

2010 Local Hazard Mitigation Plan Annex

Table of Contents

Introduction	3
The Regional Planning Process.....	3
The Local Planning Process	3
<i>Process for Updating Plan Section</i>	4
<i>Review of Existing Reports, Studies, and Plans</i>	5
<i>Public Input Opportunities</i>	5
Hazards Assessment	5
Past Occurrences of Disasters (natural and human-induced)	6
Risk Assessment	8
<i>Urban Land Exposure</i>	8
<i>Infrastructure Exposure</i>	9
<i>Exposure of City-Owned Buildings, Plus Critical Healthcare Facilities and Schools</i>	10
<i>Repetitive Loss Properties</i>	12
<i>Other risks</i>	12
National Flood Insurance Program	15
Mitigation Goals.....	17
Mitigation Activities and Priorities.....	17
<i>Evaluation of Progress from 2005 Plan</i>	17
<i>Future Mitigation Actions and Priorities</i>	18
<i>On-Going Mitigation Strategy Programs</i>	20
Incorporation into Existing Planning Mechanisms	35
Plan Update Process.....	35



Mitigation Point of Contact	36
Exhibit A - Jurisdictional Boundaries	38
Exhibit B - Earthquake Faults	40
Exhibit C - Public Review Announcement	41
Exhibit D- Web-Page Posting.....	42
Exhibit E - Documentation.....	43



Introduction

Livermore is situated in the Livermore Valley in the easternmost portion of Alameda County and is part of the nine-county Bay Area region. The Livermore Valley is edged to the north, south and east by rolling hills and to the west by the Cities of Dublin and Pleasanton. Livermore is bisected by Interstate 580 (I-580) which runs east-west through Alameda County. Livermore consists of a total area of approximately 24 square miles with a population of 83,604. In 1980, Livermore experienced two earthquakes along the Greenville Fault of 5.7 Magnitude and 5.8 Magnitude. The City of Livermore, with 425 employees and an annual general fund operating budget of \$84,674,070, currently owns and occupies approximately 1,300,000 square feet of office/work space. Livermore operates a municipal airport with over 200,000 annual aircraft operations and operates a golf course.

Besides its city limits and Planning Area, every city in California has a Sphere of Influence (SOI), which is the term used for the area outside of the city limits which the city expects to annex in future years. Livermore's Sphere of Influence (SOI) lies within the Planning Area and is coterminous with the City limits on the west and northwest edges of the City and extends approximately one mile beyond the City limits to the northeast, east and south. A map of the City's jurisdictional boundary is provided in Exhibit A.

The Regional Planning Process

The City of Livermore participated in ABAGs workshops in 2005 which developed the original Regional Plan. The Livermore City Council formally adopted the plan in 2005.

In preparation for the five year update, City staff attended two ABAG City/County workshops to review the strategies matrix developed by ABAG staff and consultants, and to develop regional priorities for mitigation. The City provided input to the regional process from the perspective of the City and helped determine what regional mitigation priorities were important for Livermore.

For more information on these meetings and for rosters of attendees, please see Appendix A and H in the ABAG Multi-Jurisdictional Local Hazard Mitigation Plan 2010 (MJ-LHMP).

The Local Planning Process

The City of Livermore directed the Livermore-Pleasanton Fire Department (LPPFD) to serve as the lead in updating the City of Livermore's 2010 Local Hazard Mitigation Plan.

Genevieve Pastor-Cohen, LPFD's Emergency Preparedness Manager, was assigned as lead staff for the 2010 Update. Ms. Pastor-Cohen reviewed the initial information from ABAG and FEMA, identified key issues in the 2010 Strategies Matrix, and coordinated the review by other departments of the Strategies Matrix. The City's planning team consisted of

- Stephan Kiefer, Chief Building Official. Provided input on City buildings, building code issues, and policies regarding reconstruction of residences and commercial buildings.
- Darren Greenwood, Assistant Public Works/Water Resources Director, provided input on City roads, public infrastructure, and other facilities impacted by hazards; reviewed and commented on the 2010 Strategies Matrix.
- Rhonda Bishop, Livermore Police Department, provided response procedures for a natural disaster.
- Tom Grappone, Fire Prevention Assistant Fire Marshal, provided input relating to fire prevention and hazardous materials issues.

A kick-off meeting and three monthly meetings ensued to review the proposed Strategy Matrix and receive comments and rankings on the suitability of the strategies and policies for Livermore. The meetings identified mitigation strategies, prioritized said strategies, and reviewed preliminary budgets and potential funding sources for strategies designated as "High" priority for City-owned-and-operated facilities.

Agendas, minutes, and sign-in sheets were prepared to record the planning activities. Minutes are contained in Exhibit E.

Process for Updating Plan Section

A key element in the above process was to review the 2005 plan. This was done comprehensively as part of the City's review of the 2010 materials, with material updated as needed to reflect the minor changes to City policies and programs that had occurred since 2005. The updates also incorporated new ABAG data on hazards susceptibility and the 2010 planning process. The City included any additional occurrences of natural hazards since the last plan and updated risk assessment with new data from ABAG.

Review of Existing Reports, Studies, and Plans

The following documents were reviewed and incorporated into this annex in addition to those documents referenced in Appendix A of the regional plan.

Existing plans, studies, reports, and technical information	Method of incorporation into the jurisdiction annex
Livermore General Plan, Public Safety Element	<i>Hazards Assessment</i>
<i>Livermore Comprehensive Emergency Management Plan</i>	<i>Priority mitigation actions</i>
Livermore-Pleasanton Fire Department’s Hazards Materials Plan	<i>Other Risks</i>

Public Input Opportunities

Opportunity for public comments on the draft mitigation strategies was provided via the City’s website during the month of July 2011. In addition, the plan was made available at the LPFD Fire Administration Building to provide comment through August 5, 2011. These opportunities to review and comment were advertised in the Valley Times. Also, the City of Livermore’s Disaster Council partners and citizens who completed the LPFD Community Emergency Response Team were extended the opportunity to review the plan. A copy of the web-page posting is included as **Exhibit D** to the City of Livermore 2010 Annex.

Public comments included clarification of weight volumes, arranging future and on-going mitigation actions by priority, and clarifying details contained in the National Flood Insurance Program.

The City Council will adopt the plan in a public meeting via an official Resolution upon approval by FEMA. The mitigation strategies will become an implementation appendix of the Public Safety Element of the City of Livermore’s General Plan.

Hazards Assessment

The ABAG Multi-Jurisdictional Local Hazard Mitigation Plan, to which this is an annex, lists nine hazards that impact the Bay Area, five related to earthquakes (faulting, shaking, earthquake-induced landslides, liquefaction, and tsunamis) and four related to weather (flooding, landslides, wildfires, and drought). Maps of these hazards and risks are shown on the ABAG website at <http://quake.abag.ca.gov/mitigation/>.

The City of Livermore has reviewed the hazards identified and ranked the hazards based on past disasters and expected future impacts. The conclusion is that earthquakes (particularly faulting and shaking) pose a significant risk. Other hazards that may occur are flooding (including dam failure), wildfire, landslides (including unstable earth), and drought. Hazards least likely to occur are freezing and tsunamis.

The City of Livermore has not faced any natural disasters not listed in the ABAG multi-jurisdictional plan and no new hazards have been identified by the City of Livermore since the original development of this plan in 2005.

While the City of Livermore has undertaken a number of general hazard mapping activities since the first Safety Element was prepared by the City of Livermore all of these maps are less detailed and are not as current as those shown on the ABAG website at <http://quake.abag.ca.gov/mitigation/>.

Past Occurrences of Disasters (natural and human-induced)

Disasters in Livermore's past have been limited. In January 1980, a 5.6 magnitude earthquake occurred in Livermore with subsequent aftershocks above 5.0. This event generated over \$10 million in damage consisting of approximately \$1.5 million within the City of Livermore and \$10 million at the Lawrence Livermore National Laboratory. Within the city, damages included mobile homes being jolted from foundations and sewage plant line damage. Sandia Labs' 174,000-gallon reserve fuel tank foundation bolts were sheered. With regards to Livermore's seismicity, the City's General Plan's Public Safety Element states the following:

- The Greenville Fault, an active fault that is the easternmost strand of the San Andreas Fault system in the San Francisco Bay region, is located approximately four miles to the east of the Downtown, and crosses the eastern part of the Planning Area, as shown in Exhibit B. Each of the three segments of the Greenville fault is considered capable of generating earthquakes in the range of Richter magnitude 6.6 to 6.9. If all segments were to rupture in a single seismic event, a 7.2 magnitude earthquake would be expected. The United States Geologic Survey (USGS) estimates a six percent probability of a 6.7 magnitude or greater earthquake on the Greenville fault during the period 2000 to 2030.
- The Las Positas Fault, which is considered to be active, trends northeast to southwest approximately 2.5 miles to the southeast of the Downtown, and is located almost completely within the Planning Area. The Las Positas fault could potentially generate an earthquake of Richter magnitude 6.3. The probability of an earthquake on the fault has not been determined.



In addition, several other major active faults are located in the vicinity of Livermore, including the Calaveras and Hayward faults. Because of the high level of seismic activity in and around Livermore, the area has been classified in seismic design categories of D, E, F (F being the highest risk category) by the California Building Code.

In addition to these faults, the Livermore fault is also located within the urbanized Planning Area. The Livermore fault is considered to be potentially active. It is approximately five miles in length and is considered capable of generating an earthquake with magnitude of 6.2.

Locally significant incidents that have also impacted the City of Livermore in the last several years include:

- Weather, Summer Heat. During weather extremes the City and Alameda County monitors the situation.

Risk Assessment

Urban Land Exposure

The City of Livermore examined its hazard exposure of urban land based on information in ABAG’s website at <http://quake.abag.ca.gov/mitigation/pickdbh2.html>. The “2005 Existing Land Use with 2009 Mapping” file was used for this evaluation (in the existing plan, the file used was “Existing Land Use in 2000”).

In general, the hazard exposure of the City of Livermore is increasing over time as the amount of urban land increases (In the last 5 years, 2,017 acres of land has become urban). The City of Livermore actually reduced the acres of urban land in the 100 year flood zone over the last 5 years [due to changes in the new FEMA flood maps](#). The following table described the exposure of urban land within the City limits to the various hazards.

Exposure (acres of urban land)			
Hazard	2005	2010	Change
<i>Total Acres of Urban Land</i>	<i>10,358</i>	<i>12,375</i>	<i>2,017</i>
Earthquake Faulting (within CGS zone)	12	93	81
Earthquake Shaking (within highest two shaking categories)	0	0	0
Earthquake-Induced Landslides (within CGS study zone)	0	27	27
Liquefaction (within moderate, high, or very high liquefaction susceptibility)	7,652	8,795	1,143
Flooding (within 100 year floodplain)	675	508	(167)
Flooding (within 500 year floodplain)	650	1,027	377
Landslides (within areas of existing landslides)	3	13	10
Wildfire (subject to high, very high, or extreme wildfire threat)	247	321	74
Wildland-Urban Interface Fire Threat	5,704	6,791	1,087
Dam Inundation (within inundation zone)	1,722	2,316	594
Tsunamis (within inundation area)	not applicable		
Drought	N/A	N/A	-

Infrastructure Exposure

The City of Livermore also examined the hazard exposure of infrastructure within the jurisdiction based on the information on ABAG’s website at <http://quake.abag.ca.gov/mitigation/pickdbh2.html>. Of the 391 miles of roadway in the City of Livermore, the following are exposed to the various hazards analyzed.

Exposure (miles of infrastructure)						
Hazard	Roadway		Transit		Rail	
	2005	2010	2005	2010	2005	2010
<i>Total Miles of Infrastructure</i>	348	391	0	6	12	12
Earthquake Shaking (within highest two shaking categories)	0	0	0	0	0	0
Liquefaction Susceptibility (within moderate, high, or very high liquefaction susceptibility)	348	391	0	4	0	7
Liquefaction Hazard (within CGS study zone)	0	218	0	4	0	5
Earthquake-Induced Landslides (within CGS study zone)	0	1	0	0	0	0
Earthquake Faulting (within CGS zone)	4	4	0	0	0	0
Flooding (within 100 year floodplain)	20	4	0	0	1	0
Flooding (within 500 year floodplain)	16	22	0	2	1	4
Landslides (within areas of existing landslides)	1	1	0	0	0	0
Wildfires (subject to high, very high, or extreme wildfire threat)	11	9	0	0		0
Wildland-Urban Interface Fire Threat	199	221	0	2	4	3
Dam Inundation (within inundation zone)	50	53	0	3	7	7
Tsunamis	not applicable					
Drought	not applicable					

Exposure of City-Owned Buildings, Plus Critical Healthcare Facilities and Schools

Finally, the City examined the hazard exposure of critical health care facilities and schools located within the Livermore, and City-owned buildings based on the information on ABAG’s website at <http://quake.abag.ca.gov/mitigation/pickcrit.html>. The City of Livermore provided a list of the critical facilities it owns to ABAG. ABAG provided a detailed assessment of the hazard exposure of each of its facilities. The following number of facilities is exposed to the various hazards analyzed.

Exposure (number of facility types)								
Hazard	Hospitals		Schools		Locally owned bridges and interchanges		Locally owned critical facilities	
	2005	2010	2005	2010	2005	2010	2005	2010
<i>Total Number of Facilities</i>	<i>1</i>	<i>1</i>	<i>26</i>	<i>31</i>	<i>19</i>	<i>19</i>	<i>43</i>	<i>42</i>
Earthquake Shaking (within highest two shaking categories)	1	0	0	0	0	0	0	0
Liquefaction Susceptibility (within moderate, high, or very high liquefaction susceptibility)	0	1	19	23	16	18	36	35
Liquefaction Hazard (within CGS study zone)	0	1	0	17	0	16	0	35
Earthquake-Induced Landslides (within CGS study zone) ¹	0	0	0	0	0	0	0	0
Earthquake Faulting (within CGS zone)	0	0	0	0	2	0	0	0
Flooding (within 100 year floodplain)	0	0	1	0	1	0	1	1
Flooding (within 500 year floodplain)	0	1	1	1	7	4	12	12
Landslides (within areas of existing landslides)	0	0	0	0	0	0	0	0

¹ The California Geological Survey continues to map Alameda County and added the Livermore-Altamont area in late 2009. Though some areas of the County have not yet been completely mapped, the densely populated areas in Alameda County are mostly done.

Exposure (number of facility types)								
Hazard	Hospitals		Schools		Locally owned bridges and interchanges		Locally owned critical facilities	
	2005	2010	2005	2010	2005	2010	2005	2010
Wildfires (subject to high, very high, or extreme wildfire threat)	0	0	3	1	0	0	0	1
Wildland-Urban Interface Fire Threat	0	0	15	0 ²	11	9	22	21
Dam Inundation	0	0	3	2	5	4	1	1
Tsunamis (within inundation area)	-	-	-	-	-	-	-	-
Drought ³	-	-	-	-	-	-	-	-

² Based on the California Fire Code, the 16 schools initially identified by ABAG for 2010 in this category are not located in high fire hazard severity zones.

³ Drought will not affect locally owned facilities directly.

Repetitive Loss Properties

The City does not have any repetitive loss properties.

Other risks

Drought

The potential for drought in the City of Livermore exists, however the City has developed procedures to mitigate this hazard to a less than significant level. The City has developed a Water Shortage Contingency Plan to address emergency and long-term water shortage conditions. Also, the City has worked with its wholesale water supplier, the Zone 7 Water Agency, and the other Tri-Valley water retailers to develop a variety of water supply sources that can be used to meet the demands of the area. Based on the 2010 Urban Water Management Plan prepared by the City of Livermore with input from Zone 7, which compares water supplies and demands over a 20 year planning horizon, the City has a very reliable water system that can meet projected demands in normal, single dry years, and multiple dry years. A copy of the City's Water Shortage Contingency Plan is attached.

The city plans to continue to work with ABAG to improve the risk assessment information being compiled by ABAG, including developing ways to assess how many soft-story buildings are located in the unincorporated areas of the County.

The city plans to work with ABAG to develop specific information about the kind and level of damage to buildings, infrastructure, and critical facilities which might result from any of the hazards previously noted.

Aviation Hazards

The Livermore Municipal Airport affects land uses in the form of noise and safety impacts. The Airport Protection Area (APA) was established by the City in 1991 as an additional protection area beyond the minimum required by the FAA. The APA extends 5,000 feet beyond the runways to the north, south, and east, and 7,100 feet to the west (the typical take-off direction). The APA protects the Airport from the encroachment of incompatible uses, particularly the construction of new, or expansion of existing residential areas, considered necessary to enhance public safety. (Livermore General Plan's Public Safety Element, 2003-2025)

Hazards Materials

According to Livermore's All Hazard Vulnerability Analysis, Livermore's proximity to large U.S. Department of Energy facilities creates a unique risk to public safety by the transportation of quantities of various radioactive materials. In case of an accident, small amounts of radioactive materials can be dislodged from their protective containers and become extremely difficult to locate, necessitating evacuation of large areas.

In addition, the Livermore/Pleasanton area contains some industrial development that may be associated with hazardous materials uses. Land uses involving hazardous materials or other hazards include the airport, hazardous waste transfer facilities, paint and paint product manufacturing facilities, semiconductor manufacturers, medical device manufacturers, and petroleum product and natural gas pipelines.

The area is home to numerous businesses and industries that manufacture, store, use, and dispose of hazardous materials and hazardous waste. Some of these businesses are neighbors to urbanized population areas.

In addition to the hazards of stored chemicals, there are hazards of transporting chemicals into and through the area. Most hazardous materials are regularly carried on railroads and the freeways and major roads designated as explosive routes by CALTRANS and the Highway Patrol. The proximity of some of these routes to large numbers of people suggests that an accident involving hazardous materials transportation could reach disaster proportions. The extreme toxicity of some chemicals used in the area and the specialized handling and cleanup procedures required during an accident can close major thoroughfares and necessitate evacuation.

The Union Pacific/Southern Pacific Railroads conduct rail operations in the Livermore area. Cargoes of electronics, fabricated metals, plastics, precision machinery, agricultural chemicals, construction materials, rock/sand/gravel aggregates and other hazardous materials are also shipped over the rail lines.

A spill of bulk hazardous materials could result in fire, explosion, toxic cloud or direct contamination of people and property. The effects may involve a local site or many square miles. Health problems may be immediate, such as corrosive effects on skin and lungs, or may be eventual, such as the development of cancer from a carcinogen. Damage to property could range from immediate destruction by explosion to permanent contamination by a persistent hazardous substance.

The I-580 corridor affords a large amount of truck movement from the Bay Area to the Central Valley. At its eastern end, it connects to Interstate 5, the major north-south route through California, and at its west end, Interstate 80, the major east-west route through Northern California. The weigh station operated by the California Highway Patrol at Vasco Road reports that, on a month-by-month basis, an average of 25,000 trucks pass through that facility. Approximately 8% of those trucks, or 2,000 trucks per month, display hazardous materials placards. Assuming each vehicle had an average load weight of 35,000 pounds that would convert to approximately 35,000 tons of placarded material a month moving through the I-580 corridor.

The Livermore-Pleasanton Fire Department Hazardous Materials Area Plan contains additional specific details regarding Hazardous Materials Incident potential.

U.S. Department of Energy Facilities

There are two U. S. Department of Energy (DOE) Federally Funded Research and Development Centers operating in the Livermore area that were not discussed in ABAG's plan. They are:

The Lawrence Livermore National Laboratory (LLNL), located just east of Livermore surrounded by Vasco Road on the west, East Avenue on the south and Greenville Road on the east; and

The Sandia National Laboratories (SNL), located south of LLNL with its northern boundary as East Avenue, Vasco Road on the west, Greenville Road on the East and Tesla Road on the south.

As DOE National Laboratories, these facilities work in partnership with universities and industry to enhance the security, prosperity and well-being of the nation by providing scientific and engineering solutions to meet national needs in nuclear weapons and related defense systems, energy security and environmental integrity.

The primary function of the labs is to conduct scientific research. The majority of activities are directly related to specific research projects or to support the general laboratory infrastructure.

In addition to having the following potential hazards, the LLNL has been designated as a potential terrorism target.

The sites conduct significant research in the following fields:

- **Combustion Research:** Typical hazards include standard industrial and laboratory hazards including custom electrical equipment, lasers, fuels, compressed gases, and combustible materials. Other hazards include the handling of chemical, reactive, toxic, thermal and energetic materials. Chemical emissions are small and are related to small-scale chemical use in the laboratory.
- **Micro and Nano Technologies:** Typical hazards are associated with lasers, chemicals, microwave radiation, and organic and inorganic and toxic materials. Other hazards include standard industrial hazards such as high voltages, power and hand tools, and electronic test equipment.
- **Applied Biosciences Laboratory:** Routine hazards are associated with lasers, chemicals, microwave radiation, flames and furnaces, cryogenic materials, compressed gases, and organic, inorganic and toxic materials including toxins, toxin fragments, and bio-hazardous materials. Standard industrial hazards include high voltages, hot and cold surfaces, and test equipment.

- Weapons Research & Development: Typical hazards include standard industrial hazards including compressed gases, cryogenic materials and energetic materials. Other hazards include radioactive, toxic, thermal and energetic materials.
- Materials and Chemistry Research & Development: Routine hazards include lasers, chemicals, microwave radiation, flames and furnaces, compressed gases, cryogenic materials, extreme ultraviolet radiation, ionizing radiation from accelerators, and organic and inorganic and energetic materials. Other hazards include cutting, grinding and etching, as well as the use of high voltages, power and hand tools, electronic test equipment and power supplies.
- Explosives Storage: Routine hazards include explosive hazards classified by DOT as either 1.1 (mass detonating), 1.2 (non-mass detonating, fragment-producing), 1.3 (mass fire), and 1.4 (moderate fire-no blast). All activities utilize various quantities of liquid nitrogen and liquid argon.
- Safeguards: Each facility maintains specific contingency plans for hazardous materials incident handling. The Alameda County Fire Department operated and staffed station at LLNL is especially trained and equipped to handle incidents at each of the sites, as well as for mutual and automatic aid off site to the Livermore-Pleasanton Fire Department.

National Flood Insurance Program

The City of Livermore entered the National Flood Insurance (NFIP) program on December 1, 1972 through the Emergency Program and, subsequently, on July 5, 1977 through the Regular Program when the City's initial Flood Insurance Rate Maps were issued. Currently, there are 57 flood insurance policies in effect in Livermore, totaling \$13,081,400 in coverage. Since joining the NFIP there have been no paid losses. No structures located outside the special flood hazard area have appeared on the repetitive loss report.

The City does not participate in the Community Rating System (CRS) and is currently class 10. There are ten classes in the rating system of which the lower the class the larger the discount the community receives on flood insurance. There are an estimated five properties that benefit from this program.

The Floodplain Ordinance was updated on June 23, 2008 to designate the Community Development Director or designee as the Floodplain Manager and to automatically adopt all Federal Insurance Rate Maps and amendments and revisions that become effective. These changes allowed the Digital Flood Insurance Rate Maps effective August 3, 2009 to be officially adopted as soon as they became effective.

The City had its last Community Assistance Visit (CAV) in 2009 and was found to be in compliance with the NFIP. The City's previous CAV also showed that the City was in compliance with the NFIP. In response to a CAV in 2000, the City was directed to train staff in floodplain management. Pam Lung was designated as the floodplain manager in 2001, completed the floodplain management classes in 2001 and 2002, and, in September 2003, received the Certified Floodplain Manager Certification from the Association of State Floodplain Managers. The City incorporated floodplain management regulations into its General Plan update in 2003 and has continuously enforced these requirements with every development and capital improvement project. The City's designated floodplain manager attended an October 2009 CRS class and the FEMA Floodplain University class in October 2010, which also contained a CRS class section, and is aware of the requirements and opportunity to qualify for a 5-10% or greater discount on flood insurance.

To regulate development in flood hazard areas, the City of Livermore has completed hydraulic analysis of creeks and storm drain system consistent with the Zone 7 Flood Control and Water District design criteria and incorporated into the City's storm drain master plan. In addition, the City worked with Zone 7 as a stakeholder to develop their Stream Management Master Plan (SMMP) in 2003 and is currently working with them to begin identifying funding opportunities to implement this plan through their StreamWISE program.

The El Charro Specific Plan infrastructure design currently incorporates the first phase of the Arroyo Las Positas Diversion project (SMMP Project 5-2) into the public infrastructure design plans for construction in 2011.

We have found community participation has the following issues:

- Most community members do not choose to buy flood insurance unless their mortgage company requires it.
- Some mortgage companies have required community members to prove they are outside of the floodplain by verifying their building elevation is above the floodplain rather than looking at the map elevation data as well as the horizontal floodplain footprint. Without elevation certificates for these properties outside of the floodplain the homeowner is unable to show their building is out of the floodplain and the flood insurance companies are unable to appropriately rate the flood insurance policies.

In the absence of the needed information the worst case situation is assumed and highest flood insurance rate is charged. Elevation certificates are not required for structures outside of the floodplain and so the City has few elevation certificates on file. Elevation Certificates must be prepared by a registered land surveyor and cost \$500-\$1000 for a single family residence and up to \$5,000 for a commercial building or multi-family structure. Without elevation data, flood insurance costs between \$800 to \$1200 per year per residence.

The challenges in applying for the CRS program include requesting City Council to sign a letter to FEMA requesting application to the program, applying for the program, organization and archiving of elevation certificates and scheduling a CAV since our last CAV was held over six months ago.

Continued compliance with NFIP (c-2 and c-4) is dependent upon well coordinated development review and data collection processes and ongoing staff training.

Mitigation Goals

The goal of the ABAG MJ-LHMP is to maintain and enhance a disaster-resistant region by reducing the potential for loss of life, property damage, and environmental degradation from natural disasters, while accelerating economic recovery from those disasters. This goal is unchanged from the 2005 plan and continues to be the goal of the City of Livermore in designing its mitigation program.

Mitigation Activities and Priorities

Evaluation of Progress from 2005 Plan

In 2005, mitigation actions and priorities were identified. This section contains lists of strategies identified, along with responsible party, action taken, and current status of progress.

Completed Strategies

- Assess the vulnerability of critical facilities designated by lifeline operators to damage in natural disasters or security threats, including facilities owned outside of the Bay Area that can impact service delivery within the region. Completed by Water Resources in 2006. INFRA-a-(1)
- Retrofit or replace critical lifeline facilities and/or their back-up facilities that are shown to be vulnerable to damage in natural disasters. Project completed for Water Resources, 20 year CIP projects to address any deficiencies. INFRA-a- (4)
- Replace or retrofit water-retention structures that are determined to be structurally deficient. Water Resources. Completed 2006. INFRA-b-(5)
- As a secondary focus, assess the vulnerability of non-critical facilities to damage in natural disasters based on occupancy and structural type, make recommendations on priorities for structural improvements or occupancy reductions, and identify potential funding mechanisms. Community Development. GOVT-a-(9)
- Purchased command vehicles for use as mobile command/EOC vehicles if current vehicles are unsuitable or inadequate. Livermore-Pleasanton Fire Department (LPFD) and Livermore Police Department. Completed in 2007. GOVT-b-(9)

Future Mitigation Actions and Priorities

As a participant in the 2010 ABAG multi-jurisdictional planning process, City of Livermore staff helped in the development and review of the comprehensive list of mitigation strategies in the overall multi-jurisdictional plan. The decision on priority was made based on a variety of criteria, not simply on an economic cost-benefit analysis. These criteria include being technically and administratively feasible, politically acceptable, socially appropriate, legal, economically sound, and not harmful to the environment or our heritage. Representatives from multiple departments then met on a regular basis to review progress on the City's 2005 strategies, to identify and prioritize additional mitigation strategies, if any, to update the list. The "Ongoing Programs" section starting on page 20 are those activities we have in place to address future mitigation actions.

The "Ongoing Programs" address those hazards identified within our jurisdiction, i.e. earthquakes, flooding, and wild fires.

The City's planning team reviewed the list of 2005 mitigation activities which were rated very high, high, moderate, or under study. For the 2010 review, the City's planning team provided the status of the program grouping them in either deferred, unfunded, or under study.

Deferred Activities

- Pre-position emergency power generation capacity (or have rental/lease agreements for these generators) in critical buildings of cities, counties, and special districts to maintain continuity of government and services. Water Resources Division. Have generators in water pump stations; need back-up power to keep entire Livermore Water Resources Plant running. On CIP. INFRA-a- (8)
- Tie public education on defensible space and a comprehensive defensible space ordinance to a field program of enforcement. LPFD. (HSNG-g-(2). Funding and resources unavailable.
- Provide retrofit classes or workshops for homeowners. Community Development. HSNG-b-(7). Funding unavailable.
- Offer the 20-hour basic CERT training to teachers and after-school personnel. LPFD Emergency Preparedness and Livermore School District. This strategy moved from category "existing" to deferred" due to resources on both sides of the partnership. EDUC-c-(3)
- Offer the 20-hour basic CERT training course through the Adult School system and/or through the Community College system. LPFD Emergency Preparedness. This strategy moved from the category "existing" to "deferred" because there was a fee to utilize registration through the Adult School which was not acceptable when the program was granted U.S. Dept. of Homeland Security funding. EDUC-c-(5)
- Explore ways to require that hazardous materials stored in the flood zone be elevated or otherwise protected from flood waters. Public Works. ENVI-a-(10)

- Assess the vulnerability of critical facilities (such as city halls, fire stations, community service centers, seaports, and airports) to damage in natural disasters and make recommendations for appropriate mitigation. Unfunded. Maintenance Division. GOVT-a-(1)
- Retrofit or replace critical facilities that are shown to be vulnerable to damage in natural disasters. Unfunded. Maintenance Division. GOVT-a-(2)
- Install micro and/or surveillance cameras around critical public assets tied to web-based software, and develop a surveillance protocol to monitor these cameras. Unfunded. Maintenance Division. GOVT-a-(6)

Unfunded

- Develop unused or new pedestrian rights-of-way as walkways to serve as additional evacuation routes (such as fire roads in park lands). Public Works/Maintenance Division. INFRA-a-10.
- Encourage the cooperation of utility system providers and cities, counties, and other special districts to develop strong and effective mitigation strategies for infrastructure systems and facilities. Not implemented; unfunded. INFRA-a-(3)
- Assist residents in the development of defensible space through the use of, for example, “tool libraries” for weed abatement tools, roadside collection and/or chipping services (for brush, weeds, and tree branches) in wildland-urban-interface fire-threatened communities or in areas exposed to high-to-extreme fire threat. LPFD. HSNG-k-(9)
- Encourage the formation of a community- and neighborhood-based approach to wildfire education and action through local Fire Safe Councils and the *Fire Wise Program*. LPFD. HSNG-k-(9) Previously moderate priority.
- Assist businesses in the development of defensible space through the use of, for example, “tool libraries” for weed abatement tools, roadside collection and/or chipping services (for brush, weeds, and tree branches) in wildland-urban-interface fire-threatened communities or in areas exposed to high-to-extreme fire threat. LPFD. ECON-j-(6)
- Conduct comprehensive programs to identify and mitigate problems with facility contents, architectural components, and equipment that will prevent critical buildings from being functional after major natural disasters. Public Works. GOVT-a-(4)

Under Study

- Be aware of past problems of inadequate hazard disclosure and work with real estate agents to improve enforcement of real estate disclosure requirements for those hazards covered by this plan, for example, by making those agents and the disclosure firms aware of the hazard maps incorporated in this plan and available on the ABAG web site at <http://quake.abag.ca.gov/mitigation>, as well as locally developed maps. Community Development. HSNG-a-(1)

On-Going Mitigation Strategy Programs

The City has many on-going mitigation programs that help create a more disaster-resistant community. The following lists those programs identified as *Existing Programs* in the mitigation strategy spreadsheet. The list of programs is grouped using the ABAG categories. Each ongoing program identifies the overseeing City department/program, comments, and the ABAG category identifier. It is the City's priority to find additional funding to sustain these on-going programs over time.

The “Ongoing Programs” address those hazards identified within our jurisdiction, i.e. earthquakes, flooding, and wild fires.

Ongoing Programs

- Have back-up emergency power available for critical intersection traffic lights. Public Works/Maintenance Division. INFRA-a-(9)
- Encourage replacing aboveground electric and phone wires and other structures with underground facilities, and use the planning-approval process to ensure that all new phone and electrical utility lines are installed underground. Community Development. INFRA-a-(12)
- Install specially-engineered pipelines in areas subject to faulting, liquefaction, earthquake-induced land sliding, or other earthquake hazard. Water Resources. INFRA-a-(4)
- Ensure that transit operators, private ambulance companies, cities, and/or counties have mechanisms in place for medical transport during and after disasters that take into consideration the potential for reduced capabilities of roads following these same disasters. Coordination between Livermore-Pleasanton Fire and local agencies. INFRA-a-(15)
- Comply with all applicable building and fire codes, as well as other regulations (such as state requirements for fault, landslide, and liquefaction investigations in particular mapped areas) when constructing or significantly remodeling infrastructure facilities. Maintenance Division. INFRA-b-(8)
- Ensure a reliable source of water for fire suppression (meeting acceptable standards for minimum volume and duration of flow) for existing and new development. LPFD Fire Prevention. INFRA-c-(1)
- Develop a coordinated approach between fire jurisdictions and water supply agencies to identify needed improvements to the water distribution system, initially focusing on areas of highest wildfire hazard. LPFD & Water Resources. INFRA-c-(2)

- Develop a defensible space vegetation program that includes the clearing or thinning of (a) non-fire resistive vegetation within 30 feet of access and evacuation roads and routes to critical facilities, or (b) all non-native species (such as eucalyptus and pine, but not necessarily oaks) within 30 feet of access and evacuation roads and routes to critical facilities. LPFD Fire Prevention. INFRA-c-(3)
- Ensure all dead-end segments of public roads in high hazard areas have at least a “T” intersection turn-around sufficient for typical wildland fire equipment. LPFD Fire Prevention. INFRA-c-(4)
- Ensure minimum road width meets current code and city ordinance requirements and LPFD operational standards on *all* driveways and road segments in wildfire hazard areas. LPFD Fire Prevention. INFRA-c-(5)
- Require that development in high fire hazard areas provide adequate access roads (with width and vertical clearance that meet the minimum standards of the *Fire Code* or relevant local ordinance), onsite fire protection systems, evacuation signage, and fire breaks. LPFD Fire Prevention. INFRA-c-(6)
- Ensure adequate fire equipment road or fire road access to developed and open space areas. LPFD Fire Prevention. INFRA-c-(7)
- Maintain fire roads and/or public right-of-way roads and keep them passable at all times for emergency vehicle access. Public Works. INFRA-c-(8)

- Continue maintenance efforts to keep storm drains and creeks free of obstructions, while retaining vegetation in the channel (as appropriate), to allow for the free flow of water. Public Works. INFRA-d-(7)
- Enforce provisions under creek protection, stormwater management, and discharge control ordinances designed to keep watercourses free of obstructions and to protect drainage facilities to conform with the Regional Water Quality Control Board's Best Management Practices. Public Works. INFRA-d-(8)
- Develop an approach and locations for various watercourse bank protection strategies, including stream bed depth management using dredging, Public Works & Community Development. INFRA-d-(9)
- Determine whether or not wastewater treatment plants are protected from floods, and if not, investigate the use of flood-control berms to not only protect from stream or river flooding, but also increasing plant security. Public Works. INFRA-d-(14)

- Include “areas subject to ground failure” in the list of criteria used for determining a replacement schedule (along with importance, age, type of construction material, size, condition, and maintenance or repair history) for pipelines. Community Development. INFRA-e-(1)
- Establish requirements in zoning ordinances to address hillside development constraints in areas of steep slopes that are likely to lead to excessive road maintenance or where roads will be difficult to maintain during winter storms due to landsliding. Community Development. INFRA-e-(2)

- Provide materials to the public related to planning for power outages. LPFD Emergency Preparedness. INFR-g-(1) changed to ongoing; included in community preparedness education.
- Provide materials to the public related to family and personal planning for delays due to traffic or road closures. LPFD Emergency Preparedness. INFRA-g-(2) changed to ongoing; included in community preparedness education.
- Provide materials to the public related to coping with reductions in water supply or contamination of that supply. LPFD Emergency Preparedness. INFRA-g-(3) changed to ongoing; included in community preparedness education.
- Facilitate and/or coordinate the distribution of materials that are prepared by others, such as by placing materials in city or utility newsletters, or on community access channels, as appropriate. LPFD Emergency Preparedness. INFRA-g-(5)

- Work with critical health care facilities operators to ensure that critical facilities are structurally sound and have nonstructural systems designed to remain functional following disasters (as required for acute-care hospitals for earthquakes by State law). ValleyCare Health System. HEAL-a-(1)
- Encourage hospitals to work with the California Office of Statewide Health Planning and Development (OSHPD) to formalize arrangements with structural engineers to report to the hospital, assess damage, and determine if the buildings can be reoccupied. The program should be similar to San Francisco's Building Occupancy Resumption Program (BORP) that permits owners of buildings to hire qualified structural engineers to create building-specific post-disaster inspection plans and allows these engineers to become automatically deputized as inspectors for these buildings in the event of an earthquake or other disaster. OSHPD, rather than city/county building departments, has the authority and responsibility for the structural integrity of hospital structures. ValleyCare Health System. HEAL-a-(2)
- Ensure health care facilities are adequately prepared to care for victims with respiratory problems related to smoke and/or particulate matter inhalation. ValleyCare Health System. HEAL-a-(3)
- Ensure these health care facilities have the capacity to shut off outside air and be self-contained. ValleyCare Health System. HEAL-a-(4)
- Ensure that hospitals and other major health care facilities have auxiliary water and power sources. ValleyCare Health System. HEAL-a-(5)
- Work with health care facilities to institute isolation capacity should a need for them arise following a communicable disease epidemic. ValleyCare Health System. HEAL-a-(6)
- Develop printed materials, utilize existing materials, conduct workshops, and/or provide outreach encouraging employees of these critical health care facilities to have family disaster plans and conduct mitigation activities in their own homes. ValleyCare Health System. HEAL-a-(7)

- Ancillary Health-Related Facilities HEAL-b-(1) to (3) Alameda County Public Health
- Interface with National and State-Health Care Initiatives HEAL-c- (1) to (3) MMRS Cities of Fremont & Oakland
- Plan to utilize the State of California Department of Health Services laboratory for confirmation of biological agencies and Department of Defense laboratories in Berkeley (Lawrence Berkeley National Laboratory) or Livermore (Lawrence Livermore National Laboratory and Sandia) for confirmation of radiological agents. LPFD HEAL-c-(4)
- Train appropriate personnel to understand that the Metropolitan Medical Response System (MMRS) cities in your area. Alameda County Public Health & LPFD. HEAL-d-(2)
- Train appropriate personnel to know if any National Disaster Medical System (NDMS) uniformed or non-uniformed personnel are within one-to-four hours of your community. These federal resources include veterinary, mortuary, and medical personnel. MMRS and Alameda County Public Health. HEAL-d-(3)
- Train appropriate personnel to utilize available State of California Department of Health Services laboratory for confirmation of biological agents and Department of Defense laboratories in Berkeley (Lawrence Berkeley National Laboratory) or Livermore (Lawrence Livermore National Laboratory and Sandia) for confirmation of radiological agents. LPFD and ValleyCare Health System. HEAL-d-(4)

- Create incentives for owners of historic or architecturally significant residential buildings to undertake mitigation to levels that will minimize the likelihood that these buildings will need to be demolished after a disaster, particularly if those alterations conform to the federal Secretary of the Interior’s *Guidelines for Rehabilitation*. Community Development. (HSNG-a-(2) This is a city policy.

- Utilize or recommend adoption of a retrofit standard that includes standard plan sets and construction details for voluntary bolting of homes to their foundations and bracing of outside walls of crawl spaces (“cripple” walls), such as that being developed by a committee representing the East Bay-Peninsula-Monterey Chapters of the International Code Council (ICC), California Building Officials (CALBO), the Structural Engineers Association of Northern California (SEAONC), the Northern California Chapter of the Earthquake Engineering Research Institute (EERI-NC), and ABAG’s Earthquake Program. Community Development. HSNG-b-(1) This is City Policy.
- Require engineered plan sets for retrofitting of heavy two-story homes with living areas over garages, as well as for split level homes, until standard plan sets and construction details become available. HSNG-b-(2) This is City Policy.
- Require engineered plan sets for retrofitting of homes on steep hillsides. HSNG-b-(3) This is City Policy.
- Encourage local government building inspectors to take classes on a periodic basis (such as the FEMA-developed training classes offered by ABAG) on retrofitting of single-family homes. Community Development. HSNG-b-(4) This is City Policy.

- Encourage private retrofit contractors and home inspectors doing work in your area to take retrofit classes on a periodic basis (such as the FEMA-developed training classes offered by ABAG) on retrofitting of single-family homes. HSNG-b-(5) This is City Policy.
- Establish tool-lending libraries with common tools needed for retrofitting for use by homeowners with appropriate training. Community Development. HSNG-b-(8)
- Require engineered plan sets for voluntary or mandatory soft-story retrofits until a standard plan set and construction details become available. Community Development. HSNG-c-(1)
- Adopt the latest applicable code standard for the design of voluntary or mandatory soft-story building retrofits. Community Development. HSNG-c-(2)
- Continue to actively implement existing State law that requires cities and counties to maintain lists of the addresses of unreinforced masonry buildings and inform property owners that they own this type of hazardous structure. URM program adopted in 1997 (Ordinance 1517). All URJM multi-family housing stock has been demolished or retrofitted as of 2005. Community Development. HSNG-d-(1)
- Adopt the latest applicable code standard for the design of voluntary or mandatory retrofit of seismically vulnerable buildings. Community Development. HSNG-e-(3)
- Continue to require that all new housing be constructed in compliance with structural requirements of the most recently adopted version of the *California Building Code*. Latest version adopted in 2011 (Ordinance 1925) Community Development. HSNG-f-(1)
- Conduct appropriate employee training and support continued education to ensure enforcement of building codes and construction standards, as well as identification of typical design inadequacies of housing and recommended improvements. Community Development. HSNG-f-(2) This is City Policy.
- Increase efforts to reduce hazards in existing development in high wildfire hazard areas (identified as wildland-urban-interface fire-threatened communities or in areas exposed to high-to-extreme fire threat) through improving engineering design and vegetation management for mitigation, appropriate code enforcement, and public education on defensible space mitigation strategies. LPFD Fire Prevention. HSNG-g-(1)
- Require that new homes in wildland-urban-interface fire-threatened communities or in areas exposed to high-to-extreme fire threat be constructed of fire-resistant building materials (including roofing and exterior walls) and incorporate fire-resistant design features (such as minimal use of eaves, internal corners, and open first floors) to increase structural survivability and reduce ignitability. LPFD Fire Prevention HSNG-g-(3)
- Adopt and/or amend, as needed, updated versions of the *California Building and Fire Codes* so that optimal fire-protection standards are used in construction and renovation projects. LPFD. Adopted Chapter 7A of the California Building Code, exterior wildfire exposure protection measures. LPFD and Community Development. HSNG-g-(6)

- *California Building and Fire Codes* and local housing codes require the installation of smoke detectors and/or fire-extinguishing systems by making installation a condition of (a) finalizing a permit for any work on existing properties valued at over a fixed amount, such as \$500 or \$1000, and/or (b) a condition for the transfer of property if these changes are determined cost-effective strategies. LPFD Fire Prevention. HSNG-g-(7)
- Work to ensure a reliable source of water for fire suppression in rural-residential areas through the cooperative efforts of water districts, fire districts, and residents. LPFD Fire Prevention. HSNG-g-(8)
- In wild-urban interface fire-threatened communities or in areas exposed to high-to-extreme fire threat, maintain and enforce the weed abatement program and provide educational opportunities to property owners on an as needed basis. LPFD Fire Prevention. HSNG-g-(9) Annual weed abatement.
- Establish a Fire Hazard Abatement District to fund reduction in fire risk of existing properties through vegetation management that includes reduction of fuel loads, use of defensible space, and fuel breaks. LPFD Fire Prevention. Weed Abatement Program. HSNG-g-(11)
- Work with residents in rural-residential areas to ensure adequate access and evacuation in wildland-urban- interface fire-threatened communities or in areas exposed to high-to-extreme fire threat. LPFD Fire Prevention. HSNG-g-(12)
- Require fire sprinklers in all new homes. (Ordinance adopted in 1990) LPFD Fire Prevention. HSNG-g-(13)
- Require fire sprinklers in all new or substantially remodeled multifamily housing, regardless of distance from a fire station. (Ordinance adopted in 1990) LPFD Fire Prevention. HSNG-g-(14)
- Require sprinklers in all mixed use development to protect residential uses from fires started in non-residential areas. (Ordinance adopted in 1990) LPFD Fire Prevention. HSNG-g-(15)
- Conduct periodic fire-safety inspections of all multi-family buildings, as required by State law. LPFD Fire Prevention. HSNG-g-(17)
- Ensure that fire-preventive vegetation-management techniques and practices for creek sides and high-slope areas do not contribute to the landslide and erosion hazard. LPFD Fire Prevention, Maintenance & work with regional councils such as the Diablo Fire Safe Council. HSNG-g-(18)
- Provide sandbags and plastic sheeting to residents in anticipation of rainstorms, and deliver those materials to the disabled and elderly upon request. Public Works. (HSNG-h-(4)
- Provide public information on locations for obtaining sandbags and/or deliver those sandbags to those various locations throughout a city and/or county prior to and/or during the rainy season. Public Works. HSNG-h-(4)

- Increase efforts to reduce landslides and erosion in existing and future development by improving appropriate code enforcement and use of applicable standards, such as those appearing in the *California Building Code*, California Geological Survey *Special Report 117 – Guidelines for Evaluating and Mitigating Seismic Hazards in California*, American Society of Civil Engineers (ASCE) report *Recommended Procedures for Implementation of DMG Special Publication 117: Guidelines for Analyzing and Mitigating Landslide Hazards in California*, and the California Board for Geologists and Geophysicists *Guidelines for Engineering Geologic Reports*. Such standards should cover excavation, fill placement, cut-fill transitions, slope stability, drainage and erosion control, slope setbacks, expansive soils, collapsible soils, environmental issues, geological and geotechnical investigations, grading plans and specifications, protection of adjacent properties, and review and permit issuance. Community Development. HSNG-i-(1)
- Increase efforts to reduce landslides and erosion in existing and future development through continuing education of design professionals on mitigation strategies. Incorporated into General Plan update in 2006. Community Development. HSNG-i-(2)
- Develop and enforce an ordinance for disaster-damaged structures to ensure that residential buildings are repaired in an appropriate and timely manner and retrofitted concurrently to avoid a recurrence. Adopted dam age assessment placarding program in 2011. California Building Code Chapter 34 (existing buildings) building policy requirement. Provision of the International Existing Building Code. Community Development. HSNG-j-(1) & ECON-i
- Provide information to residents of your community on the availability of interactive hazard maps showing your community on ABAG’s web site. Community Development and LPFD. HSNG-k-(1)
- Develop printed materials, utilize existing materials (such as developed by FEMA and the American Red Cross), conduct workshops, and/or provide outreach encouraging residents to have family disaster plans that include drop-cover-hold earthquake drills, fire and storm evacuation procedures, and shelter-in-place emergency guidelines. Community Development and LPFD. HSNG-k-(2)
- Better inform residents of comprehensive mitigation activities, including elevation of appliances above expected flood levels, use of fire-resistant roofing and defensible space in high wildfire threat and wildfire-urban-interface areas, structural retrofitting techniques for older homes, and use of intelligent grading practices through workshops, publications, and media announcements and events. Community Development and LPFD. HSNG-k-(3)
- Use disaster anniversaries, such as April (Earthquake Month and the 1906 earthquake), September (9/11), and October (Loma Prieta earthquake and Oakland Hills fire), to remind the public on safety and security mitigation activities. LPFD Emergency Preparedness. HSNG-k-(5)
- Sponsor the formation and training of Community Emergency Response Teams (CERT) training. LPFD Emergency Preparedness. HSNG-k-(6)

- Institute the neighborhood watch block captain and team programs outlined in the Citizen Corps program guide. Livermore Police Dept. and LPFD. HSNG-k-(8) Neighborhood Watch and CERT are in place. VIPS is being finalized as a program.
- Train homeowners to locate and shut off gas valves if they smell or hear gas leaking. LPFD Emergency Preparedness. HSNG-k-(10)
- Make use of the materials on the ABAG web site at <http://quake.abag.ca.gov/fixit> and other web sites to increase residential mitigation activities related to earthquakes. LPFD Emergency Preparedness. HSNG-k-(13)
- Be aware of past problems of inadequate hazard disclosure and work with real estate agents to improve enforcement of real estate disclosure requirements for those hazards covered by this plan, for example, by making those agents and the disclosure firms aware of the hazard maps incorporated in this plan and available on the ABAG web site at <http://quake.abag.ca.gov/mitigation>, as well as locally developed maps. Community Development. ECON-a-(1)
- Require engineered plan sets for voluntary or mandatory soft-story retrofits until a standard plan set and construction details become available. Community Development. ECON-b-(1)
- Adopt the latest applicable code standard for the design of voluntary or mandatory soft-story building retrofits. Community Development. ECON-a-(2)
- Continue to actively implement existing State law that requires cities and counties to maintain lists of the addresses of unreinforced masonry buildings and inform property owners that they own this type of hazardous structure. Community Development. ECON-c-(1)
- Adopt the latest applicable code standard for the design of voluntary or mandatory retrofit of seismically vulnerable buildings. Community Development. ECON-d-(2)
- Increase efforts to reduce fire in existing development through improving engineering design and vegetation management for mitigation, appropriate code enforcement, and public education on mitigation strategies. LPFD Emergency Preparedness (Public Education component).ECON-e-(1)
- Require that new business and office buildings in high fire hazard areas be constructed of fire-resistant building materials and incorporate fire-resistant design features to increase structural survivability and reduce ignitability. LPFD Fire Prevention. ECON-e-(2)
- Conduct periodic fire-safety inspections of all commercial and institutional buildings. LPFD Fire Prevention. Covered by CUPA and Annual Fire Inspection Program. ECON-e-(9)
- Ensure that fire-preventive vegetation-management techniques and practices for creek sides and high-slope areas do not contribute to the landslide and erosion hazard. State Dept. of Fish & Game, & Corps of Engineers. ECON-e-(11)
- Provide sandbags and plastic sheeting to businesses in anticipation of rainstorms, and deliver those materials to the disabled and elderly upon request. Public Works. ECON-f-(4)
- Provide public information on locations for obtaining sandbags and deliver those sandbags to those various locations throughout a city and/or county. Public Works. ECON-f-(5)

- Increase efforts to reduce landslides and erosion in existing and future development by improving appropriate code enforcement and use of applicable standards, such as those appearing in the *California Building Code*, California Geological Survey *Special Report 117 – Guidelines for Evaluating and Mitigating Seismic Hazards in California*, American Society of Civil Engineers (ASCE) report *Recommended Procedures for Implementation of DMG Special Publication 117: Guidelines for Analyzing and Mitigating Landslide Hazards in California*, and the California Board for Geologists and Geophysicists *Guidelines for Engineering Geologic Reports*. Such standards should cover excavation, fill placement, cut-fill transitions, slope stability, drainage and erosion control, slope setbacks, expansive soils, collapsible soils, environmental issues, geological and geotechnical investigations, grading plans and specifications, protection of adjacent properties, and review and permit issuance. Community Development. ECON-g-(1)
- Increase efforts to reduce landslides and erosion in existing and future development through continuing education of design professionals on mitigation strategies. Incorporated into General Plan update in 2006. Community Development. ECON-g-(2)
- Continue to require that all new housing be constructed in compliance with structural requirements of the most recently adopted version of the *California Building Code*. Latest version adopted in 2011(Ordinance 1925) Community Development. ECON-h-(1)
- Conduct appropriate employee training and support continued education to ensure enforcement of building codes and construction standards, as well as identification of typical design inadequacies of housing and recommended improvements. Community Development. ECON-h-(2) This is City Policy.
- Provide information to business owners and employees on the availability of interactive hazard maps on ABAG’s web site. Community Development and LPFD. ECON-j-(1)
- Develop printed materials, utilize existing materials (such as developed by FEMA and the American Red Cross), conduct workshops, and/or provide outreach encouraging businesses’ employees to have family disaster plans that include drop-cover-hold earthquake drills, fire and storm evacuation procedures, and shelter-in-place emergency guidelines. Community Development and LPFD Fire Prevention & Emergency Preparedness. ECON-j-(2)
- Develop printed materials, conduct workshops, and provide outreach to Bay Area businesses focusing on business continuity planning. Community Development, Red Cross and LPFD. ECON-j-(3)
- Sponsor the formation and training of Community Emergency Response Teams (CERT) training through partnerships with local businesses. LPFD. ECON-j-(5)
- Make use of the materials developed by others (such as found on ABAG’s web site at <http://quake.abag.ca.gov/business>) to increase mitigation activities related to earthquakes. ABAG plans to continue to improve the quality of those materials over time. LPFD Emergency Preparedness. ECON-j-(7)
- Ensure businesses and laboratories handling hazardous materials or pathogens increase security to a level high enough to create a deterrent to crime and terrorism, including active implementation of “cradle-to-grave” tracking systems. LPFD Fire Prevention. ECON-j-(10). This is handled under Fire Code and CUPA.

- Encourage joint meetings of security and operations personnel at major employers to develop innovative ways for these personnel to work together to increase safety and security. LPFD Emergency Preparedness. ECON-j-(11)
- Develop and distribute available culturally appropriate materials related to disaster mitigation and preparedness. LPFD Emergency Preparedness. ECON-j-(13)
- Encourage joint meetings of security and operations personnel at critical facilities to develop innovative ways for these personnel to work together to increase safety and security. Livermore Police Department. GOVT-a-(5)
- Encourage joint meetings of security and operations personnel at critical facilities to develop innovative ways for these personnel to work together to increase safety and security. Public Works/Maintenance. GOVT-a-(6)
- Ensure that government-owned facilities are subject to the same or more stringent regulations as imposed on privately-owned development. Community Development. GOVT-a-(10)
- Comply with all applicable building and fire codes, as well as other regulations (such as state requirements for fault, landslide, and liquefaction investigations in particular mapped areas) when constructing or significantly remodeling government-owned facilities. (Ordinance 1925) LPFD & Community Development. GOVT-a-(11)
- Prior to acquisition of property to be used as a critical facility, conduct a study to ensure the absence of significant hazards. City Policy. Community Development. GOVT-a-(12)
- Establish a framework and process for pre-event planning for post-event recovery that specifies roles, priorities, and responsibilities of various departments within the local government organization, and that outlines a structure and process for policy-making involving elected officials and appointed advisory committees. LPFD Emergency Preparedness. GOVT-b-(1)
- Prepare a basic Recovery Plan that outlines the major issues and tasks that are likely to be the key elements of community recovery, as well as integrate this planning into response planning. LPFD Emergency Preparedness. GOVT-b-(2)
- Develop a plan for short-term and intermediate-term sheltering of impacted residents. LPFD Emergency Preparedness. GOVT-b-(4)
- Periodically assess the need for new or relocated fire or police stations and other emergency facilities, changes in staffing levels, and additional or updated supplies, equipment, technologies, and in-service training classes. LPFD and Livermore Police Department. GOVT-b-(5)
- Ensure that fire and police department personnel have adequate radios, breathing apparatuses, protective gear, and other equipment to respond to a major disaster. LPFD and Livermore Police Department. Periodic equipment replacement program. \$50,000 for LPD. LPFD has an existing replacement program and is applying for grants currently to order new breathing apparatus (\$28,000 each) and new 800 Mhz radios. GOVT-b-(6)

- Develop and maintain a system of interoperable communications for first responders from cities, counties, special districts, state, and federal agencies. Alameda County and local jurisdictions. County-wide group has not given a completion date for this study yet. LPD estimates it will cost about \$2M to 3M to develop these communications, using these terrorism preparedness grants and local budget funds. Tentative completion 2012. GOVT-b-(7)
- Harden emergency response communications, including, for example, building redundant capacity into public safety alerting and/or answering points, replacing or hardening microwave and simulcast systems, adding digital encryption for programmable radios, and ensuring a plug-and-play capability for amateur radio. LPFD and Livermore Police Department. \$6 million estimated cost. The Livermore / Pleasanton / LPFD system is 20 years old. This is no longer serviceable and does not meet the P-25 compliance regulations. This system and the Alameda County system are being studied to develop a county-wide interoperability infrastructure. The partnership concept in process with a tentative completion date of 2012. GOVT-b-(8)
- Maintain the local government’s emergency operations center in a fully functional state of readiness. LPFD and Livermore Police Department. GOVT-b-(10)
- Expand or participate in expanding traditional disaster exercises involving city and county emergency personnel to include airport and port personnel, transit and infrastructure providers, hospitals, schools, park districts, and major employers. LPFD Emergency Preparedness. GOVT-b-(11)
- Maintain and update as necessary the local government’s Standardized Emergency Management System Plan. LPFD Emergency Preparedness. GOVT-b-(12)
- Continue to participate not only in general mutual-aid agreements, but also in agreements with adjoining jurisdictions for cooperative response to fires, floods, earthquakes, and other disasters. LPFD, Livermore Police Department and Community Development. GOVT-b-(13)
- Regulate and enforce the location and design of street-address numbers on buildings and minimize the naming of short streets (that are actually driveways) to single homes. Community Development. GOVT-b-(16)
- Monitor weather during times of high fire risk using, for example, weather stations tied into police and fire dispatch centers. LPFD. GOVT-b-(17)
- Investigate the use of phone-based warning systems for selected geographic areas. LPFD Emergency Preparedness. GOVT-b-(22)
- Review and update, as necessary, procedures pursuant to the *State Dam Safety Act* for the emergency evacuation of areas located below major water-storage facilities. LPFD and Livermore Police Department. All-hazard evacuation plan in place. We do not separate out the hazard of dams in the evacuation plan. GOVT-b-(23)

- Promote information sharing among overlapping and neighboring local governments, including cities, counties, and special districts, as well as utilities. LPFD Emergency Preparedness and Public Works. GOVT-c-(1)
- Recognize that emergency services is more than the coordination of police and fire response, for it also includes planning activities with providers of water, food, energy, transportation, financial, information, and public health services. LPFD Preparedness and Livermore Disaster Council. GOVT-c-(2)

- Recognize that a multi-agency approach is needed to mitigate flooding by having flood control districts, cities, counties, and utilities meet at least annually to jointly discuss their a capital improvement programs for most effectively reducing the threat of storm-induced flooding. Public Works/Maintenance. GOVT-c-(3)
 - As new flood-control projects are completed, request that FEMA revise its flood-insurance rate maps and digital geographic information system data to reflect flood risks as accurately as possible. Community Development. GOVT-c-(4)
 - Participate in FEMA’s National Flood Insurance Program. Community Development. GOVT-c-(5)
 - Participate in multi-agency efforts to mitigate fire threat, such as the Hills Emergency Forum (in the east Bay), various *FireSafe* Council programs, and city-utility task forces. LPFD. GOVT-c-(6)
 - Work with major employers and agencies that handle hazardous materials to coordinate mitigation efforts for the possible release of these materials due to a natural disaster such as an earthquake, flood, fire, or landslide. LPFD Hazardous Materials. GOVT-c-(7)
 - Encourage staff to participate in efforts by professional organizations to mitigate earthquake and landslide disaster losses. Community Development. GOVT-c-(8)
 - Conduct and/or promote attendance at local or regional hazard conferences and workshops for elected officials to educate the officials on the critical need for programs in mitigating earthquake, wildfire, flood, and landslide hazards. Community Development. GOVT-c-(9)
This is City Policy.
 - Cooperate with researchers working on government-funded projects to refine information on hazards, for example, by expediting the permit and approval process for installation of seismic arrays, gravity survey instruments, borehole drilling, fault trenching, landslide mapping, flood modeling, and/or damage data collection. Community Development. GOVT-c- (10) This is City Policy.
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- Work cooperatively with the American Red Cross and others to set up memoranda of understanding for use of education facilities as emergency shelters following disasters. LPFD Emergency Preparedness and Livermore Disaster Council. EDUC-b-(1)
 - Work cooperatively to ensure that school district personnel and relevant staff understand and are trained that being designated by the American Red Cross or others as a potential emergency shelter does not mean that the school has had a hazard or structural evaluation to ensure that it can be used as a shelter following any specific disaster. LPFD Emergency Preparedness, School District Facility Manager and Human Resources. EDUC-b-(2)
 - Work cooperatively to ensure that school district personnel understand and are trained that they are designated as disaster service workers and must remain at the school until released. LPFD Emergency Preparedness, School District Facility Manager and Human Resources. EDUC-b-(3)

- Work on and/or support efforts by schools, local governments, and other agencies to utilize their unique ability to reach families through educational materials on hazards, mitigation, and preparedness, particularly after disasters and at the beginning of the school year. These efforts will not only make the entire community more disaster-resistant, but speed the return of schools from use as shelters to use as teaching facilities. LPFD and Livermore School District. EDUC-c-(1)
- Work on and/or support joint efforts of schools and fire jurisdictions to develop plans for evacuation or sheltering in place of school children during periods of high fire danger, thereby recognizing that overloading of streets near schools by parents attempting to pick up their children during these periods can restrict access by fire personnel and equipment. LPFD and Livermore School District. EDUC-c-(2)
- Continue to enforce State-mandated requirements, such as the *California Environmental Quality Act*, to ensure that mitigation activities for hazards, such as vegetation clearance programs for fire threat and seismic retrofits, are conducted in a way that reduces environmental degradation such as air quality impacts, noise during construction, and loss of sensitive habitats and species, while respecting the community value of historic preservation. Community Development, Public Works, and LPFD Fire Prevention. ENVI-a-(1)
- Encourage regulatory agencies to work collaboratively with safety professionals to develop creative mitigation strategies that effectively balance environmental and safety needs, particularly to meet critical wildfire, flood, and earthquake safety levels. Community Development, Public Works, and LPFD Fire Prevention. ENVI-a-(2)
- Continue to enforce and/or comply with State-mandated requirements, such as the *California Environmental Quality Act* and environmental regulations to ensure that urban development is conducted in a way to minimize air pollution. For example, air pollution levels can lead to global warming, and then to drought, increased vegetation susceptibility to disease (such as pine bark beetle infestations), and associated increased fire hazard. Community Development, Public Works, and LPFD Fire Prevention. ENVI-a-(3)
- Develop and implement a comprehensive program for watershed maintenance, optimizing forest health with water yield to balance water supply, flooding, fire, and erosion concerns. Public Works and LPFD Fire Prevention. ENVI-a-(4)
- Comply with applicable performance standards of any *National Pollutant Discharge Elimination System* municipal stormwater permit that seeks to manage increases in stormwater run-off flows from new development and redevelopment construction projects. Public Works. ENVI-a-(8)
- Enforce and/or comply with the grading, erosion, and sedimentation requirements by prohibiting the discharge of concentrated stormwater flows by other than approved methods that seek to minimize associated pollution. Public Works. ENVI-a-(9)
- Enforce and/or comply with the hazardous materials requirements of the State of California Certified Unified Program Agency (CUPA). LPFD Hazardous Materials. ENVI-a-(11)
- Provide information on hazardous waste disposal and/or drop off locations. LPFD Hazardous Materials. ENVI-a-(12)

- Enforce provisions under creek protection, stormwater management, and discharge control ordinances designed to keep watercourses free of obstructions and to protect drainage facilities to conform with the Regional Water Quality Control Board's Best Management Practices. Public Works. ENVI-a-(14)
- Enforce and/or comply with the State-mandated requirement that site-specific geologic reports be prepared for development proposals within Alquist-Priolo Earthquake Fault Zones, and restrict the placement of structures for human occupancy. Community Development. LAND-a-(1)
- Require preparation of site-specific geologic or geotechnical reports for development and redevelopment proposals in areas subject to earthquake-induced landslides or liquefaction as mandated by the State Seismic Hazard Mapping Act in selected portions of the Bay Area where these maps have been completed, and condition project approval on the incorporation of necessary mitigation measures related to site remediation, structure and foundation design, and/or avoidance. Community Development. LAND-a-(2)
- Recognizing that some faults may be a hazard for surface rupture, even though they do not meet the strict criteria imposed by the Alquist-Priolo Earthquake Fault Zoning Act, identify and require geologic reports in areas adjacent to locally-significant faults. Community Development. LAND-a-(3)
- Utilize California Geological Survey existing earthquake-induced landslide and liquefaction maps to identify and require geologic reports in areas having significant liquefaction or landslide potential. Community Development. LAND-a-(4)
- Require that local government reviews of geologic and engineering studies are conducted by appropriately trained and credentialed personnel. Community Development. LAND-a-(6)
- Review development proposals to ensure that they incorporate required and appropriate fire-mitigation measures, including adequate provisions for occupant evacuation and access by emergency response personnel and equipment. LPFD. LAND-b-(1)
- Establish and enforce requirements for new development so that site-specific designs and source-control techniques are used to manage peak stormwater runoff flows and impacts from increased runoff volumes. Public Works. LAND-c-(1)
- Incorporate FEMA guidelines and suggested activities into local government plans and procedures for managing flood hazards. Community Development. LAND-c-(2) City Policy
- Provide an institutional mechanism to ensure that development proposals adjacent to floodways and in floodplains are referred to flood control districts and wastewater agencies for review and comment. Community Development. LAND-c-(3) City Policy
- Establish and enforce regulations concerning new construction (and major improvements to existing structures) within flood zones in order to be in compliance with federal requirements and, thus, be a participant in the Community Rating System of the *National Flood Insurance Program*. Community Development. City Policy. LAND-c-(4)

- Establish and enforce provisions (under subdivision ordinances or other means) that geotechnical and soil-hazard investigations be conducted and filed to prevent grading from creating unstable slopes, and that any necessary corrective actions be taken prior to development approval. Community Development. LAND-d-(1) City Policy
- Require that local government reviews of these investigations are conducted by appropriately trained and credentialed personnel. Community Development. LAND-d-(2) City Policy
- Establish and enforce grading, erosion, and sedimentation ordinances by requiring, under certain conditions, grading permits and plans to control erosion and sedimentation prior to development approval. Community Development. LAND-d-(3) City Policy
- Establish and enforce provisions under the creek protection, storm water management, and discharge control ordinances designed to control erosion and sedimentation. Community Development. LAND-d-(4) City Policy
- Establish requirements in zoning ordinances to address hillside development constraints, especially in areas of existing landslides. Community Development. LAND-d-(5) City Policy

- Discourage, add additional mitigation strategies, or prevent construction on slopes greater than a set percentage, such as 15%, due to landslide or wildfire hazard concerns. Community Development. LAND-e-(2)

- Prioritize retrofit of infrastructure that serves urban areas over constructing new infrastructure to serve outlying areas. Community Development. LAND-f-(1)
- Work to retrofit homes in older areas to provide safe housing close to job centers. Community Development. LAND-f-(2)
- Work to retrofit older downtown areas to protect architectural diversity and promote disaster-resistance. Community Development. LAND-f-(3)
- Maintain safeguards between development and existing users of hazardous materials, such as major industry, due to the potential for catastrophic releases due to an earthquake or terrorism. LPFD Fire Prevention, Community Development-Building & Planning. Covered by CUPA and current codes/ordinances. (LAND-f-5).

Incorporation into Existing Planning Mechanisms

The City has several planning mechanisms

- ◆ General plan safety element
- ◆ Capital Improvements Plan

The City has a Public Safety Element in its General Plan that includes a discussion of fire, earthquake, flooding, and landslide hazards. This plan was adopted as an implementation appendix to the Public Safety Element. In addition, the City enforces the requirements of the California Environmental Quality Act (CEQA), which, since 1988, requires mitigation for identified natural hazards. The City has used these pre-existing programs as a basis for identifying gaps that may lead to disaster vulnerabilities in order to work on ways to address these risks through mitigation.

Plan Update Process

As required Disaster Mitigation Act of 2000, the City of Livermore will update this plan annex at least once every five years, by participating in a multi-agency effort with ABAG and other agencies to develop a multi-jurisdictional plan.

The Livermore-Pleasanton Fire Department will ensure that monitoring of this Annex will occur. The plan will be monitored on an on-going basis. However, the major disasters affecting our City, legal changes, notices from ABAG as the lead agency in this process, and other triggers will be used. Finally, the Annex will be a discussion item on the agenda of the meeting of Department leaders at least once a year. At that meeting, the department heads will focus on evaluating the Annex in light of technological and political changes during the past year or other significant events. The Department leaders will be responsible for determining if the plan should be updated.

The City is committed to reviewing and updating this plan annex at least once every five years, as required by the Disaster Mitigation Act of 2000. The Livermore-Pleasanton Fire Department will contact ABAG four years after this plan is approved to ensure that ABAG plans to undertake the plan update process. If so, the City again plans to participate in the multi-jurisdictional plan. If ABAG is unwilling or unable to act as the lead agency in the multi-jurisdictional effort, other agencies will be contacted, including the County's Office of Emergency Services. Counties should then work together to identify another regional forum for developing a multi-jurisdictional plan.

The public will continue to be invited to be involved whenever the plan is updated and as appropriate during the monitoring and evaluation process. Prior to adoption of updates, the City will provide the opportunity for the public to comment on the updates. A public notice will be posted prior to the meeting to announce the comment period and logistics.

Mitigation Point of Contact

Name: Genevieve Pastor-Cohen
Title: Emergency Preparedness Manager
Mailing Address: Livermore-Pleasanton Fire Department
3560 Nevada Street, Pleasanton, CA 94566
Phone: (925) 454-2317
Email Address: gpastor-cohen@lpfire.org

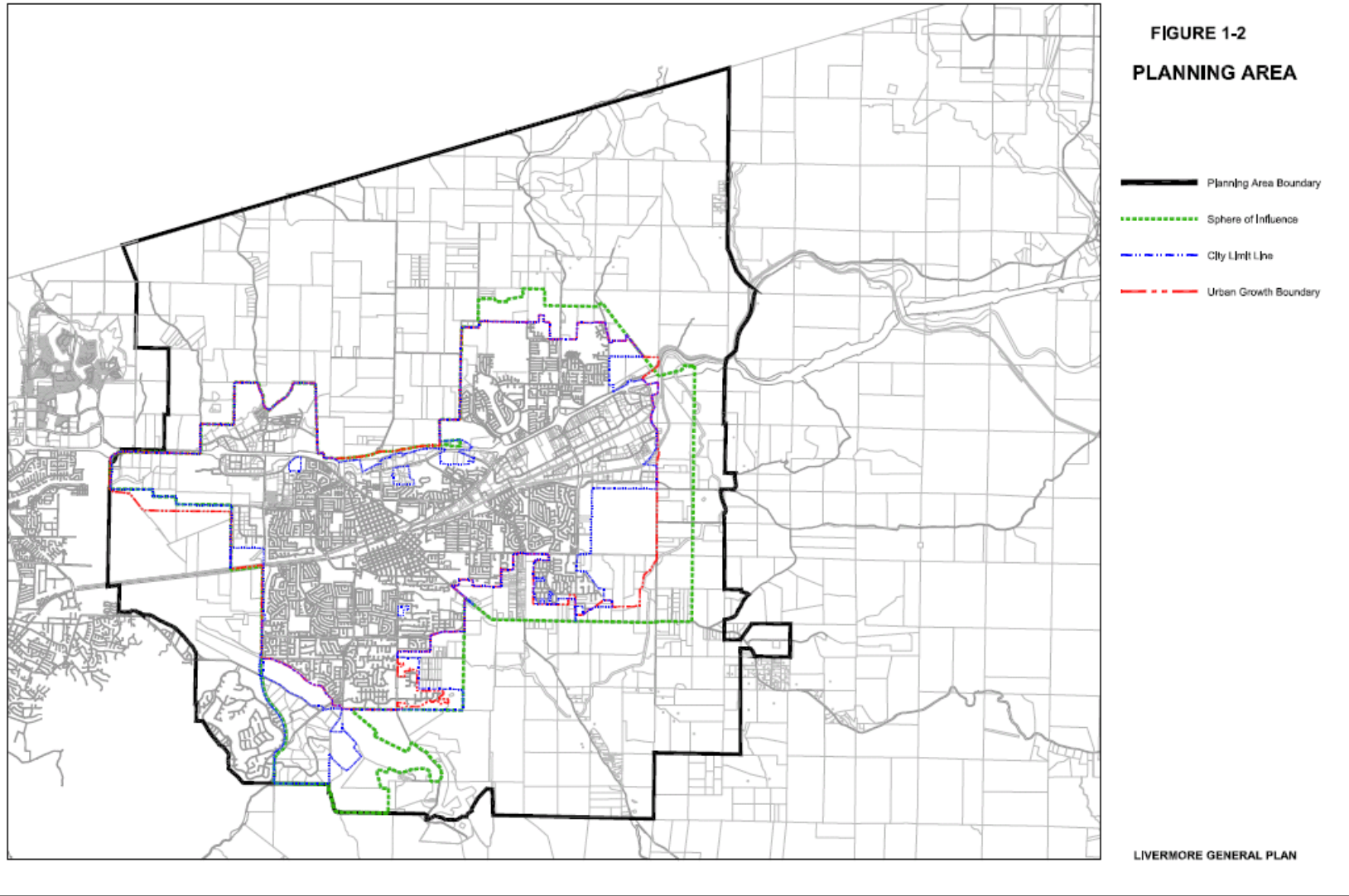
Alternate Point of Contact

Name: Stephen Kiefer
Title: Chief Building Official, Community Development
Mailing Address: City of Livermore
1052 S. Livermore Avenue, Livermore, CA 94550
Phone: (925) 960-4414
Email Address: sakiefer@ci.livermore.ca.us



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Exhibit A - Jurisdictional Boundaries





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Exhibit B - Earthquake Faults



Exhibit C - Public Review Announcement

CL22

212

Saturday, June 25, 2011

CLAS

PUBLIC NOTIFICATION

Legal Notice	Legal Notice	Legal Notice	Legal Notice	Legal Notice
		<p>City of Livermore Updated Hazard Mitigation Plan Available for Review and Comment</p> <p>The Livermore-Pleasanton Fire Department (LPFD) and the City of Livermore staff have updated the City's Hazard Mitigation Plan (HMP). The HMP updates the 2005 plan, addresses local hazard vulnerabilities, and lists numerous strategies to mitigate those hazards.</p>	<p>This HMP is available for a 30 day public review and comment period beginning Tuesday, July 5, 2011. The HMP is available on the Livermore-Pleasanton Fire Department's webpage at http://www.cityoflivermore.net/civica/filebank/blobdload.asp?BlobID=6601</p> <p>A hardcopy is available for review at the LPFD headquarters (3560 Nevada St., Pleasanton, 94566) during normal business hours.</p>	
			<p>Written comments on the HMP will be accepted by the Livermore-Pleasanton Fire Department through Friday, August 5, 2011, a 30-day review period. All comments should be addressed in writing to Genevieve Pastor-Cohen, Emergency Preparedness Manager, at the above headquarters address. After the close of the 30 day comment period, LPFD will incorporate pertinent public comments into the plan.</p> <p>If you have any questions regarding this notice, please contact Genevieve Pastor-Cohen at (925) 454-2317 or g.pastor-cohen@lpfire.org.</p> <p>Publication June 25, 2011 PT/VT#4055370 June 25, 2011</p>	

Exhibit D- Web-Page Posting



Livermore - Pleasanton Fire Department

Programs and Services
Emergency Preparedness
Pandemic Flu Preparedness

Emergency Preparedness



The LPFD is committed to providing a range of services related to emergency services. If you have any comments or questions on Livermore's Disaster Plan, please email gpastor-cohen@lpfire.org

Genevieve Pastor- Cohen
Emergency Preparedness
Manager
(925) 454-2317
gpastor-cohen@lpfire.org

Please review the links below for important information.

- [Learn Life-Saving Skills and Community Emergency Response Team \(CERT\)](#)
- [How to Prepare For a Disaster](#)
- [Disaster Preparedness Resources](#)
- [LPFD Family Disaster Preparedness Guide \(PDF\)*](#)
- [Shelter, Shut and Listen Brochure \(PDF\)*](#)
- [How To Create a Home Evacuation Plan](#)
- [What To Do In Case of Fire](#)

Terrorism Annex on file with the City of Livermore

City of Livermore Emergency Management Plan

City of Livermore's Updated Hazard Mitigation Plan (HMP) Available for Review and Comment

The HMP is available for public review and comment beginning Tuesday, July 5, 2011. [Link to HMP](#). The HMP updates the 2005 plan, addresses local hazard vulnerabilities, incorporates the Association of Bay Area Government's hazard data, and lists numerous strategies to mitigate those hazards. Written comments on the HMP will be accepted by the Livermore-Pleasanton Fire Department through Friday, August 5, 2011. All comments must be mailed to Genevieve Pastor-Cohen, Emergency Preparedness Manager, Livermore-Pleasanton Fire, 3560 Nevada Street, Pleasanton, CA 94566. Should questions arise regarding the HMP, please contact Ms. Pastor-Cohen at (925) 454-2317 or email gpastor-cohen@lpfire.org. Thank you.

Exhibit E - Documentation

Project Time Lines

Action	Date	Comments
Kick off Meeting with Planning Team	March 10, 2011	Present project time lines & tasks; begin receiving Planning Team input between planning sessions
Planning Team Progress Session	May 4, 2011	Emergency Manager receives input and begins updating plan elements.
Planning Team Reviews Draft	June 9, 2011	Draft plan emailed to team to review & comment
Prepare Draft Plan for Public Comment	June 2011	Coordinate posting of plan on website, announcement in newspapers, convene Disaster Council for input
Present to Disaster Council & Advertise for Public Comment	July 2011	30 days public comment period
Integrate Public Comments into Plan	August 2011	Emergency Manager processes and prepares final draft & sends to Planning Team
Receive Input for Final Draft from Planning Team	September 8, 2011	Planning Team completes review; Emergency Manager integrates revised data; and, prepares for submittal to ABAG
Submit Plan to ABAG	September 2011	ABAG reviews and submits to FEMA

Exhibit E - Documentation (continued)

City of Livermore
Hazard Mitigation Planning Team Meeting
Thursday, March 10, 2011
1 p.m.

Attendees: Rhonda Bishop, Livermore Police Department
Darren Greenwood, Public Works/Water Resources
Genevieve Pastor-Cohen, LPFD,
Hazard Mitigation Planning Group (HMPG) Project Manager

- 1) Project overview, overall goals and timelines: Pastor-Cohen welcomed the planning team members and provided an overview of the ABAG process. All agreed to the necessity of updating the plan.
- 2) Process: Pastor-Cohen outlined the planning team's timelines and how their experience, expertise, and knowledge of the City of Livermore's plans and processes will be integral to the project. Other key individuals who are not able to attend the planned meetings will be seen separately so the process can progress as planned.
- 3) FEMA recommendations: Pastor-Cohen reviewed a document sent by Danielle Hutchings, Earthquake and Hazards Program Coordinator for the Association of Bay Area Governments which outlined FEMA's recommendations for updating the plan.
- 4) Next Steps:
 - a) The planning team will review the mitigation strategies outlined in the 2005 plan and provide input as recommended by FEMA to the project manager.
 - b) Next meeting is on April 14, 2011 at the LPFD Fire Administration Bldg.



Exhibit E - Documentation (continued)

City of Livermore
Hazard Mitigation Planning Team Meeting
Wednesday May 4, 2011
2 p.m.

Attendees: Rhonda Bishop, Livermore Police Department
Darren Greenwood, Public Works/Water Resources
Steve Kiefer, Chief Building Official
Genevieve Pastor-Cohen, LPFD,
Hazard Mitigation Planning Group (HMPG) Project Manager

- 1) Reviewed 2005 plan for updates and questions.
- 2) Reviewed 2005 mitigation strategies for changes.
- 3) Action Items:
 - a) Darren Greenwood: Requested all references to “Public Services” be changed to “Public Works”; will provide titles of existing plans/studies referenced as supporting decisions in HMP; and will provide contents for “Drought” section of plan.
 - b) Steve Kiefer: Will continue to review 2005 plan updates; will provide explanation for increased urban land exposure; will review flood plain insurance section with Pam Lung
 - c) Rhonda Bishop: Will query police department staff for plans that were used to substantiate the mitigation strategies
 - d) Genevieve Pastor-Cohen: Review and update pertinent sections with LPFD Hazardous Materials Specialist, LLNL, Sandia Laboratories, Livermore Valley Joint Unified School District. Begin updating plan with input received.
- 4) Next Step:
 - a) Next meeting is June 9 and our goal is to review plan prior to the public comment period.



Exhibit E - Documentation (continued)

City of Livermore
Hazard Mitigation Planning Team Meeting
Thursday June 9, 2011
1:30 p.m.

Attendees: Rhonda Bishop, Livermore Police Department
Darren Greenwood, Public Works/Water Resources
Genevieve Pastor-Cohen, LPFD,
Hazard Mitigation Planning Group (HMPG) Project Manager

- 1) Introduction: . Attendees were welcomed.
- 2) Reviewed 2005 plan for updates and questions.
- 3) Reviewed 2005 mitigation strategies for changes.
- 4) Action Items:
 - a) Darren Greenwood: Requested all references to “Public Services” be changed to “Public Works”; will provide titles of existing plans/studies referenced as supporting decisions in HMP; and will provide contents for “Drought” section of plan.
 - b) Steve Kiefer: Will continue to review 2005 plan updates; will provide explanation for increased urban land exposure; will review flood plain insurance section with Pam Lung
 - c) Rhonda Bishop: Will query police department staff for plans that were used to substantiate the mitigation strategies
 - d) Genevieve Pastor-Cohen: Review and update pertinent sections with LPFD Hazardous Materials Specialist, LLNL, Sandia Laboratories, Livermore Valley Joint Unified School District. Begin updating plan with input received.
- 5) Next Step:
 - a) Next meeting is June 9 and our goal is to review plan prior to the public comment period.