92373

- **Fred Weck**  
**Member**

*Description of Involvement:* Public Planning Meeting Invitee

*Contact Information:*  
Public Works Commission  
124 Dale Lane  
Redlands, CA 92373  
909-335-4020  
[fred\\_weck@redlands.edu](mailto:fred_weck@redlands.edu)

- **Stan & Ellen Weisser**  
**Community at Large**

*Description of Involvement:* Public Meeting Invitee

*Contact Information:*  
Community Representatives  
237 Grandview Drive  
Redlands, CA 92373

- **Terry Welsh**  
**Firefighter/Paramedic**

*Description of Involvement:* Disaster Council Member

*Contact Information:*  
City of Redlands Fire Department  
P. O. Box 3005, Suite 12  
Redlands, CA 92373  
909-798-7600  
[twelsh@confire.org](mailto:twelsh@confire.org)

- **Kyle Wilson**  
**Sr. Communications Specialist**

*Description of Involvement:* Disaster Council Member

*Contact Information:*  
City of Redlands Public Works Department  
P. O. Box 3005, Suite 222  
Redlands, CA 92373  
909-798-7665  
[KJKCW@net.com](mailto:KJKCW@net.com)

- **Laura Wolbert**  
**Administrative Assistant II**  
*Description of Involvement:* Local Hazard Mitigation Planning Team Member

*Contact Information:*  
 City of Redlands Public Works  
 P. O. Box 3005, Suite 222  
 Redlands, CA 92373  
 909-798-4113  
[publicworks@cityofredlands.org](mailto:publicworks@cityofredlands.org)
- **Ernest Wong**  
**City Engineer**  
*Description of Involvement:* Multi-Jurisdictional Partner

*Contact Information:*  
 City of Highland  
 27219 Baseline Street  
 Highland, CA 92346  
 909-864-8732 x 212  
[ernie\\_wong@eee.org](mailto:ernie_wong@eee.org)
- **Barbara Wormser**  
**Representative**  
*Description of Involvement:* Public Planning Meeting Invitee

*Contact Information:*  
 Community at Large  
 404 W. Highland Avenue  
 Redlands, CA 92373
- **Steve Young**  
**Fire Engineer**  
*Description of Involvement:* Disaster Council Member

*Contact Information:*  
 City of Redlands Fire Department  
 P. O. Box 3005, Suite 12  
 Redlands, CA 92373  
 909-798-7600  
[syoung@confire.org](mailto:syoung@confire.org)

## 3.2 Multi-Jurisdictional Planning Team Information

*Not Applicable*

## 3.3 Public Involvement Items

Over the past two years the City of Redlands Fire Department Emergency Services Section has pulled together members of our community in the development of this Local Hazard Mitigation Plan document.

In early Fall, 2003, the Department's Partners for Disaster Preparedness Committee, modeling itself after other Disaster Resistant Communities, developed a citizen survey, entitled "Natural Hazardous Preparedness Questionnaire". The purpose of this document was to elicit involvement from our community in the prioritization of local hazards, measure the community's readiness and knowledge of disaster preparedness, and to develop and prioritize subsequent mitigation programs. The survey was distributed to all City of Redlands Committees/Commissions, area churches, community-based service agencies, non-profit organizations, schools, Council of Churches, local businesses, our neighboring communities of Yucaipa, Loma Linda and Highland, and members of the press.

The results of the survey were presented at a Natural Hazards Mitigation Town Hall Meeting held on October 22, 2003, and televised over the local public cable network. Press releases were issued prior to the meeting through area newspapers and flyers were distributed throughout Redlands. Copies of the flyer, Survey cover letter, Survey and Press Release are hyperlinked below

The attendees at this meeting formed the beginnings of what grew to be the 54 member Redlands Local Hazard Mitigation Plan Citizen's Committee (LHMPCC). The committee is made up of citizens from the business community, various City commissions and committees, neighboring community leaders, and City of Redlands personnel, met each month since January 15, 2004, and more often when necessary to establish hazardous mitigation priorities, review existing programs, and begin new programs to promote hazard mitigation within our community. This document is the result of their efforts.

What follows is a listing of all meetings of this committee, subsequent City Council meetings addressing hazard mitigation, and meetings of neighboring community LHMP Citizens Committees, whose members also serve on our LLHMPCC, thereby forming a Multi-Jurisdictional Partnership. Copies of agendas and minutes to each meeting are hyperlinked below, where available, presented in ascending, chronological order.

- **Natural Hazards Mitigation Town Hall Meeting - 10/22/2003**

*Description:* As detailed above. Hyperlinked files include:

1. Survey Cover Letter
2. Survey
3. Press Release

4. Town Hall Meeting Agenda
5. Flyer

The public meeting was televised on the local Public Cable station as well.

*Location:*

City Council Chambers, 35 Cajon Street, Redlands, CA 92373

*Associated Files:*

- File Title: [Town Hall Meeting Flyer](#)  
File Description: This is a copy of the flyer that was published and distributed to local citizens encouraging participation in the Town Hall Meeting on disaster mitigation.  
Uploaded: 7/29/2004
  - File Title: [Survey Letter to Community](#)  
File Description: This is a cover letter for the survey for the City of Redlands "Natural Hazards Preparedness Questionnaire" sent to the community in the development of a Local Hazard Mitigation Planning Citizens Committee.  
Uploaded: 6/23/2004
  - File Title: [Survey](#)  
File Description: This is the "Natural Hazards Preparedness Questionnaire" distributed by the City of Redlands.  
Uploaded: 6/23/2004
  - File Title: [Agenda](#)  
File Description: This is the Agenda for the Town Hall Meeting held on October 22, 2003. The meeting was televised over the local cable channel 3.  
Uploaded: 6/23/2004
  - File Title: [Press Release](#)  
File Description: A copy of the press release issued entitled, "Planning for a Sustainable Community", explaining the Local Mitigation Planning process, encouraging participation, and extending an invitation to the Town Hall meeting scheduled for 10/22/2003.  
Uploaded: 8/4/2004
- 
- **Local Mitigation Citizens Committee Meeting – 12/1/03**  
*Description:* Initial meeting of the newly formed Disaster Council/Local Mitigation Plan Citizen's Committee. No minutes were taken, nor was an agenda prepared. This meeting was an introductory meeting of the group to establish attendees, exchange information and encourage expanded membership.  
  
*Location:*  
Emergency Operations Center, 1270 W. Park Avenue, Redlands, CA 92374
  - **Redlands Disaster Council/Local MP Committee Meeting – 1/15/2004**  
*Description:* The Agenda and Minutes for the meeting are hyperlinked below.  
*Location:* Emergency Operations Center, 1270 W. Park Avenue, Redlands, CA 92373  
*Associated Files:*

- File Title: [Minutes - January 15, 2004](#)  
File Description: This is a copy of the Minutes for the January 15, 2004 meeting of the Redlands Disaster Council/Local Mitigation Plan Citizen's Committee.  
Uploaded: 6/23/2004
  - File Title: [Agenda - January 15, 2004](#)  
File Description: This is a copy of the Agenda for the January 15, 2004 meeting of the Redlands Disaster Council/Local Mitigation Plan Citizen's Committee.  
Uploaded: 6/23/2004
- **Redlands Disaster Council/Local MP Committee Meeting – 2/19/2004**  
*Description:* A copy of the Agenda and Minutes for this meeting are hyperlinked below.  
*Location:* Emergency Operations Center, 1270 W. Park Avenue, Redlands, CA 92373  
  
*Associated Files:*
    - File Title: [Agenda - 2/19/2004](#)  
File Description: This is a copy of the Agenda for the February 19, 2004 meeting of the Redlands Disaster Council/Local Mitigation Plan Committee.  
Uploaded: 6/23/2004
    - File Title: [Minutes - 2/19/2004](#)  
File Description: This is a copy of the Minutes for the 2/19/2004 meeting of the Redlands Disaster Council/Local Mitigation Plan Committee.  
Uploaded: 6/23/2004
- **Redlands Disaster Council Local MP Committee Meeting - 3/10/2004**  
*Description:* A copy of the Agenda and Minutes for this meeting are attached.  
  
*Location:* Emergency Operations Center, 1270 W. Park Avenue, Redlands, CA 92373  
*Associated Files:*
    - File Title: [Minutes - March 10, 2004](#)  
File Description: This is a copy of the Minutes for the May 10, 2004 meeting of the Redlands Disaster Council/Local Mitigation Plan Committee.  
Uploaded: 6/23/2004
    - File Title: [Agenda - 3/10/2004](#)  
File Description: This is a copy of the Agenda for the March 10, 2004 meeting of the Disaster Council/Local Mitigation Plan Committee Meeting.  
Uploaded: 6/23/2004

- **Redlands Disaster Council/Local MP Committee Meeting - 4/5/2004**  
*Description:* A copy of the Agenda and Minutes for this meeting are hyperlinked below.

*Location:* Emergency Operations Center, 1270 W. Park Avenue  
Redlands, CA 92373

*Associated Files:*

- File Title: [Minutes - 4/5/2004](#)  
File Description: This is a copy of the Minutes for the April 5, 2004 meeting of the Redlands Disaster Council/Local Mitigation Plan Committee.  
Uploaded: 6/23/2004
- File Title: [Agenda - April 5, 2004](#)  
File Description: This is a copy of the April 5, 2004 Agenda for the City of Redlands Disaster Council Local Mitigation Plan Committee Meeting.  
Uploaded: 6/23/2004

- **Redlands City Council Meeting - 4/20/2004**

*Description:* At a regular meeting of the City Council, Resolution No. 6275 was approved declaring the week of May 2, 2004 as Disaster Resistance Week. A copy of this declaration is hyperlinked below.

*Location:* Council Chambers, 35 Cajon Street, Redlands, CA 92373

*Associated Files:*

- File Title: [Resolution No. 6275](#)  
File Description: This is a copy of Resolution No. 6275, declaring the week of May 2, 2004, as Disaster Resistance Week and calling upon State and Local governments, corporations, and members of the public to improve working partnerships in order to find cost-effective solutions to reduce the potential losses from future natural and man made disasters, and to make every effort possible to implement mitigation measures.  
Uploaded: 8/4/2004

- **Redlands Disaster Council/Local MP Committee Meeting - 5/12/2004**

*Description:* A copy of the Agenda and Minutes for this meeting are hyperlinked below.

*Location:* Redlands Emergency Ops Center, 1270 W. Park Avenue,  
Redlands, CA 92373

*Associated Files:*

- File Title: [Agenda](#)  
File Description: This is a copy of the Agenda for the May 12, 2004 Meeting of the City of Redlands Disaster Council/Local Mitigation Plan Committee.  
Uploaded: 6/23/2004
- File Title: [Meeting Minutes - May 12, 2004](#)  
File Description: This is a copy of the Minutes for the City of Redlands Disaster Council/Local Mitigation Plan Committee Meeting of May 12, 2004.  
Uploaded: 6/23/2004

- **Redlands Disaster Council/Local MP Citizens Committee Meeting - 6/3/2004**

*Description:* The Agenda, Minutes, and attachments for meeting attendees are hyperlinked below.

*Location:* Emergency Operations Center, 1270 W Park Avenue  
Redlands, CA 92373

*Associated Files:*

- File Title: [Agenda - 6/3/2004](#)  
File Description: This is a copy of the Agenda for the June 3, 2004 meeting of the Disaster Council/and Local Mitigation Plan Citizen's Committee.  
Uploaded: 6/23/2004
- File Title: [2003 So Cal Wildfires](#)  
File Description: This is an informational attachment regarding the 2003 Southern California Wildfires distributed for use at this meeting.  
Uploaded: 6/23/2004
- File Title: [DMA 2000 and Natural Hazard Mitigation](#)  
File Description: A copy of an article from the March-April 2004 issue of the Building and Safety Journal, entitled "DMA 2000 and Natural Hazard Mitigation", used as a resource for the 6/3/2004 meeting.  
Uploaded: 6/23/2004
- File Title: [Attachment Article](#)  
File Description: A copy of an article entitled "Standards: The Foundation for a Global Response to Building and Safety", from the March-April 2004 issue of the Building and Safety Journal, used as a resource attachment for the 6/3/2004 meeting.  
Uploaded: 6/23/2004
- File Title: [Minutes - June 3, 2004](#)  
File Description: This is a copy of the minutes of the June 3, 2004 meeting of the Disaster Council/Local Mitigation Plan Citizen's Committee.  
Uploaded: 6/23/2004
- File Title: [Attachment Article](#)  
File Description: This is a copy of an article entitled "Observations Following the San Simeon Earthquake" from the March-April 2004 issue of the Building and Safety Journal used as a resource attachment for the 6/3/2004 meeting.  
Uploaded: 6/23/2004

- **Disaster Council/Local Hazard Mitigation Planning Citizens Committee 6/21/2004**

*Description:* The Agenda and Minutes for the meeting are hyperlinked below.

*Location:* Emergency Operations Center, 1270 W. Park Avenue,  
Redlands, CA 92373

*Associated Files:*

- File Title: [Agenda - 6/21/2004](#)  
File Description: This is a copy of the Agenda for the June 21, 2004 meeting

of the Disaster Council/Local Mitigation Plan Citizens Committee.

Uploaded: 6/23/2004

- File Title: [Minutes - 6-21-04.doc](#) This is a copy of the Minutes for the June 21, 2004 meeting of the Disaster Council/Local Mitigation Plan Citizens Committee.

- **RUSD Local Mitigation Plan Citizens Committee Meeting - 6/23/2004**

*Description:* This was a meeting of the Redlands Unified School District Local Mitigation Plan Citizens Committee. The City of Redlands participated, along with San Bernardino County as part of our Multi-Jurisdictional Partnerships. A copy of the Agenda and minutes are hyperlinked below. RUSD representatives are members of the Redlands Local Hazard Mitigation Plan Citizen's Committee.

*Location:* Redlands Unified School Dist., 20 W. Lugonia Avenue, Redlands, CA 92374

*Associated Files:*

- File Title: [RUSD Local MP Citizens Committee](#)  
File Description: These are Minutes of this 6/23/2004 public meeting.  
Uploaded: 7/9/2004

- **East Valley Water District Disaster MP Committee Meeting - 6/26/2004**

*Description:* The City of Redlands participated in the meeting, along with San Bernardino County as part of our Multi-Jurisdictional Partnerships. A copy of the minutes of this public meeting of the East Valley Water District Disaster Mitigation Plan Committee is hyperlinked below. East Valley Water District representatives are members of the Redlands Local Hazard Mitigation Plan Citizen's Committee.

*Location:* East Valley WD Board Room, 1155 Del Rosa Avenue, San Bernardino, CA 92410

*Associated Files:*

- File Title: [Meeting Minutes](#)  
File Description: Minutes of a meeting of the East Valley Water District Disaster Mitigation Plan Committee Held on June 26, 2004 held in the East Valley Water District Board Room.  
Uploaded: 7/9/2004

- **Rim of the World Unified School District Local Mitigation Planning Agencies & Citizens Committee Meeting - 7/15/2004**

*Description:* A meeting of the Local Plan Agencies and Citizens Committee of the Rim of the World Unified School District, in which the City of Redlands participated, along with San Bernardino County as part of our Multi-Jurisdictional Partnerships. A copy of the Agenda and minutes are attached. Rim of the World USD representatives are members of the Redlands Local Hazard Mitigation Plan Citizen's Committee.

*Location:* Rim of the World USD, 27315 North Bay Road, Blue Jay, CA 92317

*Associated Files:*

- File Title: [Meeting Minutes -Rim of the World](#)  
File Description: This is a copy of the agenda for the subject meeting.  
Uploaded: 8/4/2004
- File Title: [Meeting Minutes - Rim of the World](#)  
File Description: This is a copy of the minutes to the Local Mitigation Plan Agencies and Citizens Committee Meeting held at the Rim of the World Unified School District, Thursday, July 15, 2004, 9:00 a.m.
  
- **City Council Public Comment Meeting - 7/20/2004**  
*Description:* Introduction to the Disaster Mitigation Act of 2000 (DMA 2000) and request for public comment on selected natural hazards.  
*Location:* 35 Cajon Street, City Council Chambers, Redlands, CA 92373  
*Associated Files:*
  - File Title: [Request for Council Action](#)  
File Description: This is the Staff Report, or Request for Council Action which will Introduce the Community to the Disaster Mitigation Act of 2000 and provide a forum for public comment on the natural hazards selected as identified by the City of Redlands Disaster Council/Local Mitigation Plan Committee.  
Uploaded: 7/8/2004
  
- County OES Pre-Disaster Mitigation Grant & Hazard Mitigation Plan Committee. The Emergency Services Manager and the Cost Recovery Administrator are City of Redlands representatives to the County OES Pre-Disaster Mitigation Grant & Hazard Mitigation Plan Committee in which all multi-jurisdictional partners participate in the development of the San Bernardino County Hazard Mitigation Plan. As you know, each partner, e.g. Redlands, prepares their annex for their City to that plan. Following is a listing of meetings attended by City of Redlands representatives and, where available, hyperlinked minutes or meeting reports.
  
- **County OES Pre-Disaster Mitigation (PDM) Grant & Hazard Mitigation Plan Meeting - 6/11/2003**  
*Description:* Hazard Mitigation Plan Workshop #1  
*Location:* San Bernardino County OES, 1743 Miro Way, Rialto, CA 92376
  
- **PDM Grant & Hazard Mitigation Plan - 7/8/2003**  
*Description:* OACC Steering Committee/County Agencies Meeting  
*Location:* San Bernardino County OES, 1743 Miro Way, Rialto, CA 92376-8630
  
- **PDM Grant & Hazard Mitigation Plan - 7/22/2003**  
*Description:* HMP "Working Group Meeting"  
*Location:* San Bernardino County OES, 1743 Miro Way, Rialto, CA 92376-8630
  
- **PDM Grant & Hazard Mitigation Plan - 8/4/2003**  
*Description:* HMP "Working Group" Meeting  
*Location:* San Bernardino County OES, 1743 Miro Way, Rialto, CA 92376-8630

- **PDM Grant & Hazard Mitigation Plan - 8/7/2003**  
*Description:* OACC Quarterly Meeting in Big Bear, CA.  
*Location:* San Bernardino County OES, 1743 Miro Way, Rialto, CA 92376-8630
  
- **PDM Grant & Hazard Mitigation Plan - 8/20/2003**  
*Description:* HMP "Working Group" Meeting  
*Location:* San Bernardino County OES, 1743 Miro Way, Rialto, CA 92376-8630
  
- **PDM Grant & Hazard Mitigation Plan - 9/9/2003**  
*Description:* HMP "Working Group" Meeting  
 Task: Meetings after this will reflect "milestones".  
*Location:* San Bernardino County OES, 1743 Miro Way, Rialto, CA 92376-8630
  
- **PDM Grant & Hazard Mitigation Plan - 10/16/2003**  
*Description:* HMP Information Meeting - 0900  
 Task: Inform OA of what their responsibilities are.  
*Location:* San Bernardino County OES, 1743 Miro Way, Rialto, CA 92376-8630
  
- **PDM Grant & Hazard Mitigation Plan - 3/18/2004**  
*Description:* HMP Workshop #1 - Repeat.  
 Task: Rialto Behavioral Health  
*Location:* San Bernardino County OES, 1743 Miro Way, Rialto, CA 92376-8630
  
- **PDM Grant & Hazard Mitigation Plan - 5/6/2004**  
*Description:* HMP Sub-Committee Meeting  
 Task: Define top 3 hazards. Identify members of Unincorporated Planning Team.  
*Location:* San Bernardino County OES, 1743 Miro Way, Rialto, CA 92376-8630
  
- **PDM Grant & Hazard Mitigation Plan - 6/2/2004**  
*Description:* HMP Sub-Committee Meeting and HMP County Planning Team Meeting.  
*Location:* San Bernardino County OES, 1743 Miro Way, Rialto, CA 92376-8630
  
- **PDM Grant & Hazard Mitigation Plan - 6/9/2004**  
*Description:* HMP Sub-Committee Meeting  
*Location:* San Bernardino County OES, 1743 Miro Way, Rialto, CA 92376-8630
  
- **PDM Grant & Hazard Mitigation Plan - 6/16/2004**  
*Description:* Visual Risk Program Training for HMP Partners.  
*Location:* San Bernardino County OES, 1743 Miro Way, Rialto, CA 92376-8630
  
- **Hazard Mitigation Plan OA Sub-Committee Meeting - 6/30/2004**  
*Description:* A summary of the actions of this meeting is attached

*Location:* County OES, 1743 Miro Way, Rialto, CA 92376

*Associated Files:*

- File Title: [Meeting Summary](#)  
File Description: This document presents a summary of the June 30, 2004 meeting of the Hazard Mitigation Plan Operational Area (OA) Sub-Committee Planning Meeting, held from 0900-1000 hours.  
Uploaded: 8/4/2004

## Section 4 - Risk Assessment

The goal of mitigation is to reduce the future impacts of a hazard including property damage, disruption to local and regional economies, and the amount of public and private funds spent to assist with recovery. However, mitigation should be based on risk assessment.

A risk assessment is measuring the potential loss from a hazard event by assessing the vulnerability of buildings, infrastructure and people. It identifies the characteristics and potential consequences of hazards, how much of the community could be affected by a hazard, and the impact on community assets. A risk assessment consists of three components: hazard identification, vulnerability analysis and risk analysis. Technically, these are three different items, but the terms are sometimes used interchangeably.

### 4.1 Hazard Identification

<i>REQUIREMENT</i> §201.6(c)(2)(i):	[The risk assessment shall include a] description of the type ... of all] natural hazards that can affect the jurisdiction ...
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The following is a table represents the Critical Priority Risk Index for each hazard facing the community.

Hazard	Probability	Magnitude/ Severity	Warning Time	Duration	Priority Risk Index
Earthquake	High Likely	Critical	Less 6 Hours	Less than 6 hours	3.4
Wildfires	Likely	Critical	Less 6 Hours	Less than one week	3.15
Flooding	Likely	Critical	6-12 Hours	Less than one week	3

The following is a list of each hazard/threat confronting the Community of City of Redlands.

## **NATURAL HAZARDS**

### **1. Earthquake**

*General Definition:*

An earthquake is a sudden, rapid shaking of the Earth caused by the breaking and shifting of rock beneath the Earth's surface. For hundreds of millions of years, the forces of plate tectonics have shaped the Earth as the huge plates that form the Earth's surface move slowly over, under, and past each other. Sometimes the movement is gradual. At other times, the plates are locked together, unable to release the accumulating energy. When the accumulated energy grows strong enough, the plates break free causing the ground to shake.

Most earthquakes occur at the boundaries where the plates meet; however, some earthquakes occur in the middle of plates.

Ground shaking from earthquakes can collapse buildings and bridges; disrupt gas, electric, and phone service; and sometimes trigger landslides, avalanches, flash floods, fires, and huge, destructive ocean waves (tsunamis). Buildings with foundations resting on unconsolidated landfill and other unstable soil, and trailers and homes not tied to their foundations are at risk because they can be shaken off their mountings during an earthquake. When an earthquake occurs in a populated area, it may cause deaths and injuries and extensive property damage.

Earthquakes strike suddenly, without warning. Earthquakes can occur at any time of the year and at any time of the day or night. On a yearly basis, 70 to 75 damaging earthquakes occur throughout the world. Estimates of losses from a future earthquake in the United States approach \$200 billion.

There are 45 states and territories in the United States at moderate to very high risk from earthquakes, and they are located in every region of the country. California experiences the most frequent damaging earthquakes; however, Alaska experiences the greatest number of large earthquakes—most located in uninhabited areas. The largest earthquakes felt in the United States were along the New Madrid Fault in Missouri, where a three-month long series of quakes from 1811 to 1812 included three quakes larger than a magnitude of 8 on the Richter Scale. These earthquakes were felt over the entire Eastern United States, with Missouri, Tennessee, Kentucky, Indiana, Illinois, Ohio, Alabama, Arkansas, and Mississippi experiencing the strongest ground shaking.

Description:

Reference: Special Publication 102, Planning Scenario, 1993, "Major Earthquake on San Jacinto Fault Zone in the San Bernardino Area". This fault forms the southwestern boundary of the San Bernardino Valley including a large portion of the City of Redlands. The actual fault line measures 8 miles approximation from the City's downtown commercial district. The fault zone itself extends approximately 120 miles in distance from its point of origin in the San Bernardino Valley at the San Andreas Fault. The formation of this juncture exists within the geographical location of the Devore Pass. The southernmost section of the zone travels northwest of El Centro.

Historical Profile:

During California's history (about 150 years) there have been no recorded magnitude 7 or greater earthquakes on the San Bernardino Valley segment of the San Jacinto fault zone. Earthquakes of greater than magnitude 6 have occurred on several datelines within 5-12 miles of the fault zone. Major earthquakes occurred in 1812, 1857, 1858, 1890, 1894, 1895, and 1899. All of the earthquakes listed were recorded at magnitude 6 or greater. Earthquakes within magnitude 5 or 6 have occurred in 1907, 1923, 1970, and 1990. Several earthquakes of magnitude 6.5 or greater occurred in 1918, and 1992, respectively. In 1992, a magnitude 6.6 affected the San Andreas Fault line occurring in the area of Landers and Big Bear. This fault rupture subsequently resulted in 50 miles of direct seismic ground rupture traveling through the Yucca

Valley area creating variable displacements of up to 20 feet laterally (refer to Planning Scenario document, publication 102, dated 1993). Current studies of the San Jacinto fault line indicate reduced levels of slippage from expected points as they relate to dates. These studies include the current placement of seismic equipment in specific target critical facilities within the San Bernardino Valley and the City of Redlands, specifically.

- *Associated Files:* File Title: [San Simeon Earthquake](#)  
File Description: This is a copy of an article from the March-April 2004 Building & Safety Journal, entitled, "Observations Following the San Simeon Earthquake".  
Uploaded: 8/5/2004

## 2. Flooding

### General Definition:

Floods are the most common and widespread of all natural disasters--except fire. Most communities in the United States have experienced some kind of flooding, after spring rains, heavy thunderstorms, or winter snow thaws.

A flood, as defined by the National Flood Insurance Program is: "A general and temporary condition of partial or complete inundation of two or more acres of normally dry land area or of two or more properties (at least one of which is your property) from:

\*Overflow of inland or tidal waters,\*Unusual and rapid accumulation or runoff of surface waters from any source, or a mudflow.

The collapse or subsidence of land along the shore of a lake or similar body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels that result in a flood."

Floods can be slow, or fast rising but generally develop over a period of days. Mitigation includes any activities that prevent an emergency, reduce the chance of an emergency happening, or lessen the damaging effects of unavoidable emergencies. Investing in mitigation steps now, such as, engaging in floodplain management activities, constructing barriers, such as levees, and purchasing flood insurance will help reduce the amount of structural damage to your home and financial loss from building and crop damage should a flood or flash flood occur.

Flooding tends to occur in the summer and early fall because of the monsoon and is typified by increased humidity and high summer temperatures. The standard for flooding is the so-called "100-year flood," a benchmark used by the Federal Emergency Management Agency to establish a standard of flood control in communities throughout the country. Thus, the 100-year flood is also referred to as the "regulatory" or "base" flood.

Actually, there is little difference between a 100-year flood and what is known as the 10-year flood. Both terms are really statements of probability that scientists and engineers use to describe how one flood compares to others that are likely to occur. In fact, the 500-year flood and the 10-year flood are only a foot apart on

flood elevation-which means that the elevation of the 100-year flood falls somewhere in between. The term 100-year flood is often incorrectly used and can be misleading. It does not mean that only one flood of that size will occur every 100 years.

What it actually means is that there is a one percent chance of a flood of that intensity and elevation happening in any given year. In other words, it is the flood elevation that has a one percent chance of being equaled or exceeded each year. And it could occur more than once in a relatively short period of time. (By comparison, the 10-year flood means that there is a ten percent chance for a flood of its intensity and elevation to happen in any given year.) Rod Bolin, The Ponca City News, July 18, 2002. Page 5-A

Description:

Four principal streams drain Redlands, each of which presents identifiable flood hazards at peak flows.

The Santa Ana River/Mill Creek, which emerges from its mountain canyon 5 miles northeast of Redlands, spreads out in shallow, braided channels more than a 1.5 mile-wide wash, mantled with fluvial debris. In 1965, 1966, 1969, 1976, 1980, 1992, 1993, and 1995 the flood waters from the upper regions of the Santa Ana River/Mill Creek were responsible for extensive damage to Orange Street and Alabama Street, ranging from washouts from five to six-foot high flood waters, to extensive, permanent damages from uncontrollable runoff from the upper regions of the San Bernardino mountains.

The Mission Zanja, also known as Mill Creek Zanja and Mission Storm Drain, is part of the area's history. The Mission Zanja was constructed for water supply in 1819. Diverting water from Mill Creek, the Zanja carried water for 12 miles to support the San Bernardino Assistencia and surrounding farms and ranches. Today, as it traverses an east/west direction, the Zanja drains major portions of the City through various storm drain systems. During significant storm periods, the Zanja poses a serious threat to the community, and the U. S. Army Corps of Engineers is currently funding the design and construction of facilities to remove the flood hazard. The Mission Zanja, from the 2800 block of Mentone Boulevard to the west edge of Sylvan Park, is a designated landmark, and part of the National Register of Historic Places.

Floods inundate portions of the City of Redlands almost every year. Records show that by 1988, 23-medium to large floods had occurred since construction of Mission Zanja in 1819. Since 1988, additional declared flood disasters have occurred, each producing proportionate damage to the community.

The County of San Bernardino Flood Control District initiated a report following the floods of January and February 1969, which summed up the repetition of flood damage in Redlands and vicinity. It stated that "A review of the occurrence of past floods of serious magnitude in San Bernardino Valley shows that one may be expected on the average of every 20 to 21 years. 'Great floods' have been recorded for the years 1825, 1862, 1867, 1884, 1891, 1916, 1938, 1969 and 1993. Available records indicated that the greatest of these by far was the flood

of January 1862. If the reconstructed data for that storm is reasonably accurate, it would have been approximately a once-in-350-years flood!"

Historical Profile:

The primary purpose of major flood control projects to be constructed in or near Redlands is to protect development to the west. However, Redlands' vulnerability to raging Santa Ana River and Mill Creek Zanja floodwaters was demonstrated by the destructive floods of 1862, 1938, and 1969. Since then, numerous improvements have reduced hazards to lives and property. Additional flood improvements underway in 1991 included the Seven Oaks Dam (now completed); Mill Creek levee renovation, and the San Timoteo Canyon channel and debris basins.

The potential severity of flooding events requires careful long-range planning, and balancing uses. Growing environmental consciousness has led to a new understanding of the types of flood control measures appropriate to Southern California. Costs of an unmitigated disaster must be weighted against costs of land, construction, and maintenance, and enhanced with long-range environmental concerns, such as groundwater recharge and habitat preservation. Flood and drainage ways also have regional significance as areas of mineral resources and recreational uses.

Policies guiding these efforts, as stated in the City of Redlands General Plan include:

1. Protect lives and property and ensure that structures proposed for sites located on flood plains subject to the 100-year flood are provided adequate protection from floods.
2. Preserve as open space those areas that cannot be mitigated for flood hazard.
3. Support a multi-use concept of flood plains, flood-related facilities, and waterways.
4. Where feasible given flood control requirements, maintain the natural waterways and flood plains to ensure adequate groundwater recharge and water quality, preservation of habitat, and access to mineral resources.
5. Support the intent of the County of San Bernardino's flood control policies as specified in the County General Plan.
6. Cooperate with all public and private agencies involved to ensure that flood control improvements do not disrupt environmentally sensitive areas beyond a level of immitigability.

### **3. Wildfires**

General Definition:

There are three different classes of wild land or wildfires. A surface fire is the most common type and burns along the floor of a forest, moving slowly and killing or damaging trees. A ground fire is usually started by lightning and burns on or below the forest floor. Crown fires spread rapidly by wind and move quickly by jumping along the tops of trees. Wildfires are usually signaled by dense smoke that fills the area for miles around. Wildfires present a significant potential for disaster in the southwest, a region of relatively high temperatures, low humidity,

and low precipitation during the summer, and during the spring, moderately strong daytime winds. Combine these severe burning conditions with people or lightning and the stage is set for the occurrence of large, destructive wildfires.

Description:

Due to a combination of topography, weather, and fuel, and exacerbated by potentially high winds and limited access, this area is highly susceptible to wildland fire hazards. The slopes of San Timoteo and Live Oak canyons, the Badlands to the south, and the Crafton Hills to the east, are not only difficult for firefighters and their equipment to reach, but the hills steepness and configuration can aid in the rapid upslope spread of fire.

Limited rainfall, low humidity, and seasonal high temperatures continue to contribute to the desiccation of the grasses and chaparral, which cover the foothills, providing prime fuel for intense burns. Although some of the canyons are shielded from the direct impact of the powerful, dry Santa Ana winds, their presence generally aggravates the fire hazard. In addition, the presence of human activities in or near a wildland area dramatically increases the risk of a major fire due to careless smokers, illegal campfires, and other related risks. The Redlands Fire Department serves the City of Redlands, and unincorporated portions of the city are served by the California Department of Forestry and Fire Protection (CDFFP), as contracted by the County of San Bernardino and headed by the County Fire Warden. The U.S. Forest Service serves adjacent National Forest lands. Redlands Fire Department policies emphasize structural fire preventative measures.

Historical Profile:

The City of Redlands has suffered repetitive loss in the high fire hazard urban wildland interface area of our city. Historically, the fires have started in either San Timoteo or Live Oak Canyon and burn from a western to easterly direction, driven by prevailing winds and topography. We have implemented building construction standards and means for private on-site water storage facilities for sites that are not served by the fire district, and require defensible space around all new construction. The City continues to work to prevent wildland and urban fire, and protect lives, property, and watershed from fire dangers. In doing so, the department has implemented the following policies as cited in the City of Redlands General Plan, 1995:

1. Adhere to the requirements for high fire hazard areas designated by the Redlands Fire Department on the official Roof Classification Zone Map, updated as of June 1994 and as specific in the document on file at the Redlands Fire Department describing High Fire Hazard Area Fire Safety Modification Zones. (Attached)
2. Monitor fire-flow capability throughout the area and improve water availability if any locations have flows considered inadequate for fire protection.
3. Devise alternative fire protection standards suitable for Rural Living areas not exposed to high wildland fire hazards.
4. Consult the San Bernardino County Fire Safety Overlay Ordinance (July 1989 Development Code) for possible appropriate implementation measures for development in the foothills area.

*Associated Files:*

- File Title: [Fire Frequency and Land Condition](#)  
File Description: This western U.S. map shows the relative risk of losing one or more key components that define an ecological system based on departures from the historic natural fire regime and ecosystem attributes such as hydrologic function. This relative risk rating is shown for three fire regimes, frequent fires (recurring 0-35 years), common (35-100 years) and infrequent (200+ years).  
Uploaded: 8/3/2004
- File Title: [Office of Emergency Services Hazards Map](#)  
File Description: This map indicates areas in California designated as High Fire Hazard areas, showing the location of the City of Redlands and it's high fire hazard area.  
Uploaded: 8/3/2004
- File Title: ["It Takes a Team" News Article](#)  
File Description: This is an article from the Sun Newspaper, 9/11/04, which describes team efforts that went into extinguishment of the Canyon Fire.  
Uploaded: 8/4/2004
- File Title: [Wildland Fires Article](#)  
File Description: This is a copy of an article from the Building Safety Journal, March-April 2004, entitled " Observations from the 2003 Southern California Wildland Fires."  
Uploaded: 8/5/2004
- File Title: [Anti-Fire Measures Credited](#)  
File Description: This is a copy of a newspaper article published in the Riverside Press Enterprise on 7/22/01, entitled "Anti-Fire Measures Credited with Saving Redlands Home".  
Uploaded: 8/4/2004
- File Title: ["Fire Rages" Newspaper Article](#)  
File Description: This is a copy of an article describing the Canyon Fire of September 1996.  
Uploaded: 8/4/2004
- File Title: [Fire History Map](#)  
File Description: This map shows the history of fire occurrence in the City of Redlands.  
Uploaded: 8/6/2004

**TECHNOLOGY HAZARDS**

**HUMAN HAZARDS**

The following files are associated with all Hazards:

*No associated files.*

## 4.2 Hazard Profile

<i>REQUIREMENT</i> §201.6(c)(2)(i):	[The risk assessment shall include a] description of the ... location and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.
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The CPRI factors the elements of risk: Probability (P), Magnitude/Severity (M), Warning Time (WT) and Duration to create an index, which allows for the prioritization of mitigation activities based on the level of risk. The following hazards are listed in order of decreasing CPRI score.

### **NATURAL HAZARDS**

#### **Earthquake**

##### ***Historical Events***

The following section lists and describes the historical events associated with this hazard in City of Redlands.

##### **1. FEMA-947-DR CA 6/28/1992**

Slip-strike fault earthquake in Landers M7.3, followed by a M6.2 aftershock in Big Bear, CA. These earthquakes resulted in structural damage to many residential dwellings in Redlands, including chimneys and foundation slippage. Light damage was done to the A. K. Smiley Library, which resulted in a seismic retrofit of the stack wing (HMGP).

Hazard: Earthquake  
Deaths: 0  
Injuries: 0  
Displaced People: 0  
35 Cajon Street, Suite 12  
Redlands, CA 92373  
Latitude: 34.016094  
Longitude: -117.166626

The following table summarizes the occurrences, impact and costs of this hazard.

(Dollar Amounts in Thousands)

Hazard: Earthquake		Response and Recovery Costs					
Name	Date	City Town	County	State	Federal	Other	Total
FEMA-947-DR CA	6/28/1992	\$15	\$0	\$137	\$610	\$0	\$763
Totals:		\$15	\$0	\$137	\$610	\$0	\$763

**Calculated Priority Risk Index (CPRI)**

Probability: **4 Highly Likely**

Magnitude/Severity: **3 Critical**

Warning Time: **4 Less 6 Hours**

Duration: **1 Less than 6 hours**

The CPRI for the Earthquake hazard for City of Redlands is:

Probability + Magnitude/Severity + Warning Time + Duration = CPRI

$$4 \times .45 + 3 \times .30 + 4 \times .15 + 1 \times .10 = 3.4$$

**Flooding**

***Historical Events***

The following section lists and describes the historical events associated with this hazard in City of Redlands.

**1. FEMA 1203-DR-CA 2/26/1998**

Redlands experienced a continuing series of storms. On February 27&28, 1998 the strongest storm created a 2-day event that resulted in considerable damage and private property loss.

Hazard: Flooding

Deaths: 0

Injuries: 0

Displaced People: 8

Locations: Various, Redlands, CA 92373

Latitude: 34.016094

Longitude: -117.166626

## **2. FEMA 1046-DR-CA 3/1/1995**

The second storm series resulted in more than \$12,000 in damage costs associated with Emergency Protective Measures and Debris Removal. A small storm drain collapse at Church and State Streets created another \$4,000 in damage, and another mudslide in San Timoteo Canyon created damages associated with debris removal of approximately \$20,000. Additionally, severe ditch and shoulder erosion and culvert damage occurred between Pilgrim Road and Rancho Caballo, at an approximate cost of \$200,000. The water line, which supplies potable water from Monkey Face Falls to the residents of Mountain Home Village, was further buried after damage from two previous disasters. Due to a potential \$500,000 cost for debris removal, the water line was relocated at a cost of less than \$50,000. The most significant damage, however, was the loss of the temporary emergency crossings at Orange and Alabama Streets. Warm tropical rain, coupled with an extreme snowmelt, created severe flooding conditions in the Santa Ana River. Mud, debris, and boulders swept away both roads, which were replaced in 1993 (FEMA 979) at a cost of \$570,000. New replacement costs were incurred for \$529,000.

## **3. FEMA 979-DR-CA 1/5/1993**

The Winter Floods of 1993 produced the most significant damage to the City of Redlands in recent history. Recurrent flooding during the months of December through March resulted in an over saturation of soil which promoted long-term effects of storm waters in the City and region. Tropical rains melted a heavy snow pack at the higher elevations, producing increased flood activity.

With approximately \$6.5 Million in damages, but no loss of life, these storms finally claimed both the Alabama Street and Orange Street bridges. Demolition of the old Orange Street Bridge, and construction of temporary replacement dip crossings resulted in costs of \$570,000 and both crossings were opened in July 1993; replacement of the bridges is estimated to cost approximately \$5.0 million by 1995. The Mission Zanja again produced flooding along its banks at Sylvan Blvd. and Judson Street, resulting in channel improvements at that intersection in excess of \$27,000. Partial collapse of the Zanja occurred again in Sylvan Park. Landslides crushed the Monkey Face Falls waterline, which provides water to residents of Mountain Home Village. One additional water line, serving sparse residences north of the Santa Ana River, was washed out. Repair was affected in October 1993, following subsidence of the Santa Ana River. Tipping fees to the County landfill exceeded \$185,000. Several city-owned buildings sustained water damage, including the Smiley Library, which is on the National Register of Historic Places. Fire and Police Department emergency services topped \$95,000, with no loss of life. Emergency Protective Measures and Debris Removal accounted for another \$125,000 in emergency services. Landslides occurred in the San Timoteo/Live Oak Canyon area, resulting in road closures for a portion of the three-month Declaration period. Final clean up efforts were accomplished in April 1993 at a cost of \$30,000.

Hazard: Flooding  
Deaths: 1  
Injuries: 0  
Displaced People: 6  
Location: 35 Cajon Street, Suite 12, Redlands, CA 92373  
Latitude: 34.016094  
Longitude: -117.166626

#### **4. FEMA 935-DR-CA 2/16/1992**

In February 1992, significant flooding occurred as a result of major storm systems moving through Southern California. The three-day storm system produced most of the 14.96 rainfalls for 1991-92.

Historically, the Santa Ana River and Mission Zanja were the cause of the most significant damages, and due to extensive build out of the southeast area, storm runoff produced increased flooding of the Country Club area. Most significantly, water run-off from the populated Country Club area traversed a private elementary school as well as Ford Street and developed subdivisions to the north. School property was damaged as a result of flood waters flowing through the school's parking lot and only street entrance, resulting in a lawsuit against the City. In 1993-94 the City constructed the Ford Street Storm Drain at a cost of \$450,000, and future flooding in that area has been nonexistent. The Bear Valley Pipeline, generally located in Mill Creek near Greenspot Road and Florida Street, sustained \$92,000 in damage to approximately 400 feet of steel pipe and supports. The Mill Creek Zanja at Sylvan Blvd. at Judson Street eroded significantly, threatening flooding of neighborhood homes as floodwaters spilled over into the public right-of-way, and causing \$12,000 in damage. Public safety, spillway erosions, landfill tipping fees, and debris removal alone resulted in \$160,000 in damages for a 3-day period of time. There was no loss of life or public property.

Hazard: Flooding  
Deaths: 0  
Injuries: 0  
Displaced People: 0  
Location: 35 Cajon Street, Ste 12, Redlands, CA 92373  
Latitude: 34.016094  
Longitude: -117.166626

#### **5. FEBRUARY 1980 FLOODS 2/1/1980**

The floods of February 1980, produced a mirror image of prior floods, as extensive damage again occurred as a result of rising storm waters and runoff from the upper regions of the Santa Ana River. The Santa Ana River at Alabama Street changed course and completely washed out the road in two locations, plugged existing culverts, eroded shoulders at various locations, scoured the existing A.C. pavement and washed out the existing pipe on the north end of the river. Emergency - reopening of Alabama Street occurred on June 10, 1980, after four months' construction, at a cost of \$106,390. During the construction phase, additional pipes were added to increase the capacity of the existing pipes. Minor erosion damage occurred on various City streets and some private property. The

Zanja experienced collapse between Redlands Boulevard and State Street near Kendall Drive, as well as in a portion of the channel in Sylvan Park. City crews instituted repairs at nominal cost.

Hazard: Flooding

Deaths: 0

Injuries: 0

Displaced People: 0

Location: 35 Cajon Street, Redlands, CA 92373

Latitude: 34.016094

Longitude: -117.166626.

## **6. SEPTEMBER 1976 FLOOD 9/29/1976**

On September 24, 1976, an intense local thunderstorm dropped most of its precipitation in a 20-30-minute period. At one spot, 3 ½ inches of rain fell during this time. This heavy rain produced an extremely high rate of runoff, which quickly exceeded the capacity of local drainage systems. Major overflows occurred on the eastern edge of Redlands' downtown business district, flooding the area and depositing mud up to three feet deep. Damages to houses, businesses, roads, and flood control facilities reached \$2 million.

Mission Zanja overflowed again in 1978, depositing water up to 30 inches deep in some places and causing an estimated \$100,000 in damages.

Ref: "Study of Potential Changes to Mission Zanja in Downtown Redlands for Flood Control", US Army Corps of Engineers, Los Angeles District, Information Bulletin, July 1984.

Hazard: Flooding

Deaths: 0

Injuries: 0

Displaced People: 150

Location: Various, 35 Cajon Street, Redlands, CA 92373

Latitude: 34.016094

Longitude: -117.166626

## **7. FEBRUARY 1969 FLOOD 2/22/1969**

The January and February 1969 floods were the most damaging floods of record in San Bernardino County. Unprecedented damages were sustained by property in the County. The storms and floods caused the deaths of at least 13 persons.

"An intense downpour on January 25, 1969, climaxed a nine-day period of heavy precipitation. From 10 to 20 inches of rain fell in the lowlands, from 25 to more than 50 inches in the mountains. Emergency crews prevented large property damage with sandbagging and other emergency work. Flooding could have been worse, but the ground was not saturated prior to the storms, so water was able to percolate into the ground.

One month later, February 22-25, 1969, another storm series hit. Since the ground was by then saturated, property damage was more severe. The runoff

from the storms resulted in the greatest flood of record on many streams in the upper Santa Ana River basin. Flooding from Mission Zanja deposited debris on streets, eroded road shoulders and parts of the Zanja's rock and mortar channel, washed out the bridge at New Jersey Street, damaged several residences, and inundated four citrus packing plants and several commercial businesses. Estimated damages were \$304,000." (US Army Corps of Engineers, LA District, Information Bulletin, July 1984.)

Flood damages in San Bernardino County from both floods were more than \$54,000,000. In the Santa Ana River drainage areas, the flood damages from the January flood were slightly greater than the flood damages from the February flood (\$22,165,00 in January and \$20,622,000 in February). However, in the Mojave River drainage areas, monetary damages from the February flood were more than 10 times greater than those caused by the January flood (\$1,020,000 in January and \$10,380,000 in February.)

Damages to residential property in the County were widespread, totaling about \$12,000,000. Damages in the Cucamonga area were particularly heavy: More than \$2,000,000 in damages occurred to residential property, and hundreds of people were forced to leave their homes – some for as long as 3 months. Damages to businesses and industrial property in San Bernardino County also were great, totaling more than \$8,000,000. Damages to business and industrial property were also especially severe in the Cucamonga area, where more than \$5,000,000 in damages was sustained. Agricultural losses were very severe. Intangible losses in the County were also great. Except for fatalities and injuries sustained during the floods, probably the greatest intangible damages sustained were the damages to morale of people whose homes were damaged or destroyed in the January and February floods. Other intangible damages included the disruption of normal community business and social activities, transportation and communications facilities, and public-utility services. Flood-damaged sewerlines and sewage-treatment plants posed a threat to the lives and health of many residents of San Bernardino County.

Hazard: Flooding  
Deaths: 13  
Injuries: 0  
Displaced People: 0  
Locations: Various, Redlands, CA 92373  
Latitude: 34.016094  
Longitude: -117.166626

## **8. FLOOD OF JAN 1969 1/25/1969**

The January and February 1969 floods were the most damaging floods of record in San Bernardino County. Unprecedented damages were sustained by property in the County. The storms and floods caused the deaths of at least 13 persons.

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Hazard: Flooding

Deaths: 0

Injuries: 0

Displaced People: 0

Location: Various, Redlands, CA 92373

Latitude: 34.016094

Longitude: -117.166626

#### **9. OEP-233-DR 12/5/1966**

"During the first third of December 1966, a series of three storms swept through San Bernardino County. December 5 recorded the fourth most severe rainfall period in 76 years of San Bernardino rainfall history with a near-record 4.23."

On December 5, nearly one-half mile of Alabama Street was washed out during

flows up to five feet deep. Violent flows from the Santa Ana River also severely eroded the north levee protecting the Redlands Sewage Treatment Plant. The Zanja again overflowed east of Wabash Avenue, poured through an orange grove and flooded the Crafton School Yard. On December 6, overflow from the unimproved "Little Zanja" was widespread. The University area, as well as the Central Business District, was layered with tons of mud and debris after two successive days of flooding. The north approach to the Kansas Street Bridge was washed away, and flows undercut the abutment, dropping the north end of the bridge about two feet. The bridges at both Iowa and New Jersey Streets suffered similar damages.

Hazard: Flooding

Deaths: 0

Injuries: 0

Displaced People: 0

Locations, Various Redlands, CA 92373

Latitude: 34.016094

Longitude: -117.166626

#### **10.OEP-211-DR 11/20/1965**

From November 20 to 27, 1965, a series of five storm periods, ranging from light to severe, inflicted extensive damage in the region. The most severe of these storms occurred between November 20 and 25, when eleven deaths (six in San Bernardino County) were attributed to the storms. Property damage estimates greater than \$11 million were recorded.

Within Redlands' jurisdiction, Alabama Street suffered extensive damage due to flood waters from the upper regions of the Santa Ana River/Mill Creek. Resultant flows put the Redlands Sewage Treatment Plan out of operation, took the city's largest water reservoir off line and produced significant damage throughout the northern portion of Redlands and its Central Business District. The Mission Zanja Creek, which flows through Redlands from a controlled diversion of Mill Creek for irrigation purposes, produced significant levels of mud and debris deposits, and flooded homes along Sylvan Boulevard. Water carried tons of mud from construction-bared slopes along Palo Alto Drive across Country Club Drive and through the storm drain channel, which bisects the golf course. Many intersections throughout the City were flooded, with gutters filled to overflowing with heavy runoff. Floodwater from the overflow of the Zanja flooded the basement of the Crafton Elementary School.

Hazard: Flooding

Deaths:

Injuries:

Displaced People:

Location: Various, Redlands, CA 92373

Latitude: 34.016094

Longitude: -117.166626.

### **11.NOVEMBER 1965 FLOOD 11/20/1965**

On November 20-25, 1965, a damaging general storm occurred throughout Southern California, following on the heels of a smaller general storm, which occurred about a week earlier. The antecedent rainfall conditions from the earlier storm left watersheds with a residual moisture content in the soils thus contributing to the accelerated runoff that occurred as a result of the intense precipitation on November 22. Above freezing temperatures in the mountain areas further contributed to increased runoff.

The storm has been placed in the category of a small flood likely to recur every five to fifteen years. Mill Creek flow was of about a 15-year frequency, the Santa Ana Canyon flow about a 5-year frequency, and Cucamonga Creek somewhat greater than a 10-year frequency. By comparison, the 1938 flood produced a surge of about a 50-year frequency on Mill Creek and the Santa Ana River, while Cucamonga Creek was rated higher than a 100-year frequency. Major flood-producing waters emanated from the highest watersheds in the 10,000-foot ranges

Hazard: Flooding  
Deaths: 0  
Injuries: 0  
Displaced People: 35  
Location: Various, Redlands, CA 92373  
Latitude: 34.016094  
Longitude: -117.166626

### **12.AUGUST 1965 FLOOD 8/11/1965**

Residents of Redlands began a massive clean-up job today in the wake of an electrifying flash flood that sent muddy waters cascading destructively through the City's streets this afternoon - - -. The muddy runoff overtaxed the capacities of storm drains and spewed across streets and highways into low-lying areas - - -. Water swept into the basements of the Crafton and Kingsbury schools and flowed through the lobby of Provident Federal Savings at Orange and State and into the basement where the vaults were flooded - - -. Two youths were rescued after they were swept 1 ¾ miles along a storm drain system, portions of which are buried pipe extending through downtown Redlands.

Hazard: Flooding  
Deaths: 0  
Injuries: 0  
Displaced People: 25  
Location: Various, Redlands, CA 92373  
Latitude: 34.016094  
Longitude: -117.166626

### **13.APRIL 1965 FLOOD 4/8/1965**

Fast-moving water spilled out of the debris-choked channel in numerous spots this afternoon creating a serious flood hazard to low-lying homes between Dearborn and University Streets. City officials generally blamed poor

maintenance of the Zanja for the flood. One house at Lincoln and Laramie Streets was partially flooded while foot-deep water swirled through the yards of many homes along the Zanja. Small bridges used for access from Sylvan Boulevard to homes on the other side were under water, but withstood the pressure.

Hazard: Flooding

Deaths: 0

Injuries: 0

Displaced People: 10

Location: Various, Redlands, CA 92373

Latitude: 34.016094

Longitude: -117.166626

## **A. Hazards Related to the Disaster**

### **1) Santa Ana River Wash**

Many flood hazards exist along the Santa Ana River. These hazards include the following:

#### **a) Roadway Crossings**

Three major arterial roadways cross the Santa Ana River wash within the City of Redlands.

#### **b) State Route 30**

Under the jurisdiction of the California Department of Transportation (Caltrans), is a four-lane freeway constructed in the late 1980's and early 1990's. The river crossing is a bridge constructed to Federal Highway Administration standards, capable of withstanding a 100-year flood event.

**c) Alabama Street and Orange Street** are arterial roadways under the jurisdiction of the City of Redlands. Both roadways currently exist as two-lane facilities and both a master-planned for a minimum of four lanes. The Orange Street crossing is currently constructed as "dip" crossings with culvert systems capable of carrying a 10-year or better storm flood before water crosses the roadway surface. Alabama Street may be capable of carrying a 1-year storm. Since its construction in 1995, it has been closed on four occasions to allow excess flow without endangering public safety. Both crossings are equipped with gates and road closure plans, implemented when flooding occurs. During Santa Ana River flows in excess of a 2-year storm, both roadways are closed to all through traffic, with all traffic being diverted to State Route 30. Substantial damage can occur to both roadways including the potential for washouts during any flood event exceeding a 2-year flood. Both crossings have been replaced twice: once in 1993 (FEMA 979), and once in 1995 (FEMA 1044/1046).

Warm, tropical rain falling at higher elevations, combined with melting snow, and excess rain at lower levels, created severe flooding conditions in the Santa Ana River. Rainfall, mud, debris, and boulders swept away

both roadway crossings, which had been replaced in 1995. New replacement costs were incurred for \$529,000.

## **2) Redlands Municipal Airport**

Redlands Municipal Airport is a general aviation facility with 230-based aircraft and 65,300 annual operations. The airport lies immediately next to the Santa Ana River in the northeast corner of the City of Redlands. The airport is along the southerly bank of the river approximately 30 feet above the river floor.

An earthen dike and a revetment fence maintained by the San Bernardino County Flood Control District (SBCFCD) protect the airport. The dike and fence may not be capable of containing a 100-year flood. If floodwaters breach the dike, airport property would be eroded and the potential is high for damage to the runway, navigational lighting and airport drainage systems. No damage occurred at the Airport as a result of the Winter Storms, 1995

## **3) California Street Landfill/Wastewater Treatment Plant**

The Wastewater Treatment Plant is located adjacent and south of the California Street landfill. A storm drain was constructed in 1993 that provides 100-year protection to the wastewater treatment plant from local flooding along Nevada Street and areas south of the treatment plant.

The California Street Landfill and Wastewater Treatment Plant are the primary and sole facilities that service the population of the City of Redlands. Both the landfill and wastewater treatment plant are protected from flows in the Santa Ana River along this reach by an earth and rock levee which has a post and wire revetment located at the toe of the landfill slope. The levee and revetment are owned by the San Bernardino County Flood Control District, and were constructed approximately 30 years ago.

The historic location of the main channel flow of the Santa Ana River in this reach has been in the northerly portion of the floodplain (away from the landfill and wastewater treatment plant). This location was controlled and maintained by the San Bernardino County Flood Control Department by "center cutting" or grading the channel to the northerly portion of the floodplain as necessary. This practice continued until recent environmental changes resulted in restrictions to grading activities in the channel. This reach of the river is habitat to a now federally listed as endangered plant species, the Santa Ana River Woolly star (Woolly star). Because of potential impacts to the Woolly stars and its habitat, grading and channel maintenance activities in the area along the reach of the landfill and wastewater treatment plant have been restricted.

Over the past few years, without the channel grading, flows in the river have meandered southerly placing the low flow channel adjacent to the landfill and wastewater treatment plant. As a result, the revetment, which is no longer maintained by the San Bernardino County Flood Control District, may not be relied upon to provide long-term flood protection to critical facilities such as

the wastewater treatment plant and landfill. According to the San Bernardino County Flood Control District, post and wire revetments are no longer built or maintained by the San Bernardino County Flood Control District, and existing levees are reinforced with large rock or riprap in areas with the San Bernardino County Flood Control District deems critical.

Storm flows during the winter of 1995 (estimated to be a 10-15 year event) were concentrated against a portion of the revetment, causing damage not only to that structure, but erosion of the levee which protects the landfill and wastewater treatment plant. An estimate to provide emergency repairs to the damaged levee by the Office of Emergency Services (OES) was set at \$62,000. Although the San Bernardino County Flood Control District provided riprap to the City for emergency repairs to the levee, the San Bernardino County Flood Control District has prioritized other projects along the Santa Ana River for long-term improvements. As a result, limited, if any, funds are available from the San Bernardino County Flood Control District to provide enhanced protection or annual maintenance to the levee.

Due to the environmental constraints presented by the Woolly star plant, it is not anticipated that channel grading will be resumed. Without such channel control, it is likely storm water will continue to flow more southerly, following the low flow channel established in winter 1995 storms. It is anticipated that in the best case, smaller storm events such as those in winter 1995, will result in repetitive damage to the revetment and levee, causing the need for annual repairs of at least the magnitude estimated to repair the 1995 damages by OES.

#### **4) San Timoteo Canyon / Live Oak Canyon**

San Timoteo Creek and Live Oak Creek traverse the south and southwesterly portions of the City of Redlands. These streams flow generally through rural areas. Some local development has occurred in the area with several structures being within the 100-year flood zones. Local streets and roads are subject to infrequent flooding and closures due to water and mudflows in the canyon areas. General maintenance along the San Timoteo creek is performed by the SBCFCD.

Mudslides in San Timoteo Canyon created damages associated with debris removal. Additionally, severe ditch and shoulder erosion, as well as culvert damage, forced closure of the road for several days. Federal Highways Administration/ER funds have been approved for \$220,000 to make necessary repairs.

#### **5) Mill Creek / Mission Zanja**

The Mill Creek Zanja serves as the principle storm drain for the eastern and southeastern portions of the City of Redlands. This drain carries the single greatest impact for flooding to the City of Redlands. Since the watershed for this drain includes portions of City and County territory, a regional solution to flooding along the drain must be sought.

Several attempts have been made to set assessments or development impact

fees to fund improvements along this drain. Due to the extremely high cost of improvements, such efforts have failed. The Army Corps of Engineers is currently constructing a full Federal project to provide channel improvements and storm protection for the City of Redlands.

The Zanja bears a National Register Designation, and portions within Sylvan Park were again damaged as a result of continued erosion from floodwater.

## **6) Local Storm Drain Systems**

A number of local storm drain systems run through the City of Redlands. Several of these have experienced local flooding during recent storm events. Several drains are proposed in areas with the greatest potential for local flooding:

Church Street from Pennsylvania Avenue to the Santa Ana River  
Judson Street from Brockton Avenue to the Mill Creek Zanja  
Mt. View Avenue from Lugonia Avenue to the Santa Ana River  
Lugonia Avenue from Alabama Street to the Mission Channel  
Lugonia Avenue and Texas Street

Judson Street, from Brockton Avenue to the Mill Creek Zanja, exhibits the greatest ability to produce direct and indirect damage costs to both public and private facilities. Due to the increased density of development in both the City and the County, storm water flows are exacerbated. Of the \$321,000 associated with Emergency Protective Measures and Debris removal alone during the winter storms of 1993, it is estimated that 75% of that sum was generated to aid citizens in this northeast quadrant of the City of Redlands.

During the 1995 Winter Storms, the majority effort involving Emergency Protective Measures and Debris Removal was concentrated in this area.

The City of Redlands General Plan, Health and Safety Element, evaluates the flood hazards that exist within the City of Redlands. The guiding and implementing policies are incorporated within this document, as attached. Mitigation provided by General Plan Policy is also provided.

Hazard: Flooding  
Deaths: 0  
Injuries: 0  
Displaced People: 0  
Various Locations: Redlands, CA 92373  
Latitude: 34.016094  
Longitude: -117.166626

The following table summarizes the occurrences, impact and costs of this hazard.

**(Dollar Amounts in Thousands)**

<b>Hazard: Flooding</b>		<b>Response and Recovery Costs</b>					
Name	Date	City Town	County	State	Federal	Other	Total
FEMA 1203-DR-CA	2/26/1998	\$0	\$0	\$0	\$1,096	\$300	\$1,396
FEMA 1046-DR-CA	3/1/1995	\$0	\$0	\$8	\$20	\$0	\$28
FEMA 979-DR-CA	1/5/1993	\$0	\$0	\$2,996	\$28,872	\$0	\$31,869
FEMA 935-DR-CA	2/16/1992	\$9	\$0	\$88	\$237	\$0	\$334
February 1980 Floods	2/1/1980	\$420	\$0	\$0	\$0	\$0	\$420
September 1976 Flood	9/29/1976	\$5,400	\$0	\$0	\$0	\$0	\$5,400
February 1969 Flood	2/22/1969	\$486	\$62,004	\$0	\$0	\$0	\$62,490
Flood of Jan 1969	1/25/1969	\$102	\$46,370	\$0	\$0	\$0	\$46,472
OEP-233-DR	12/5/1966	\$2,400	\$0	\$0	\$0	\$0	\$2,400
OEP-211-DR	11/20/1965	\$0	\$0	\$0	\$0	\$0	\$0
November 1965 Flood	11/20/1965	\$304	\$3,400	\$1,500	\$0	\$0	\$5,204
August 1965 Flood	8/11/1965	\$35	\$0	\$0	\$0	\$0	\$35
April 1965 Flood	4/8/1965	\$38	\$0	\$0	\$0	\$0	\$38
<b>Totals:</b>		<b>\$9,194</b>	<b>\$111,774</b>	<b>\$4,592</b>	<b>\$30,226</b>	<b>\$300</b>	<b>\$156,086</b>

***Calculated Priority Risk Index (CPRI)***

Probability: **3 Likely**

Magnitude/Severity: **3 Critical**

Warning Time: **3 6-12 Hours**

Duration: **3 Less than one week**

The CPRI for the Flooding hazard for City of Redlands is:

Probability + Magnitude/Severity + Warning Time + Duration = CPRI

$$3 \times .45 + 3 \times .30 + 3 \times .15 + 3 \times .10 = 3$$

**WILDFIRES**

***Historical Events***

The following section lists and describes the historical events associated with this hazard in City of Redlands.

**1. RECHE/REDLANDS FIRES 7/4/2001**

This wind-driven fire originated in Riverside County, in an area known as Reche

Canyon. The fire burned northeast over a period of approximately 2 hours, entering San Bernardino County and threatening residents in the area of San Timoteo Canyon and Pilgrim Road. We were notified by Riverside County that the fire was moving into our county and expected to burn into San Timoteo Canyon. They requested us to assemble engines for structure protection along Pilgrim Road in San Timoteo Canyon. The fire was diverted away from these structures because of backfiring operations, air support and hand crews into San Timoteo. Overall, the fire damaged approximately 700 acres by containment.

Hazard: Wildfires

Deaths: 0

Injuries: 0

Displaced People: 0

Location: San Timoteo Canyon, Redlands, CA 92373

Latitude: 34042.488336

Longitude: 1171051.36235

## **2. COMPOST FIRE 7/16/1998**

This fire occurred within the High Fire Hazard Area of the City of Redlands. This area is subject to a great deal of commuter and transient activity between counties. Fire was located at 1901 Alessandro Road, and caused by illegal dumping of organic materials within the San Timoteo Canyon. Chemical reaction resulted in spontaneous combustion of the compost heap at Sunset Hills Kennels. A unified command was established, including numerous strike teams hand, crews, fixed wing aircraft, helicopters and manpower. The fire consumed 140 acres, and resulted in one firefighter injury.

Hazard: Wildfires

Deaths: 0

Injuries: 1

Displaced People: 0

Location: 1901 Alessandro Road, Redlands, CA 92373

Latitude: 34055.451631

Longitude: 11710

## **3. CANYON FIRE 9/9/1996**

Sparking from railroad train traffic ignited this vegetation fire, which started adjacent to the Southern Pacific tracks north of San Timoteo Canyon Road and west of Alessandro Road. The high temperature was 99 degrees, with humidity at 24%. The fire was one-quarter acre in size, with medium fuel and moderate rate of spread. Winds were out of the west and steady, at 10 miles per hour. Limited access and erratic winds increased the spread of the fire, which spotted along the base of the hills, west of Smiley Ridge. The fire spread north, up the west slope of the Smiley Ridge subdivision. Winds increased, causing a spot fire in the flats east of Alessandro, adjacent to Sunset Hills Ranch. Increased erratic winds caused another spot fire to occur north of the first, now in heavier brush. Incoming resources attempted a hose lay up the flanks, but terrain and weather conditions advanced the spot out of reach. Due to topography and weather conditions, additional resources were ordered. Due to the fires potential, a unified command was established and structure groups assigned. Aircraft dropped on all flanks of the fire, and dozers cut lines on two divisions. Hand crews were also placed on all Divisions to facilitate a line between the burned and unburned

areas. The fire was 50% contained around midnight and 70% contained by 0600 hours on 9/10/96. The fire consumed 250 acres, with no loss of structures. Effective suppression tactics, ignition resistant construction requirements established over 10 years ago, residential sprinklers, and fuel modification allowed this fire to move eastward with no structure loss or damage. The fire then presented the potential of structure loss in older existing neighborhoods where these types of fuel modification had not been conditioned 15-20 years previous. This posed a threat for conflagration potential, and this is where the Fire Department would like to address hazard mitigation through grant implementation for existing property owners. Costs shown in damage figures are strictly related to overhead, manpower and equipment.

Hazard: Wildfires  
 Deaths: 0  
 Injuries: 0  
 Displaced People: 0  
 Location: San Timoteo Canyon, Redlands, CA 92373  
 Latitude: 34042488336  
 Longitude: 11710

The following table summarizes the occurrences, impact and costs of this hazard.

**(Dollar Amounts in Thousands)**

<b>Hazard: Wildfires</b>		<b>Response and Recovery Costs</b>					
Name	Date	City Town	County	State	Federal	Other	Total
Reche/Redlands Fires	7/4/2001	\$21	\$0	\$0	\$0	\$0	\$21
Compost Fire	7/16/1998	\$24	\$0	\$0	\$0	\$0	\$24
Canyon Fire	9/9/1996	\$82	\$0	\$0	\$0	\$0	\$82
Totals:		\$127	\$0	\$0	\$0	\$0	\$127

***Calculated Priority Risk Index (CPRI)***

Probability: **3 Likely**  
 Magnitude/Severity: **3 Critical**  
 Warning Time: **4 Less 6 Hours**  
 Duration: **3 Less than one week**

The CPRI for the Wildfires hazard for City of Redlands is:

$$\text{Probability} + \text{Magnitude/Severity} + \text{Warning Time} + \text{Duration} = \text{CPRI}$$

$$3 \times .45 + 3 \times .30 + 4 \times .15 + 3 \times .10 = 3.15$$

## 4.3 Vulnerability Assessment

### 4.3.1 Asset Inventory

<i>REQUIREMENT</i> §201.6(c)(2)(ii)(A):	" The plan Should describe the vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas ..."
--	--

The total Population of City of Redlands that is vulnerable is approximately 68,800.

#### 4.3.1.1 Community Asset Overview

This section provides an overview of the assets in City of Redlands.

##### **Critical Facilities:**

The critical facilities included in this plan to date include essential government services facilities, both structural and infrastructure.

According to the City of Redlands General Plan the projected population at build-out in the year 2020 is 90,000. The City of Redlands Housing Element suggests that there will be an additional 30,720 residential structures; an additional 8,646,200 square feet of commercial development; 10,048,400 square feet of additional office development, and 21,641,990 square feet of projected industrial development by build-out 2020.

Future critical facilities include at least one fire station and a Justice/Civic Center. Locations of these facilities are based on General Plan build-out in 2020.

##### **Non-Critical Facilities:**

The non-critical facilities included in this plan to date include Redlands Unified School District and the University of Redlands. They provide a high degree of community support and resources in the event of a natural disaster. While the University of Redlands and the Redlands Unified School District consider the attached list of facilities as critical to their individual organizations, the City recognizes the importance of these facilities, but does not deem them critical to the management of the City itself.

The following files are associated with all Assets in the Community:

- File Title: [Davis & Graeber Property Listing](#)  
File Description: This spreadsheet shows the government services facilities operated by the City of Redlands, their square footage and values.  
Uploaded: 7/29/2004

- File Title: [Critical Facilities - Flood - U of R](#)  
File Description: This spreadsheet shows the critical facilities of the University of Redlands that would be impacted by a natural disaster such as floods  
Uploaded: 7/29/2004
- File Title: [Critical Facilities - U of R - Earthquake](#)  
File Description: This spreadsheet shows the critical facilities of the University of Redlands that could be impacted by an earthquake.  
Uploaded: 7/29/2004
- File Title: [Critical Facilities of the RUSD](#)  
File Description: This spreadsheet identifies the critical facilities (all Schools within the City of Redlands) that could be impacted by a natural disaster such as flood, fire, or earthquake.  
Uploaded: 7/29/2004

#### 4.3.1.2 Critical Facility List

This section provides a listing of the Critical Facilities in the City of Redlands.

- **EOC**  
**Emergency Response Facilities**  
Size: 6290 sq.ft.  
*Facility Description:* Emergency Operations Center, fully equipped with audio-visual media, equipment and communications systems.  
  
*Primary Contact:*  
Battalion Chief Mitch McKee  
1270 W. Park Avenue, Building C  
Redlands, CA 92373  
Phone: 909-798-7600  
Fax: 909-798-7602  
E-mail: mmckee@confire.org  
Lon: 117125.84  
Lat: 34335.6883
- **Safety Hall**  
**Police Stations**  
Size: 20029 sq.ft.  
*Facility Description:* Police Station Annex  
  
*Primary Contact:*  
Police Chief Jim Bueermann  
212 Brookside Avenue  
Redlands, CA 92373  
Phone: 9097987621  
Fax: 9097987602  
E-mail: jbueermann@redlandspolice.org  
Lon: 11711  
Lat: 6.67473

- **Fire Station 261**  
**Fire Stations**  
 Size: 10755 sq.ft.  
*Facility Description:* Downtown Fire Station.

*Primary Contact:*  
 Fire Chief Mel Enslow  
 525 E. Citrus Avenue  
 Redlands, CA 92373  
 Phone: 9097987600  
 Fax: 9097987602  
 E-mail: menslow@confire.org  
 Lon: 1171032.42  
 Lat: 34320.7761
- **Fire Station 262**  
**Fire Stations**  
 Size: 3624 sq.ft.  
*Facility Description:* This is a full-response fire station located in the southern portion of Redlands.

*Primary Contact:*  
 Fire Chief Mel Enslow  
 1690 Garden Street  
 Redlands, CA 92373  
 Phone: 9097987600  
 Fax: 9097987602  
 E-mail: menslow@confire.org  
 Lon: 117916.282  
 Lat: 34134.4843
- **Fire Station 263**  
**Fire Stations**  
 Size: 6393 sq.ft.  
*Facility Description:* This fire station serves the northern portion of our City. It is a full-service fire station, responding to all call types.

*Primary Contact:*  
 Fire Chief Mel Enslow  
 10 W Pennsylvania Avenue  
 Redlands, CA 92374  
 Phone: 9097987600  
 Fax: 9097987602  
 E-mail: menslow@confire.org  
 Lon: 11710  
 Lat: 55.518303
- **Police Annex Building**  
**Police Stations**  
 Size: 20554 sq.ft.  
*Facility Description:* This facility houses the City of Redlands Police Department and serves as its headquarters.

*Primary Contact:*  
Police Chief Jim Bueermann  
30 Cajon Street  
Redlands, CA 92373  
Phone: 9097987621  
Fax: 9097987602  
E-mail: jbueermann@redlandspolice.org  
Lon: 1171055.9  
Lat: 34317.7104

- **Corporate Yard  
HAZMAT storage areas**

Size: 67418

*Facility Description:* This is the multi-facility corporate yard of the City of Redlands, including Purchasing, Equipment Maintenance, Electric & Water Shop, Street Maintenance Truck Shelters, and Equipment shelters. Also a LPNG tower is installed at this site.

*Primary Contact:*  
Marjie Pettus  
1270 W. Park Avenue, Bldgs A, B, D-M  
Redlands, CA 92373  
Phone: 9093354761  
Fax: 9093354762  
E-mail: mpettus@cityofredlands.org  
Lon: 117125.84  
Lat: 34335.6883

- **Highland Avenue Water Complex  
Water and Sewer**

Size: 2303335

*Facility Description:* This water treatment plant includes offices, lab and pump house, maintenance shop, storage chlorinator shelter reservoir (10 million gallons), Pump building, Wells #14, #16, and Ford Park Pump Station. This is part of a water system consisting of 18,000 service connections serving a population of 75,000.

*Primary Contact:*  
Greg Gage  
City of Redlands, Municipal Utilities Department  
Redlands, CA 92373  
Phone: 9097987698  
Fax: 9097987670  
E-mail: gphelps@cityofredlands.org  
Lon: 117934  
Lat: 34236

- **1 City Plaza - City Hall Government Facilities**

Size: 20554

*Facility Description:* Houses all City Departments outside of the Corporate Yard: Fire Administration, Treasurers Office, City Manager, City Attorney, City Council, Public Works, Municipal Utilities, Community Development and Planning, Downtown Business Development Offices, Finance and Administrative Services.

*Primary Contact:*

Marjie Pettus

Civic Center, 35 Cajon Street

Redlands, CA 92373

Phone: 9093354741

Fax: 9093354762

E-mail: mpettus@cityofredlands.org

Lon: 1171051.48

Lat: 34318.3928

- **Henry Tate Water Treatment Plant  
Water and Sewer**

Size: 0

*Facility Description:* Mill Creek - Tate Water Filtration Plant:

1. Building, \$951,084.
2. Clarifiers, \$808,104.
3. Reservoir - 2 mil gallons, \$58,543.
4. Reservoir - .19 mil gallons, 56,191.
5. Oak Wells#1, #2 w/bldg #2A, #8.

*Primary Contact:*

Gary G. Phelps

City of Redlands, P. O. Box 3005

Redlands, CA 92373

Phone: 9097987698

Fax: 9093354762

E-mail: gphelps@cityofredlands.org

Lon: 117422

Lat: 34421

- **Hinkley Water Treatment Plant - Emergency Response Facilities**

Size: 26614 sqft.

*Facility Description:* Facility includes the following:

1. Water Operations building, 7,422 sqft, \$953,610.
2. Mechanical facility, \$174,615.
3. Filter facility, 5,650 sqft, \$751,800.
4. Filter mechanical facility, \$222,075.
5. Floc/Sed Tanks, 13,542 sqft, \$652,155.
6. Utility building, \$84,945.
7. Influent mixing facility, \$70,245.
8. Tanks, basins, equip, elec. etc.,  
Square footage provided where available.

*Primary Contact:*

Gary G. Phelps  
1604 Crafton Avenue  
Redlands, CA 92373  
Phone: 909-798-7666  
Fax: 9093354762  
E-mail: gphelps@cityofredlands.org  
Lon: 117112  
Lat: 34421

- **Mt. View Lift Station - Energy Related**

Size: 3000 sq.ft.

*Facility Description:* Sewer Lift Station.

*Primary Contact:*

Gary G. Phelps  
2481 W. San Bernardino Avenue  
Redlands, CA 92374  
Phone: 9097987698  
Fax: 9097987670  
E-mail: gphelps@cityofredlands.org  
Lon: 1171432  
Lat: 34437

- **Fire Station 264 - Emergency Response Facilities**

Size: 12000 sq.ft.

*Facility Description:* This is a full-response fire station located in the southwest portion of Redlands, which houses our emergency operations center.

*Primary Contact:*

Mel Enslow  
1270 W. Park Avenue  
Redlands, CA 92373  
Phone: 909-798-7600  
Fax: 909-7987602  
E-mail: menslow@confire.org  
Lon: 117125.84  
Lat: 34335.6883

### CRITICAL FACILITY LISTING

Name	Facility Type	Critical Rank
EOC	Emergency Response Facilities	Critical
Safety Hall	Police Stations	Critical
Fire Station 261	Fire Stations	Critical
Fire Station 262	Fire Stations	Critical
Fire Station 263	Fire Stations	Critical
Police Annex Building	Police Stations	Critical
Corporate Yard	HAZMAT storage areas	Critical
Highland Avenue Water Complex	Water and Sewer	Critical
1 City Plaza - City Hall	Government Facilities	Critical
Henry Tate Water Treatment Plant	Water and Sewer	Critical
Hinkley Water Treatment Plant	Emergency Response Facilities	Critical
Mt. View Lift Station	Energy Related	Critical
Fire Station 264	Emergency Response Facilities	Critical

#### 4.3.1.3 Non-Critical Facility List

This section provides a listing of the Non-Critical Facilities in City of Redlands.

- University of Redlands  
High Population Area**

*Facility Description:* "University of Redlands is a private liberal arts and sciences university, consistently ranked among the best universities in the nation by U.S. News & World Report. Founded in 1907, the university historically has been committed to a mission dedicated to the individual student and an innovative academic program."

*Primary Contact:*

Corey Nomura  
 1200 E. Colton Avenue  
 Redlands, CA 92373  
 Phone: 9097932121  
 Fax: 9093355252  
 E-mail: Cory\_Nomura@redlands.edu  
 Lon: -117.165  
 Lat: 34.0616

- *Associated Files*  
 File Title: [Critical Facilities Template - Earthquakes](#)  
 File Description: This spreadsheet lists all critical facilities within the University of Redlands system impacted by Earthquake disaster.  
 Uploaded: 7/27/2004
  - File Title: [Critical Facilities Template - Flood](#)  
 File Description: This spreadsheets identifies all critical facilities of the University of Redlands system if impacted by flood disaster.  
 Uploaded: 7/27/2004
- **Redlands Unified School District**  
**High Population Area**  
 Size: 2330315  
*Facility Description:* See attached spreadsheet listing each facility by description, contact name, size type and value.  
  
*Primary Contact:*  
 Diana Stead  
 20 W Lugonia Avenue, P O Box 3008  
 Redlands, CA 92373  
 Phone: 9093075300  
 Fax: 90903075321  
 E-mail: [diana\\_stead@redlands.k12.ca.us](mailto:diana_stead@redlands.k12.ca.us)  
 Lon:  
 Lat:
  - *Associated Files*  
 File Title: [Critical Facilities Template - RUSD](#)  
 File Description: This document provides a listing, facility by facility, providing all requested detail based on the impact of flood, fire or earthquake disasters.  
 Uploaded: 7/27/2004
- **Redlands Wastewater Plants**  
**High Population Area**  
 Size: 10290  
*Facility Description:* This includes all City of Redlands Wastewater Treatment Facilities, thirty (30) facilities citywide.  
  
*Primary Contact:*  
 Gary Phelps  
 City of Redlands, 35 Cajon Street  
 Redlands, CA 92373  
 Phone: 9097987698  
 Fax: 9097987670  
 E-mail: [gphelps@cityofredlands.org](mailto:gphelps@cityofredlands.org)  
 Lon: 1171248  
 Lat: 34522

NON-CRITICAL FACILITY LISTING

<b>Name</b>	<b>Facility Type</b>	<b>Critical Rank</b>
University of Redlands	High Population Area	High
Redlands Unified School District	High Population Area	Critical
Redlands Wastewater Plants	High Population Area	Critical

#### 4.3.1.4 Individual Hazard Vulnerability Analysis

This section serves to identify each hazard confronting the community and its vulnerabilities to that hazard

#### Natural Hazards

##### 1. Earthquake

A. Population. Approximately 10.26 percent of the community's population is vulnerable.

B. Critical Facilities.

(1) Approximately 25 percent of the community's critical facilities are vulnerable.

(2) The specific critical facilities vulnerable in City of Redlands are:

- a. City Hall, including Fire Administration, Planning, Municipal Utilities, Administrative Services, City Council Office, Treasurer's Office, Public Works, and Finance Departments.
- b. Redlands Safety Hall Police Facility.
- c. Redlands Police Annex Facility.
- d. Redlands Fire Station 261.
- e. Redlands Fire Station 262.

B. Non-Critical Facilities.

(1) Approximately 75 percent of the community's Non-Critical Facilities are vulnerable.

(2) The specific Non-Critical Facilities vulnerable in City of Redlands are:

- a. Redlands historic downtown district.
- b. Redlands Residential Historic Districts.
- c. University of Redlands.
- d. Redlands School District schools and facilities.
- e. Redlands downtown commercial industrial district.

##### 2. Flooding

A. Population. Approximately 1.51 percent of the community's population is vulnerable.

B. Critical Facilities.

(1) Approximately 25 percent of the community's critical facilities are vulnerable.

(2) The specific critical facilities vulnerable in City of Redlands are:

- a. City of Redlands Police Annex

- b. City of Redlands Safety Hall
- c. City of Redlands Civic Center, including City Hall, Fire Administration, Municipal Utilities, Public Works, Finance, Treasurer, Administrative Services and Planning Departments.
- d. Redlands Fire Station 261.

C. Non-Critical Facilities.

(1) Approximately 75 percent of the community's Non-Critical Facilities are vulnerable.

(2) The specific Non-Critical Facilities vulnerable in City of Redlands are:

- a. The entire downtown commercial district.
- b. Chamber of Commerce.
- c. Downtown industrial businesses.
- d. University of Redlands.
- e. Redlands Unified School District facilities.

### **3. Wildfires**

A. Population. Approximately 0.46 percent of the community's population is vulnerable.

B. Critical Facilities.

(1) Approximately 0 percent of the community's critical facilities are vulnerable.

(2) There are no specific critical facilities vulnerable in the City of Redlands.

C. Non-Critical Facilities.

(1) Approximately 25 percent of the community's Non-Critical Facilities are vulnerable.

(2) The specific Non-Critical Facilities vulnerable in City of Redlands are:

- a. Residential Rural Living
- b. Horse Ranches
- c. Rail Road tracks

### **Technology Hazards**

### **Human Hazards**

### 4.3.2 Potential Loss Estimation

<i>REQUIREMENT</i> §201.6(c)(2)(ii)(B):	[The plan should describe vulnerability in terms of an] estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(I)(A) of this section and a description of the methodology used to prepare the estimate ...
--	---

#### 4.3.2.1 Facility Replacement Cost Estimation

This section describes the replacement costs and economic impacts from lost facilities:

- **University of Redlands  
High Population Area**  
Facility Replacement Cost: \$166605850  
Estimated Economic Impact: \$19000000  
Description of Economic Impact: Loss calculations were based on the assumptions that the University would be closed for 30 days and the University's buildings/facilities would not be inhabitable for one year. Estimated loss only included the loss of tuition, room & board, and rent (from university owned properties located near the campus), the expense of housing & transportation for displaced students living in university-owned buildings, and the expense of renting mobile classrooms for instruction & administrative services.
- **Redlands Unified School District  
High Population Area**  
Facility Replacement Cost: \$325038010  
Estimated Economic Impact: \$325038010  
Description of Economic Impact: See attached spreadsheets.
- **Redlands Wastewater Plants  
High Population Area**  
Facility Replacement Cost: \$45000000  
Estimated Economic Impact: \$45000000  
Description of Economic Impact: System redundancy assures that economic impacts from damage or disruption will be minimal, except for the Wastewater Plant. Economic impact from the loss of this facility would be severe, due to public health dangers, environmental damages and regulatory violations. Replacement costs are based on engineering estimates for similar facilities construction.
- **EOC  
Emergency Response Facilities**  
Facility Replacement Cost: \$2000000  
Estimated Economic Impact: \$2000000  
Description of Economic Impact: The EOC is being converted to a Fire Station. This amount represents the cost of operating and building a new one.

- **Hinkley Water Treatment Plant  
Emergency Response Facilities**  
 Facility Replacement Cost: \$20000000  
 Estimated Economic Impact: \$20000000  
 Description of Economic Impact: System redundancy assures that economic impacts from damage or disruption will be minimal. Replacement costs based on engineering estimates for similar facilities construction.
- **Fire Station 264  
Emergency Response Facilities**  
 Facility Replacement Cost: \$2100000  
 Estimated Economic Impact: \$3500000  
 Description of Economic Impact: The above figures are based upon current completion and potential future damage and replacement within three years. The loss of the facility would impact our ability to provide emergency services to the City should a disaster occur. Estimates are based on replacement costs of apparatus, communications, equipment, safety equipment, facility replacement, and personnel.
- **1 City Plaza - City Hall  
Government Facilities**  
 Facility Replacement Cost: \$7829421  
 Estimated Economic Impact: \$7000000  
 Description of Economic Impact: The loss of these facilities would mean the temporary loss of municipal services. The economic loss is estimated on an average \$500,000/day revenue, which, based on the impact to the City of Northridge, a City similar to Redlands, would be lost for approximately two weeks, until temporary offices are established.
- **Mt. View Lift Station  
Energy Related**  
 Facility Replacement Cost: \$1500000  
 Estimated Economic Impact: \$1500000  
 Description of Economic Impact: System redundancy assures that economic impacts from damage or disruption will be minimal. Replacement costs based on engineering estimates for similar facilities construction.
- **Fire Station 261  
Fire Stations**  
 Facility Replacement Cost: \$2000000  
 Estimated Economic Impact: \$7500000  
 Description of Economic Impact: The loss of the facility would impact our ability to provide emergency services to the City should a disaster occur. Estimates are based on replacement costs of apparatus, communications equipment, safety equipment, facility replacement, and personnel.
- **Fire Station 262  
Fire Stations**  
 Facility Replacement Cost: \$445478  
 Estimated Economic Impact: \$700000  
 Description of Economic Impact: The loss of the facility would impact our ability to provide emergency services to the City should a disaster occur. Estimates are based on replacement costs of apparatus, communications equipment, safety equipment, facility replacement, and personnel.

- **Fire Station 263**  
**Fire Stations**  
 Facility Replacement Cost: \$1502815  
 Estimated Economic Impact: \$450000  
 Description of Economic Impact: The loss of the facility would impact our ability to provide emergency services to the City should a disaster occur. Estimates are based on replacement costs of apparatus, communications equipment, safety equipment, facility replacement, and personnel.
- **Safety Hall**  
**Police Stations**  
 Facility Replacement Cost: \$2809733  
 Estimated Economic Impact: \$20000000  
 Description of Economic Impact: Estimates are based on figures provided by Davis & Graeber, Insurance, the City's insurance provider.
- **Police Annex Building**  
**Police Stations**  
 Facility Replacement Cost: \$2935056  
 Estimated Economic Impact: \$20000000  
 Description of Economic Impact: The loss of the facility would impact our ability to provide security and traffic control and public safety for the City should a disaster occur. Estimates are based on replacement costs of apparatus, communications equipment, safety equipment, facility replacement, and personnel.
- **Corporate Yard**  
**HAZMAT storage areas**  
 Facility Replacement Cost: \$3401173  
 Estimated Economic Impact: \$6306672  
 Description of Economic Impact: This facility houses all City required equipment and materials for the normal day-to-day activities as well as emergency needs. The figure shown for economic impact reflects the budget amount to run Purchasing, Equipment Maintenance, Stores and Building Maintenance out of the Corporate Yard, annually.
- **Highland Avenue Water Complex**  
**Water and Sewer**  
 Facility Replacement Cost: \$30000000  
 Estimated Economic Impact: \$30000000  
 Description of Economic Impact: System redundancy assures that economic impacts from damage or disruption will be minimal. Replacement costs are based on engineering estimates for similar facilities construction.
- **Henry Tate Water Treatment Plant**  
**Water and Sewer**  
 Facility Replacement Cost: \$20000000  
 Estimated Economic Impact: \$20000000  
 Description of Economic Impact: System redundancy assures that economic impacts from damage or disruption will be minimal. Replacement costs are based on engineering estimates for similar facilities construction.

#### 4.3.2.2 Individual Hazard Economic Loss Estimation

This section describes the potential losses due to each hazard confronting the community or jurisdiction:

##### Natural Hazards

#### 1. Earthquake

##### Summary of Economic Losses

- a. The economic loss resulting from this hazard is approximately \$204,750,000
- b. The loss from damage to structures from this hazard is approximately \$2,000,000,000.
- c. The following is a description of the estimated losses:

Unreinforced masonry buildings present the most serious life-safety risk of all buildings. This has been demonstrated in every moderate to severe earthquake that has occurred in the United States and around the World. The City of Redlands currently has 84 unreinforced masonry (URM) buildings. Most of the vulnerable URM buildings exist in planning areas identified by the City to result in high loss of life, injury, and emergency service activity. (Reference, Special Publication 102, Page 55, Figure 6., "URM Buildings in Redlands"). Many educational facilities including the University of Redlands, which exists 10 miles from the San Jacinto Fault Zone and 5 miles from the San Andreas Fault zone, would experience a double M intensity factor of IX. This shaking intensity will result in moderate structural and non-structural damage.

Economic loss was generated from County Assessor data and represents total private property improvements of parcels within the downtown commercial districts.

The economic loss amount represents gross income of businesses located in the downtown area for the calendar year 2003 as reported to the City Treasurer's office for business tax purposes.

#### 2. Flooding

##### Summary of Economic Losses

- a. The economic loss resulting from this hazard is approximately \$204,750,000
- b. The loss from damage to structures from this hazard is approximately \$89,314,044.
- c. The following is a description of the estimated losses:

Damage or destruction to all critical facilities within the area of impact involving our downtown commercial and historical district. Bordered by I-10 freeway to the north, Texas Street to the west, University Avenue to the east, and Olive to the south.

The Damaged/Loss Structure number was generated from County Assessor data and represents total private property improvements of parcels within the Zanja 100 yr flood zone between Texas and Church Streets.

The economic loss represents the gross income of businesses located in this area for the calendar year 2003 as reported to the City Treasurer's Office for business tax purposes.

### **3. Wildfires**

#### Summary of Economic Losses

- a. The economic loss resulting from this hazard is approximately \$2.5 Million per day.
- b. The loss from damage to structures from this hazard is approximately \$6,000,000
- c. The following is a description of the estimated losses:

Residential structural loss in residential high-value area within the Wildland Interface Network. Damage to commercial equestrian property loss and animal loss. Damage to or closure of rail in canyon resulting in shipment interruption or loss. The economic loss could be as much as \$2.5 million per day, according to BNSF.

### **Technology Hazards**

### **Human Hazards**

#### **4.3.2.3 Individual Hazard Human Loss Estimation**

### **Natural Hazards**

#### **1. Earthquake**

##### Summary of Human Losses

- a. The estimated number of fatalities resulting from this hazard is approximately 57.
- b. The estimated number of injuries resulting from this hazard is approximately 1000.
- c. The estimated number of displacees resulting from this hazard is approximately 6000.
- d. Total number of people affected: 7057.
- e. Percent of community's population at risk: 10.26%.

#### **2. Flooding**

##### Summary of Human Losses

- a. The estimated number of fatalities resulting from this hazard is approximately 2.

- b. The estimated number of injuries resulting from this hazard is approximately 40.
- c. The estimated number of displacees resulting from this hazard is approximately 1000.
- d. Total number of people affected: 1042.
- e. Percent of community's population at risk: 1.51%.

### **3. Wildfires**

#### Summary of Human Losses

- a. The estimated number of fatalities resulting from this hazard is 0.
- b. The estimated number of injuries resulting from this hazard is approximately 15.
- c. The estimated number of displacees resulting from this hazard is approximately 300.
- d. Total number of people affected: 315.
- e. Percent of community's population at risk: 0.46%

#### **Technology Hazards**

#### **Human Hazards**

### 4.3.3 Analysis of Community Development Trends

<i>REQUIREMENT</i> §201.6(c)(2)(ii)(C):	[The plan should describe vulnerability in terms of] providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.
--	--

#### 4.3.3.1 Development History

This section describes the development history for City of Redlands.

##### **Development History:**

From Citrus boomtown to the Victorian good life in California to threatened total absorption by the Southern California metropolis -- Redlands has maintained a strong image in a region and state where sameness is battering the defenses of freestanding towns. The City's site must have been an easy choice for founders Judson and Brown when they laid out the streets in 1881. Views, the railroads, the climate, ample water from the Bear Valley Reservoir, and the beauty and profit of citrus brought Easterners with the time and money to create a beautiful city. By the time a catastrophic freeze struck in 1913, Redlands was a city of 20,000 with most of its architectural and cultural environment in place. When the pace of development resumed in the 20's, Redlands' quality image was the attraction.

##### **Future Development:**

Today's residents feel strongly about preserving Redlands' character and setting. New projects are debated, mistakes are remembered, and growth initiatives and open space bonds have been approved. During the 1980s, other Inland Empire communities experienced the growth pressures Redlands can expect during the next two decades. The General Plan describes the City its present residents believe should emerge. See General Plan at City of Redlands Website as listed in reference document.

#### 4.4 Multi-Jurisdictional Risk Assessment

<i>REQUIREMENT</i>	For multi-jurisdictional plans, the risk assessment section must assess each jurisdiction's risks where they vary from the risks facing the entire planning area.
<i>§201.6(c)(2)(iii):</i>	

#### 4.4 Multi-Jurisdictional Risk Assessment

*Not Applicable*

## Section 5 – Mitigation Strategy

### 5.1 Community Capability Assessment

The City has a number of already adopted development code ordinances that strengthen and enhance Redlands' capability to mitigate damages that could be sustained as a result of existing identified hazards. The Local Mitigation Plan provides the foundation to support and sustain continued use and enforcement of those mitigation-based ordinances. For example, in a Community Assistance Visit (CAV) on June 26, 2003 the FEMA representative found no programmatic, engineering, or floodplain management issues that would preclude the City of Redlands from participating in the Community Rating Status program. This finding supports that Redlands' local ordinances are responsive to flood hazards. The City of Redlands has a Building Code Effectiveness Grading Schedule (BECG) rating of 10. This finding supports that Redlands' local ordinances are responsive to a variety of hazards, including seismic, flooding and wind.

- Storm Water Management Ordinances: Yes
- Stream Management Ordinances: Yes
- Zoning Management Ordinances: Yes
- Subdivision Management Ordinances: Yes
- Erosion Management Ordinances: Yes
- Floodplain Management Ordinances: Yes
- Floodplain Management Plan Published Date: 3/31/1996
- Floodplain Management Last Delineation Date: 3/31/1996
- Elevation Certificates Maintained: Yes
- National Flood Insurance Program Community: Yes
- National Flood Insurance Join Date: 1/3/1979
- NFIP Number: 060279
- Land Use Plan: Yes
- Land Use Plan Last Update: 8/5/2003
- Community Zoned: Yes
- Zoned Date: 8/5/2003
- Established Building Codes: Yes
- Building Codes Last Updated: 11/1/2002
- Type of Building Codes: California Building, Electrical, Plumbing, Mechanical, Fire
- Local Electric Utilities: Southern California Edison
- Local Water Utilities: City of Redlands Municipal Utilities
- Local Sewage Treatment Utilities: City of Redlands Municipal Utilities
- Local Natural Gas Utilities: Southern California Gas Company
- Local Telephone Utilities: Verizon
- Fire Insurance Rating: ISO Rating 3/9
- Fire Insurance Rating Date: 10/15/2002
- Previous Mitigation Plans: A copy of a memorandum identifying hazard mitigation programs and activities, which resulted in the awarding of a 2004 Disaster Resistant California Community Award to the City of Redlands is attached.
- Flood Insurance Claims: A copy of a memorandum identifying hazard mitigation programs and activities, which resulted in the awarding of a 2004 Disaster Resistant California Community Award to the City of Redlands is attached.

### 5.1.1 Existing Plans, Policies, and Ordinances

The City will evaluate its existing General Plan, Municipal Code and policies and recommend incorporating those changes as may be required to implement the Local Mitigation Plan. The City would do this by reference, possibly adding a policy that refers to the implementation of the Local Mitigation Plan.

#### *Existing Community Plans/Documents:*

- City of Redlands General Plan - Refer to [www.ci.redlands.ca.us/plans/general\\_plan.htm](http://www.ci.redlands.ca.us/plans/general_plan.htm)
- City of Redlands Flood Hazard Mitigation Plan, Rev March 31, 1996 – Attached
- California Environmental Quality Act (CEQA) – Refer to [www.ca.gov](http://www.ca.gov) , Click on Environmental & Natural Resources, then California Environmental and Natural Resource Laws, then CEQA.
- California Office of Planning & Research - Refer to <http://www.opr.ca.gov>
- State of California Hazard Mitigation Plan - Refer to [www.oes.ca.gov](http://www.oes.ca.gov) , Click on Hazard Mitigation and follow links to the State Plan.

### 5.1.2 Prior Mitigation Actions and Projects

This section serves to identify the Previous Mitigation Plans, Projects and Actions:

#### *Previous Mitigation Plans, Projects and Actions:*

- Attached is a copy of a memorandum identifying hazard mitigation programs and activities, which resulted in the awarding of a 2004 Disaster Resistant California Community Award to the City of Redlands.

#### 5.1.2.1 Completed and On-Going Mitigation Projects

This section serves to identify the Completed and On-Going Projects in the community.

##### **Project #1: HMG459-29**

1. Name: Multi Hazard Mitigation Grant
2. Description: Multi-Hazard Mitigation Grant, a three-element grant.
3. Alternatives: Do not provide these mitigation programs.
4. Strategy:
  - Public Education Segment: Included education and training of approximately 20,000 citizens with age appropriate programs such as Learn Not to Burn, Disaster Dudes, Neighborhood Net and Safe Seniors.
  - Purchase of a Fire Safe Demonstration Trailer to share multi-jurisdictionally as an education tool to show both children and adults home safety measures and proper escape routes in the event of a fire.
  - Video Production to be aired on local community television station.

5. Status: On-Going
6. Completion Date: 6/1/2003
7. Local Priority: High
8. Longitude: -117.166626  
Latitude: 34.016094
9. Hazards Mitigated:
  - Wildfires: 75%
  - Earthquake: 50%
10. Total Cost: 125000
11. Calculated BC Ratio: 8855
12. Custom BC Ratio: 0
13. Description of Custom BC Ratio: Benefit cost ratios not performed on public education projects.
14. Funding Description: Funding was provided as a 75/25 match.

**Project #2: PRE-DISASTER MITIGATION PLAN -LHMP**

1. Name: Pre-Disaster Mitigation Plan
2. Description: To plan, implement and monitor Local Hazard Mitigation Plan.
3. Alternatives: None.
4. Strategy:
  - Public Education
  - Develop Planning Team
  - Schedule monthly meetings
  - Prioritize local hazards.
  - Develop mitigation measures.
  - Complete Hazard Mitigation Plan and submit to OES as draft document.
  - Update as required.
  - Submit final document to FEMA
5. Status: On-Going
6. Completion Date: February 2005
7. Local Priority: High
8. Longitude: -117.166626  
Latitude: 34.016094
9. Hazards Mitigated:
  - Flooding: 50%
  - Wildfires: 50%
  - Earthquake: 40%
10. Total Cost: 156700
11. Calculated BC Ratio: 6585.399
12. Custom BC Ratio: 0
13. Description of Custom BC Ratio:
  - Cost Benefit Analysis not performed on local mitigation plan grants.

14. Funding Description: 75/25 Match.

**Project #3: Fire Demonstration Garden**

1. Name: Fire Demonstration Garden
2. Description: A garden designed with fire-resistant plantings, including samples of fire-resistant structural materials.
3. Alternatives: None.
4. Strategy:
  - The Ford Park Demonstration garden, located in the urban wildland interface area of Redlands, is a 1-acre park.
  - The site was scarified and reconstructed to demonstrate various fire resistant landscape plantings.
  - A 300 sq.ft. Kiosk was constructed using various fire resistant structural materials, to demonstrate these building options.
5. Status: On-Going
6. Completion Date: 1999
7. Local Priority: Medium
8. Longitude:  
Latitude:
9. Hazards Mitigated:
  - Wildfires: 40%
10. Total Cost: 120000
11. Calculated BC Ratio: 20
12. Custom BC Ratio: 0
13. Description of Custom BC Ratio: None performed at time.
14. Funding Description:
  - This program was a 50/50 funding match. In this grant, the City of Redlands was significantly overmatched through the interest and generosity of its residents.

**Project #4: FEMA DR-CA-1005-0077**

1. Name: Fire Safe 2000
2. Description: A fire mitigation grant to fund defensible space landscaping.
3. Alternatives: Do not offer this program.
4. Strategy:
  - The program was funded by a Fire Mitigation Grant which provided seed money of \$3000 per household in the Urban Wildland Interface high fire hazard project area, for devegetation, irrigation and revegetation of defensible space materials.
  - Newspaper articles were published in all area papers informing citizens of the grant funding and criteria for qualification.
  - Forty-two households participated in the program, which on average exceeded \$15,000 per household.

- Project well received and highly over-matched.
5. Status: Complete
  6. Completion Date: 11/1/2002
  7. Local Priority: High
  8. Longitude:  
Latitude:
  9. Hazards Mitigated:
    - Wildfires: 40%
  10. Total Cost: 500000
  11. Calculated BC Ratio: 4.8
  12. Custom BC Ratio: 1.007646E-02
  13. Description of Custom BC Ratio:
    - Using the Smiley Ridge area of Redlands as basis, total project cost of \$500,000 and Total project benefit of \$49,620,600.  
Funding Description: This mitigation grant was a 75/25 match grant. Citizen participation resulted in a 20% overmatch.

**Project #5: Ford Street Project**

1. Name: Ford Street Storm Drain
2. Description: Construction of a storm drain to divert waters in case of flooding.
3. Alternatives: None
4. Strategy: Design and construction of a storm drain to collect drainage adjacent to the Valley Preparatory Elementary School and adjacent residential structures from recurrent flooding.
5. Status: Complete
6. Completion Date: 6/1/1994
7. Local Priority: High
8. Longitude:  
Latitude:
9. Hazards Mitigated: Flooding
10. Total Cost: 500000
11. Calculated BC Ratio: 0
12. Custom BC Ratio: 1
13. Description of Custom BC Ratio: No B/C existed at time of mitigation grant award.
14. Funding Description: 75/25 Split.

**Project #6: Section 406 Hazard Mitigation**

1. Name: Smiley Library Retrofit
2. Description: Retrofit of Smiley Library Stack Wing - Section 406 Grant.
3. Alternatives: None
4. Strategy:

- Following the 1992 Landers/Big Bear Earthquake, it became obvious that there was a potential separation of the stack wing addition to the library.
- The roof was removed, poly-resin core and steel rebar were placed in the west and north walls.
- The roof was replaced and braced on to prevent future movement between the 1923 stack wing, and the original National Registry structure.

5. Status: Complete

6. Completion Date: 6/1/1995

7. Local Priority: Critical

8. Longitude:

Latitude:

9. Hazards Mitigated:

- Earthquake: 75%

10. Total Cost: 220000

11. Calculated BC Ratio: 7516.193

12. Custom BC Ratio: 0

13. Description of Custom BC Ratio:

- Section 406 Grant, tied to the damage of the structure.

14. Funding Description: Section 406 Grant, tied to the damage of the structure.

**Project #7: 99-DISASTER INITIATIVE GRANT-010**

1. Name: Disaster Initiative Grant

2. Description: This Disaster Initiative Resistant Grant was for the installation of a storm drain at 9th and Central in Redlands.

3. Alternatives: Not to construct the storm drain.

4. Strategy:

- The City of Redlands entered into a cooperative agreement with the San Bernardino County Flood Control District to construct an enlarged storm drain at the corner of 9th and Central (the historic Mission Zanja) in Redlands.
- The City paid \$19,000 for the Environment Impact Report and the County of San Bernardino administered the contract and paid all other costs (over \$1,000,000).

5. Status: Complete

6. Completion Date: 11/1/2003

7. Local Priority: High

8. Longitude:

Latitude:

9. Hazards Mitigated:

- Flooding: 75%

10. Total Cost: 1400000

11. Calculated BC Ratio: 157.5343

12. Custom BC Ratio: 1

13. Description of Custom BC Ratio:

- City paid \$19,000 for the EIR, and County of San Bernardino paid over \$1,000,000.

14. Funding Description: City paid \$19,000 for the EIR, and County of San Bernardino paid over \$1,000,000.

**This section lists Completed and On-Going Projects in the community by hazard.**

**Natural Hazards**

**1. Earthquake**

The following table identifies “Completed and On-Going Projects” to mitigate the Earthquake hazard.

**(Dollar Amounts in Thousands)**

Project No.	Completion Date	B/C Ratio	Custom B/C Ratio	Percent Mitigation	Total Cost	Available Financing										Total Funding
						City/Town		County		State		Federal		Other		
						Amount	FY	Amount	FY	Amount	FY	Amount	FY	Amount	FY	
Section 406 Hazard Mitigation	6/1/1995	7,516.19	0.00	75	\$220	\$0	0	\$0	0	\$55	1994	\$165	1994	\$0	0	\$220
HMG459-29	6/1/2003	8,855.00	0.00	50	\$125	\$31	1999	\$0		\$0		\$94	1999	\$0		\$125
PDM-LHMP		6,585.40	0.00	40	\$157	\$35	2004	\$0	0	\$0	0	\$112	2004	\$0	0	\$147
<b>Totals:</b>					<b>\$502</b>	<b>\$66</b>		<b>\$0</b>		<b>\$55</b>		<b>\$371</b>		<b>\$0</b>		<b>\$492</b>

**2. Flooding**

The following table identifies “Completed and On-Going Projects” to mitigate the Flooding hazard.

**(Dollar Amounts in Thousands)**

Project No.	Completion Date	B/C Ratio	Custom B/C Ratio	Percent Mitigation	Total Cost	Available Financing										Total Funding
						City/Town		County		State		Federal		Other		
						Amount	FY	Amount	FY	Amount	FY	Amount	FY	Amount	FY	
99-DRI-010	11/1/2003	157.53	1.00	75	\$1,400	\$19	2000	\$1,381	2000	\$0		\$0		\$0		\$1,400
PDM-LHMP		6,585.40	0.00	50	\$157	\$35	2004	\$0	0	\$0	0	\$112	2004	\$0	0	\$147
<b>Totals:</b>					<b>\$1,557</b>	<b>\$54</b>		<b>\$1,381</b>		<b>\$0</b>		<b>\$112</b>		<b>\$0</b>		<b>\$1,547</b>

### 3. Wildfires

The following table identifies "Completed and On-Going Projects" to mitigate the Wildfires hazard.

(Dollar Amounts in Thousands)

Project No.	Completion Date	B/C Ratio	Custom B/C Ratio	Percent Mitigation	Total Cost	Available Financing										
						City/Town		County		State		Federal		Other		Total Funding
						Amount	FY	Amount	FY	Amount	FY	Amount	FY	Amount	FY	
FEMA DR-CA-1005-0077	11/1/2002	4.80	0.01	40	\$500	\$38	1999	\$0		\$0		\$150	1999	\$0		\$188
HMG459-29	6/1/2003	8,855.00	0.00	75	\$125	\$31	1999	\$0		\$0		\$94	1999	\$0		\$125
PDM-LHMP		6,585.40	0.00	50	\$157	\$35	2004	\$0	0	\$0	0	\$112	2004	\$0	0	\$147
00004		20.00	0.00	40	\$120	\$20	1999	\$0		\$0		\$69	1999	\$70	1999	\$159
<b>Totals:</b>					<b>\$902</b>	<b>\$124</b>		<b>\$0</b>		<b>\$0</b>		<b>\$425</b>		<b>\$70</b>		<b>\$619</b>

### Technology Hazards

### Human Hazards

### 5.1.3 Technical and Fiscal Resources

This section describes the technical and fiscal resources for City of Redlands.

*Technical and Fiscal Resources:*

- Redlands Municipal Code – Refer to [www.ci.redlands.ca.us/municipal\\_code.html](http://www.ci.redlands.ca.us/municipal_code.html)
- City of Redlands Budget, adopted July 1, 2004. – Available for review at [www.ci.redlands.ca.us](http://www.ci.redlands.ca.us)
- California Building Code: Refer to the City of Redlands Community Development Department. The 2001 California Building Code is available for review.
- California Fire Code: Refer to the City of Redlands Fire Department. The 2001 California Fire Code is available for review.
- Article 8601 as amended by local Ordinance requires Fire Protection Plans for all new construction in our City's identified High Fire Hazard area.
- 44 Code of Federal Regulations
- USGS
- Title 19, California Government Code – Attached
- California Earthquake Loss Reduction Plan
- California Fire Plan
- State Flood Hazard Mitigation Plan
- State General Plan Guidelines
- Recommendations of the California Floodplain Management Task Force
- Redlands Unified School District and University of Redlands Local hazard mitigation plans as referenced within this Plan.
- OPR technical advice publications
- Integrated Watershed Planning Principles
- Southern California Edison Hazard Mitigation Plan, April 2004, available at [www.sce.com](http://www.sce.com)

## 5.2 Mitigation Goals

### *REQUIREMENT*

*§201.6(c)(3)(i):*

[The hazard mitigation strategy shall include: a] description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.

## 5.2 Mitigation Goals

The following section provides an overview of the City of Redlands 3 overall Mitigation Goals.

### **1. Goal No. 1 - Earthquakes**

To reduce both the short and long term effects of earthquakes on the City of Redlands.

### **2. Goal No. 2 - Floods**

To reduce both the short and long term effects of the 100-year flood plain as defined in the Flood Insurance Rate Map (FIRM) and the City of Redlands General Plan.

### **3. Goal No. 3 – Fire**

To mitigate or reduce the risk of fires in the City of Redlands designated urban wildland interface high fire hazard area.

### 5.3 Mitigation Actions/Projects

<i>REQUIREMENT</i> <i>§201.6(c)(3)(ii):</i>	[The mitigation strategy shall include a] section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard with particular emphasis on new and existing buildings and infrastructure.
--	---

### 5.3 Mitigation Actions/Projects

This section serves to identify proposed projects in the community. In all cases, Projects are listed in order of priority.

#### **A. FIRE MITIGATION ACTIONS/PROJECTS**

##### **Fire Mitigation No. 1: CA-2003-024 Redlands U-WIN**

This Fire Department project is a proposed trails enhancement/disaster resistant landscaping project within the City of Redlands Urban Wildland Interface Network (UWIN).

The two-fold project enhances existing trails systems within the high fire hazard urban wildland interface network by creating defensible space, and enhancing recreational use.

In addition, the program reestablishes the existing Fire Safe 2000 Fuel Modification Program, providing incentives to residents within the UWIN with defensible space landscaping for existing homes. The figures reflected below are facilitated by this project currently being reviewed for approval by FEMA.

- Status: Proposed
- Completion Date: 1/1/2007
- Local Priority: High
- Longitude/Latitude: -117.166626/34.016094
- Hazards Mitigated: Wildfires: 75%
- Total Cost: \$391,950
- Calculated BC Ratio: 11.48106
- Total Project Cost Estimate: \$135118 - Based on FEMA BC software methodology.
- Funding Description: Based on FEMA summary as part of E-grant submittal.

**Fire Mitigation No. 2:**

**Enhance Local Ordinances**

The City of Redlands Fire Department, working with the Community Development department, proposes to expand existing local Ordinances to mitigate wildfires in the urban wildland interface high fire hazard areas on a site-specific basis, for all new construction.

Currently the City has adopted the Uniform Fire Code, which includes Amendments to Article 8601, requiring a Fire Protection Plan to be done on all new subdivisions within the identified high fire hazard area. The Fire projection Plan addresses concerns related to building construction standards, roof coverings, defensible space requirements, fire department access, and water supply. In addition, any alterations or additions to existing structures of 50% or greater, require the installation of residential fire sprinklers. Any re-roof of 50% of the surface area of any existing structure in the hazardous fire area must also meet the Class A roofing requirements per the local Building Code.

We now propose a site-specific Fire Protection and mitigation plan, including defensible distances of 100 to 200 feet, instead of the current 30-foot requirements. It was noted during the recent Old Fire, which occurred in San Bernardino County during October 2003, that houses with as much as 50 foot clearance radiance burned, while houses with 100 foot clearance did not. Our proposal will also include a plan review of all housing projects, limiting street trees and ornamental vegetation to certain fire mitigation species of trees within this high fire hazard urban wildland interface area.

- Status: Proposed
- Completion Date: 7/1/2006
- Longitude/Latitude: -117.166626/34.016094
- Local Priority: Medium
- Funding Description: This Ordinance revision would be part of the normal Planning process to be Submitted to City Council for review And approval, as are all Ordinance Text Amendments. Following Public Hearing and if approved, it would become part of the Development requirements for the Fire Department.

**Fire Mitigation No.3:**

**Improve Response Time to Fire Emergencies Within the Urban Wildland Interface High Fire Hazard Area**

In order to mitigate the impact of fires within the city’s high fire hazard areas, the City of Redlands Fire Department desires to meet the 4-minute response time to these areas, as called out in the City’s General Plan.

The City of Redlands proposes to include within the Fire Department Master Plan, potential locations where future fire stations should be located in order to meet the required response time. This would require identifying any large housing tracts with limited fire protection services, establishing a projected

threshold of service, and including within the plan review of housing projects the limiting of street trees and ornamental vegetation to certain fire mitigation species of trees.

Additionally, there will be a need to develop a plan to address the water concerns for future development in the canyon areas of Redlands, the purchase of a Type III Engine water tender with 1250 gallon capacity to serve this area, and installing retrofitted adapters and appliances on water or Public Works trucks to support water shuttle capabilities to fires when they occur in this area.

- Status: Proposed
- Completion Date: 7/1/2006
- Longitude/Latitude: -117.166626/34.016094
- Local Priority: Medium
- Funding Description: No funding currently available. Potential for funding within Development Requirements.

## **B. EARTHQUAKE ACTION/MITIGATION PROJECTS**

### **Earthquake Mitigation No. 1:                      Civic Center Seismic Retrofit**

This public works program provides for the seismic retrofit of the City of Redlands Civic Center, including a complete retrofit of the underground parking structure and related infrastructure, and will rely on best management practices for earthquake mitigation measures.

- Status: PDM Grant Application being submitted 2/25/2005.
- Completion Date: 6/1/2009
- Local Priority: High
- Longitude/Latitude: -117.166626/34.016094
- Total Cost: \$4 Million
- Funding Description: PDM Grant. All other funding for this project supported by the City of Redlands General Fund.

### **Earthquake Mitigation No. 2:                      Mobile Home Parks Retrofit Program**

This Public Works project proposes an assessment of all mobile home parks and facilities within the City of Redlands, identifying their vulnerability to earthquakes, and leading to recommendations for appropriate earthquake mitigation projects. This assessment will produce a local registry of these facilities by name. Once this is accomplished, recommendations could be made for a seismic retrofit program to mitigate against slippage of mobile homes following a seismic event. Initial strategies may include, conducting a more gradual assessment of these mobile home parks, and enforce current State law related to earthquake retrofit, on a Park-by-Park basis, as staff time permits.

- Status: Proposed
- Completion Date: 6/6/2008
- Local Priority: Medium
- Longitude/Latitude: -117.166626/34.016094
- Total Cost: 20000 Estimated personnel and logistical costs.
- Funding Description: All funding for this project supported by the City of Redlands General Fund.

**Earthquake Mitigation No.3: Residential Care Facilities Retrofit**

This Public Works project proposes an assessment of all residential care facilities within the City of Redlands to identifying their vulnerability to earthquakes, and leading to recommendations for appropriate earthquake mitigation projects. This assessment will produce a local registry of all residential care facilities, by name and assess their vulnerability. Disaster Preparedness Training for these facilities, conducted by the Fire Department, would be an essential segment of the program.

- Status: Proposed
- Completion Date: 6/6/2008
- Local Priority: Medium
- Longitude/Latitude: -117.166626/34.016094
- Total Cost: \$20000 (Estimated personnel and Logistical costs.
- Funding Description: All funding for this project supported by The City of Redlands General Fund.

**B. FLOOD ACTION/MITIGATION PROJECTS**

The Committee is scheduled to meet within the next 45 days, and we plan to more clearly prioritize the flood mitigation proposals. However, the single most important project is Flood Mitigation Item #2, the Crafton Detention Basin. Please note reference to Flood Mitigation Plan hyperlink on page 19.

**Flood Mitigation No. 1: NFIP/CRS**

Attain Community Rating Status (CRS) in support of the City's participation in The National Flood Insurance Program.

- Status: On-Going
- Completion Date: Upon Approval
- Local Priority: High
- Longitude/Latitude: -117.166626/34.016094
- Total Cost: Zero Cost

**Flood Mitigation No. 2: Crafton Detention Basin**

Public works department project proposes a land acquisition of a 38-acre parcel located on the north side of Colton Avenue between Walnut and Opal

Streets and construction of a detention basin to provide protection in the 100-year flood zone.

- Status: Proposed
- Completion Date: N/A
- Local Priority: High
- Longitude/Latitude: -117.166626/34.016094
- Total Cost: \$25 Million
- Funding Description: County Flood Control Zone 3 Funding

**Flood Mitigation No. 3: Regional Drain System**

This public works department project proposes to construct an adequate sized storm regional drain system, approximately 7,500 feet in length in the reserve storm drain easement area parallel to an north of Redlands Boulevard through downtown Redlands to handle a minimum of a 100-year storm. Said storm drain system shall include all appurtenant structures to mitigate street and local flooding.

- Status: Proposed
- Completion Date: N/A
- Local Priority: High
- Longitude/Latitude: -117.166626/34.016094
- Total Cost: \$1.5 Million
- Funding Description: County Flood Control Zone 3 Funding  
Development Impact Fees

**Flood Mitigation No. 4: All-Weather Bridge**

This public works department project proposes to construct a new all-weather crossing (bridge) on Alabama Street at the Santa Ana River.

- Status: Under Construction
- Completion Date: June 2006
- Local Priority: High
- Longitude/Latitude:
- Total Cost: \$6.5 Million
- Funding Description: Federal Highway Administration Funds.  
HBRR Funds  
State Title 9 Funds  
HUD Economic Development Incentive

**Flood Mitigation No. 5: All-Weather Bridge**

This public works department project proposes to construct a new all-weather crossing (bridge) on Orange Street at the Santa Ana River.

- Status: Under Construction
- Completion Date: June 2006
- Local Priority: High

- Longitude/Latitude:
- Total Cost: \$5.7 Million
- Funding Description: Federal Highway Administration Funds.  
HBRR Funds  
State Title 9 Funds  
HUD Economic Development Incentive

**Flood Mitigation No. 6:                      City Creek at Alabama Street**

This public works department project proposes to provide multi-jurisdictional support to the cities of San Bernardino and Highland, and to the County San Bernardino to design and construct an all-weather crossing (bridge) on Alabama Street at the City Creek.

- Status: Proposed
- Completion Date: N/A
- Local Priority: High
- Longitude/Latitude:
- Total Cost: \$12 Million
- Funding Description: Federal Highway Administration Funds.  
HBRR Funds  
Other significant financial support systems.

**Flood Mitigation No. 7:                      Storm Drain Construction Project**

This public works department project proposes to construct an adequate sized storm drain system, approximately 3,000 feet in length in Church Street between Pennsylvania Avenue and the Santa Ana River, to handle a minimum of a 50-year storm. Said storm drain system shall include all appurtenant structures to mitigate street and local flooding.

- Status: Proposed
- Completion Date: N/A
- Local Priority: Med
- Longitude/Latitude:
- Total Cost: \$3 Million
- Funding Description: No Local Funding Source Available.

**Flood Mitigation No. 8:                      Storm Drain Construction Project**

This public works department project proposes to construct an adequate sized storm drain system, approximately 7,000 feet in length in Judson Street between Brockton Avenue and the Santa Ana River, to handle a minimum of a 50-year storm. Said storm drain system shall include all appurtenant structures to mitigate street and local flooding.

- Status: Proposed
- Completion Date: N/A
- Local Priority: Med

- Longitude/Latitude:
- Total Cost: \$3 Million
- Funding Description: No Local Funding Source Available.

**Flood Mitigation No. 9: Storm Drain Construction Project**

This public works department project proposes to construct an adequate sized storm regional drain system, approximately 11,000 feet in length in Lugonia Avenue between Alabama Street and the Mission Channel, to handle a minimum of a 50-year storm. Said storm drain system shall include all appurtenant structures to mitigate street and local flooding.

- Status: Proposed
- Completion Date: N/A
- Local Priority: Med
- Longitude/Latitude:
- Total Cost: \$4.3 Million
- Funding Description: No Local Funding Source Available.

**Flood Mitigation No. 10: Public Education**

This Fire department project continues multihazard public education programs through the Pre-disaster Mitigation Grant received from FEMA.

- Status: Ongoing
- Completion Date: 6/1/2006
- Local Priority: Medium
- Longitude/Latitude: -117.166626/34.016094
- Total Cost: \$30,000
- Funding Description: FEMA Funds.

**Flood Mitigation No. 11: All-Weather Crossing Bridge**

This public works department project proposes to construct a new all-weather crossing (bridge) on Orange Street at the Santa Ana River.

- Status: Proposed
- Completion Date: N/A
- Local Priority: Medium
- Longitude/Latitude:
- Total Cost: \$4.5 Million
- Funding Description: US Army Corps of Engineers, No Local Funding source available.

**Flood Mitigation No. 12: San Timoteo Canyon**

This public works department project proposes to construct infrastructure improvements, including but not limited to, shoulder widening, ditches,

culverts and berms along the entire length of roadway within City of Redlands City Limits to mitigate impacts of floodwater over San Timoteo Canyon Road.

- Status: Proposed
- Completion Date: N/A
- Local Priority: High
- Longitude/Latitude: -117.1051.362350/34.042.488336
- Total Cost: \$2.5 Million
- Funding Description: Federal Highway Administration Funds

#### **D. MITIGATION ACTION/PROJECTS OF THE REDLANDS UNIFIED SCHOOL DISTRICT**

As a Multi-Jurisdictional Partner of the City of Redlands Local Hazard Mitigation Committee, the Redlands Unified School District has a broad spectrum of on-going and proposed mitigation action/projects for all facilities within the School District. Their goals and projects were developed for mitigation of fires, flood and earthquake disasters. The following document hyperlinked below, identifies in detail all proposed mitigation measures for the City of Redlands Unified School District, and the methodology of each, including funding source.

- *Associated Files*  
File Title: [RUSD Mitigation Spreadsheet](#)  
File Description: This file lists all proposed mitigation measures for the Redlands Unified School District.  
Uploaded: 7/27/2004

#### **E. UNIVERSITY OF REDLANDS MITIGATION/ACTION PROJECTS**

As a Multi-Jurisdictional Partner of the City of Redlands Local Hazard Mitigation Committee, the University of Redlands has a broad spectrum of on-going and proposed mitigation action/projects for all facilities that comprise their campus. Population of this facility is estimated at approximately 3000 per day. The University has developed goals and projects for mitigation of fires, flood and earthquake disasters. The following document hyperlinked below, identifies in detail all proposed mitigation measures for the University of Redlands, located in the City of Redlands, and the methodology for each, including funding source.

- *Associated Files*  
File Title: [Mitigation Plan Documents - UR](#)  
File Description: This document details mitigation measures proposed by the University of Redlands to mitigate the impact of fire, flood and earthquake disasters.  
Uploaded: 7/27/2004

## 5.4 Implementation Strategy and Analysis of Mitigation Projects

<i>REQUIREMENT</i> <i>§201.6(c)(3)(iii):</i>	[The mitigation strategy section shall include] an action plan describing how the actions identified in section (c)(3)(ii) will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.
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## 5.4 Implementation Strategy and Analysis of Mitigation Projects

This section serves to identify the Proposed Projects in the community.

The prioritization of all the mitigation projects was accomplished through meetings with the Local Hazard Mitigation Planning Committee based on findings and recommendations from Department Head staff level of the City of Redlands, the San Bernardino County Flood Control District, and the Planning Department level staff, and representatives of the San Bernardino County Fire Office of Emergency Services, Redlands Unified School District, and the University of Redlands.

The mitigation action/projects were prioritized based on the following:

- Availability of Grant Funding
- Projected Development Impact Fees
- General Fund Resources
- Any potential future legislation.

### 5.5 Multi-Jurisdictional Mitigation Strategy

*REQUIREMENT*  
*§201.6(c)(3)(iv):*

For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

### 5.5 Multi-Jurisdictional Mitigation Strategy

*Not Applicable*

## Section 6 – Plan Maintenance

### 6.1 Monitoring, Evaluating and Updating the Plan

<i>REQUIREMENT</i> §201.6(c)(4)(i):	[The plan maintenance process shall include a section describing the] method and schedule of monitoring, evaluating and updating the mitigation plan within a five-year cycle.
--	--

### 6.1 Monitoring, Evaluating and Updating the Plan

Plan Last Updated On: 02.18.2005.

#### Description of Plan Maintenance Procedures:

- A. The Local Hazard Mitigation Planning Team will meet on a quarterly basis to monitor and review plan implementation.
- B. City Council will review the plan on an Annual basis.
- C. Changes and updates will be entered into the Local Hazard Mitigation Plan as they occur.
- D. Every 2 years the planning team will meet to revise and update the overall plan.
- E. With updates completed, the plan will be reviewed and submitted per FEMA requirements to FEMA, every 5 years.

#### Associated Files

File Title: [Hazard Mitigation Plan Timeline](#)

File Description: This is a timeline for the meeting and planning sessions for the San Bernardino County Fire OES Pre-Disaster Mitigation Grant and Hazard Mitigation Plan Committee in which the City of Redlands is an active participant.

Uploaded: 8/4/2004

File Title: [Implementation Documents](#)

File Description: This is a listing of reference documents, regulations, ordinances and programs already in existence that support and provide mechanisms for the implementation of this plan.

Uploaded: 8/9/2004

## 6.2 Implementation through Existing Programs

*REQUIREMENT*  
*§201.6(c)(4)(ii):*

[The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans when appropriate.

## 6.2 Implementation through Existing Programs

In September of 2003 the City of Redlands Disaster Council, along with a group of very dedicated community volunteers, formulated the Disaster Council/Local Mitigation Plan Committee. The Committee has identified the hazards and risks, assessed our local vulnerability, and developed a list of potential future hazard mitigation activities to continue Redlands' tradition as a disaster-resistant community. The City is also involved in San Bernardino County's Multi-Jurisdictional Plan. Redlands Unified School District and the University of Redlands are integrated partners of the City's Local Plan.

The Disaster Council/Local Mitigation Plan Committee has met bi-monthly to address and meet the requirements associated with producing a Draft Local Mitigation Plan that will be submitted to the State Governor's Office of Emergency Services (OES) on July 29, 2004. Following any modifications, the City will forward the final draft plan to the Department of Homeland Security/FEMA for final comment on or about August 20, 2004. Staff anticipates receiving the final draft plan approval back from FEMA within a 45-day time period, as prescribed by legislation.

In recognition of the commitment by these community volunteers, it is important to note that the City of Redlands is the only community in San Bernardino County that has met for this extended period of time, with this level of dedication, to produce a timely product. Most communities and other agencies have just recently conducted their first meeting.

All of the Disaster Council/Local Mitigation Plan Committee meetings have been open to the public. Attendees have varied to as many as 40 participants at one meeting. The process requires that two public comment hearings be conducted prior to adoption of the Plan. One public comment period is required to accept input to affirm the identified risks. The Committee has identified flooding, wildfires and earthquakes as the three natural hazards that could most affect the City of Redlands. A second public comment period will be held to adopt the Local Mitigation Plan. Staff anticipates presenting the FEMA- approved Local Plan for Council adoption on October 12, 2004.

All of the mitigation measures proposed within this document follow the guidelines set forth in the City of Redlands Municipal Code and General Plan. See attached document for a list of supporting mechanisms.

### 6.3 Continued Public Involvement

<i>REQUIREMENT</i> <i>§201.6(c)(4)(iii):</i>	[The plan maintenance process shall include a] discussion on how the community will continue public participation in the plan maintenance process.
---	--

### 6.3 Continued Public Involvement

Public Involvement will include the following:

- The Citizens Committee will continue to meet on a bi-annual basis to evaluate, discuss, and potentially implement, new recommendations as they arise related to the mitigation of local hazards. The City of Redlands is dedicated to involving the public directly in the continual review and update of the Plan.
- There will be continued meetings at the San Bernardino County Office of Emergency Services regarding the Hazard Mitigation Plan. The purpose of these meeting is to continue collaborative efforts amongst the cities to develop those programs that address hazard mitigation issues which are multi-jurisdictional in nature.

## **APPENDIX A**

### **List of Hyperlinked Only Documents**

1. Title 19 of the California Government Code, reference page 18.
2. City of Redlands Flood Hazard Mitigation Plan, referenced page 19.
3. General Plan of the City of Redlands, referenced page 102.
4. California Environmental Quality Act, referenced page 102.
5. Hazard Mitigation Plan for the State of California, referenced page 102.
6. City of Redlands Adopted Budget, July 1, 2004, referenced page 102.
7. Hazard Mitigation Plan for the Southern California Edison Company, referenced page 102.
8. Mitigation Measures for the Redlands Unified School District, referenced page 118.
9. Hazard Mitigation Plan for the University of Redlands, referenced page 118.

## APPENDIX B

### List of Attachments

The documents listed below are attached and provided in hyperlinked format:

<u>Title</u>	<u>Noted on Page</u>
1. Capability Assessment Listing	18
2. City of Redlands Memorandum, dated 5/25/2004 Subject: Presentation of 2004 Disaster Resistant California Community Award	19
3. City of Redlands, California Statistics and Demographics, US Census 2000	19
4. Flyer announcing October 22, 2003 Town Hall Meeting	51
5. Transmittal Letter for Natural Hazards Preparedness Questionnaire	51
6. Natural Hazards Preparedness Questionnaire	51
7. Press Release – “Planning for a Sustainable Community”	51
8. Natural Hazards Mitigation Town Hall Meeting Agenda October 22, 2004, 7 P.M.	51
9. Agenda, followed by Minutes for the Joint Meeting of The City of Redlands Disaster Council and Local Mitigation Plan Citizens Committee, January 15, 2004.	52
10. Agenda, followed by Minutes for the Joint Meeting of The City of Redlands Disaster Council and Local Mitigation Plan Citizens Committee, February 19, 2004.	52
11. Agenda, followed by Minutes for the Joint Meeting of The City of Redlands Disaster Council and Local Mitigation Plan Citizens Committee, March 10, 2004.	52
12. Agenda, followed by Minutes for the Joint Meeting of The City of Redlands Disaster Council and Local Mitigation Plan Citizens Committee, April 5, 2004.	53
13. City of Redlands Resolution No. 6275, Declaring Week of May 2, 2004, as Disaster Resistance Week	53
14. Agenda, followed by Minutes for the Joint Meeting of The City of Redlands Disaster Council and Local Mitigation Plan Citizens Committee, May 12, 2004.	53

15.	Agenda, followed by Minutes for the Joint Meeting of The City of Redlands Disaster Council and Local Mitigation Plan Citizens Committee, June 3, 2004.	54
16.	Attachments for June 3, 2004 meeting:	
	a. Building Safety Journal Article, Mar-April 2004 Issue, entitled, "Observations from the 2003 Southern California Wildland Fires".	54
	b. Building Safety Journal Article, Mar-April 2004 Issue, entitled, "Disaster Mitigation act of 2000 and Natural Hazard Mitigation".	54
	c. Building Safety Journal Article, Mar-April 2004 Issue, entitled, "Standards: The Foundation for a Global Response to Building Security".	54
	d. Building Safety Journal Article, Mar-April 2004 Issue, entitled, "Observations Following the San Simeon Earthquake".	54,61
17.	Agenda, followed by Minutes for the Joint Meeting of The City of Redlands Disaster Council and Local Mitigation Plan Citizens Committee, June 21, 2004.	54
18.	Minutes of the Redlands Unified School District Local Mitigation Plan Citizen Committee Meeting of June 23, 2004.	55
19.	Minutes of the East Valley Water District Disaster Mitigation Plan Committee, June 26, 2004.	55
20.	Agenda, followed by Minutes of the Rim of the World Unified School District Local Mitigation Plan Agencies and Citizens Committee Meeting of Thursday, July 15, 2004.	56
21.	City of Redlands Request for Council Action presented at the 7/20/04 City Council Meeting, Subject: Introduction of the Disaster Mitigation Act of 2000 (DMA 2000) and Request for Public Comment on Selected Natural Hazards.	56
22.	Meeting Summary for the June 30, 2004 Meeting of the Hazard Mitigation Plan OA Sub-Committee Planning Meeting.	58
23.	Fire Frequency and Land Condition Map, produced by Prescribed Fire and Fire Effects Research Work Unit, November 1999.	65
24.	OES State of California Wildland Fire Threat Categories, Showing Redlands Urban Wildland Interface Network.	65
25.	Sun Newspaper article, entitled, "It Takes a Team to Fight a Fire, September 1999.	65

26.	Press Enterprise Newspaper article, entitled, "Anti-Fire Measures Credited With Saving Redlands Homes", dated July 22, 2001.	65
27.	Sun Newspaper article, entitled, "Redlands Fire Rages, Retreats", dated September 10, 1996.	65
28.	City of Redlands Wildland Fire History Map, OES, 2002.	65
29.	Property Values Listing produced by Davis & Graeber for the City of Redlands, 2003.	82
30.	Property Values Listing for the Redlands Unified School District	82
31.	Critical Facilities Listing of the Redlands Unified School District, including values and estimated loss due to hazards, 2004.	83
32.	Critical Facilities Listing for the University of Redlands, including values and estimated loss due to Flood hazards, 2004.	83
33.	Critical Facilities Listing for the University of Redlands, including values and estimated loss due to Earthquake hazards, 2004.	83
34.	Mitigation Project Template, Redlands Unified School District, 2004.	118
35.	Mitigation Project Template, University of Redlands, 2004.	118