



Annex to 2010 Association of Bay  
Area Governments  
Local Hazard Mitigation Plan  
*Taming Natural Disasters*

City of Benicia

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## Introduction

The City of Benicia is a small-sized city in southern Solano County, California. The City is uniquely situated on the Carquinez Straits and the northern end of the Benicia-Martinez bridge (see **Exhibit A**). According to the most recent census, the City had a population of 26,997 in the year 2010<sup>1</sup>. The 2009-2011 adopted City's budget is \$32 million, and it employs 236 full-time employees. City services include police, fire, and public works, water, wastewater, library, parks and community services.

## The Regional Planning Process

The City of Benicia participated in various ABAG workshops, conferences, and meetings, including:

- A sub-regional meeting to review draft priorities and reach consensus on priorities for mitigation – April 27, 2009;
- The Sewer Smart Summit to discuss mitigation strategies related to sewer lines and facilities – October 9, 2008
- A workshop on water system mitigation strategies – March 25, 2009
- City and county workshop to discuss overall priorities for mitigation – September 2009

In addition, Benicia participated in the development and prepared an Annex to the 2005 multi-jurisdictional Local Hazard Mitigation Plan.

Finally, the City provided information on facilities that are viewed as “critical” to ABAG.

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 has a Community Health and Safety Element in its General Plan, last updated in 2003, that discusses fire, earthquake, flooding, and landslide hazards. The City also has an Emergency Operations Plan that was last updated by City Council in December 2006 per Resolution No. 06-193. This Plan includes a detailed description of when the plan would be used, as well as the duties and responsibilities for each of the City's Departments during any emergency. In addition, the City routinely enforces the requirements of the California Environmental Quality Act (CEQA), which, since 1988, have required mitigation for identified natural hazards. The City's effort has focused on building on these pre-existing programs and identifying gaps that may lead to disaster vulnerabilities to work on ways to address these risks through mitigation.

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<sup>1</sup> For complete Census information, see <http://www.bayareacensus.ca.gov/>.

Key City staff met to identify and prioritize mitigation strategies appropriate for the City. Staff involved in these meetings included Fire, Police, Public Works & Community Development, and Parks & Community Services.

At the meeting, staff reviewed the City's general priorities, taking into account the priorities identified in 2007 and the 2010 regional priorities. In addition, staff identified appropriate departments for implementation of strategies, preliminary budgets and potential funding sources for strategies designed as "Existing Under-Funded" and "High" priority.

Typically, each person at the meeting was responsible for communicating existing efforts and thoughts on appropriate future action in their area of expertise. For example, the Public Works representative was most familiar with the needed mitigation actions for key critical facilities.

### *Review and Incorporation of Existing Information*

This process involved consideration of both the hazard and risk information developed by ABAG and discussed in the overall multi-jurisdictional Local Hazard Mitigation Plan, as well as the assessments of the age and construction type of structures owned by the City and described on pages 5 through 10. These meetings also discussed the Community Health and Safety Element, the Capital Improvement Program, and the City's Emergency Operations Plan already in place at the City, as well how these plans could be best integrated.

### *Process for Updating Plan Sections*

The City of Benicia participated in the 2005 multi-jurisdictional Local Hazard Mitigation Plan, originally adopting that Annex 2007. This Annex is an update of the Annex prepared for the 2005 plan. The lead in updating this Annex was taken by the Fire Department, based on feedback obtained from the staff who participated in the mitigation priority setting process.

The Planning Process section has been prepared to reflect the updated Annex. However, the process of assigning priorities was simplified because priorities had already been assigned in 2007.

The Hazard and Risk Assessment section has been updated to incorporate the new mapping compiled by ABAG for the overall multi-jurisdictional Local Hazard Mitigation Plan. The specific information for Benicia has also been updated to reflect additional mitigation activities that have occurred in the past four years.

The Mitigation Goals and Priorities section has been expanded to take a more comprehensive approach to mitigation.

The Plan Maintenance and Update section is essentially the same as the 2007 Annex, with the addition of some ideas for improving public participation in the process.

## *Public Meetings*

The City provided two opportunities for the public to comment on the DRAFT mitigation strategies selected by City staff:

1. An opportunity for public comments at a joint public meeting of the Planning Commission and Historic Preservation Review Commission on September 9, 2009 in City Council Chambers. For an excerpt from that meeting agenda, see **Exhibit B**.
2. An opportunity to comment on line when the draft mitigation strategies were published for public viewing on the City's website at <http://www.ci.benicia.ca.us/>.

Minor comments were received from the public meeting, which were incorporated into the strategies, if appropriate.

The City is committed to improving public participation when this plan is updated in five years. To improve this process, the City will consider writing letters to the editor of local newspapers in its service area to promote wider public knowledge of the process or working with local business and advocacy groups to conduct joint meetings.

The City Council will adopt the plan in a public meeting via an official Resolution upon pre-approval by FEMA. The mitigation strategies will become an implementation appendix of the Safety Element of the City of Benicia 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/>.

As applicants submit development projects for City review and approval, project-specific hazard mapping may be required. In some cases, the City requires specific mitigation measures to eliminate or mitigate impacts from these hazards. This information has been incorporated into the strategies matrix submitted to ABAG and FEMA.

In general, however, the City of Benicia does not face any natural disasters not listed in the ABAG multi-jurisdictional plan.

While the City of Benicia has undertaken a number of general hazard mapping activities since the first Community Health and Safety Element was prepared by the City, 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/>.

The City of Benicia has reviewed the hazards identified and ranked the hazards based on past disasters and expected future impacts. The conclusion is that earthquakes (particularly shaking and liquefaction, and wildfire (particularly wildland-urban-interface fire threat), flooding (including dam failure). Fault rupture and landslides pose a smaller, although still significant, risk for potential loss. Tsunami inundation is not an issue.

## Past Occurrences of Disasters (natural and human-induced)

The City of Benicia has experienced a number of different disasters over the last 50 years, including earthquakes, floods, droughts, wildfires, energy shortages, and severe storms.

The Loma Prieta Earthquake of 1989 is an example of the kind of large scale disaster which can strike the Bay Area. It killed 63 persons, injured 3,757, and displaced over 12,000 persons. With over 20,000 homes and businesses damaged and over 1,100 destroyed, this quake caused approximately \$6 Billion of damage. Reconstruction continues some two decades later as the replacement for Oakland-Bay Bridge is still several years from completion. While the City was not directly damaged in that earthquake, it interrupted the commutes of some of the City's residents.

More information on State and Federally declared disasters in Benicia can be found at <http://quake.abag.ca.gov/mitigation/ThePlan-D-Version-December09.pdf>

In addition to the declared disasters noted in **Appendix D**, the only locally significant incident that has impacted the City of Benicia in the past few years was in January 2007 when the EOC was activated due to localized flooding in the low-lying areas near downtown.

## Risk Assessment

### *Urban Land Exposure*

The City of Benicia examined the hazard exposure of Benicia urban land based on information in ABAG's website at <http://quake.abag.ca.gov/mitigation/landuse/>. 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 Benicia is increasing over time as the amount of urban land increases (In the last 5 years, 3 acres of land has become urban). The number of acres of urban land in the 100-year floodplain and liquefaction hazard decreased over the last 5 years to do changes in FEMA flood mapping and USGS liquefaction hazard mapping. That same FEMA mapping increased the number of acres in the 500-year floodplain. The area within the CGS map of fault surface rupture hazard had the largest percentage increase. These hazard areas are industrial and road/highway. The hazards with the highest acres of urban land include

earthquake shaking, liquefaction susceptibility, flooding, wildfire, wildland-urban interface fire threat, and dam inundation. The following table described the exposure of urban land within the City of Benicia to the various hazards.

<b>Exposure (acres of urban land)</b>			
<b>Hazard</b>	<b>2005</b>	<b>2010</b>	<b>Change</b>
<i>Total Acres of Urban Land</i>	5,347	5,350	3
Earthquake Faulting (within CGS zone)	18	25	7
Earthquake Shaking (within highest two shaking categories)	1,306	1,320	16
Earthquake-Induced Landslides (within CGS study zone) <sup>1</sup>	n/a	n/a	n/a
Liquefaction (within moderate, high, or very high liquefaction susceptibility) <sup>2</sup>	1,025	833	(192)
Flooding <sup>3</sup> (within 100 year floodplain)	599	524	(75)
Flooding (within 500 year floodplain)	38	85	47
Landslides (within areas of existing landslides)	41	41	41
Wildfire (subject to high, very high, or extreme wildfire threat) <sup>4</sup>	421	316	(105)
Wildland-Urban Interface Fire Threat	3,669	3,676	7
Dam Inundation (within inundation zone)	445	429	(16)
Tsunamis <sup>5</sup> (within inundation area)	not applicable		
Drought <sup>6</sup>	5,347	5,350	3

### *Infrastructure Exposure*

The City of Benicia 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/landuse/>. Of the 153 miles of roadway in the City of Benicia, the following are exposed to the various hazards analyzed.

A total of 15 miles of rail lines are located in the City, of which three miles are used by Amtrak). Note that the numbers of miles of water supply pipelines and sewer lines are similar to miles of roadway, but not identical. Miles of pipeline are reduced due from 2005 to 2010 due to improvements in data. Shaking (particularly as a mechanism to trigger ground failure) and wildland-urban-interface fire threat are the most significant exposures. However, WUI fire threat is not a significant hazard for pipelines because they are underground.

<sup>1</sup> The California Geological Survey has not yet mapped liquefaction and landsliding in Benicia.

<sup>2</sup> The decrease is due to better and more accurate mapping.

<sup>3</sup> The decrease is due to better and more accurate mapping.

<sup>4</sup> The decrease is due to better and more accurate mapping.

<sup>5</sup> Tsunami evacuation planning maps were not available inside the San Francisco Bay in 2005. This map became available in December 2009. Acres of exposed land are not an appropriate analysis for this hazard. It should be noted that this map is not a hazard map and should be used for evacuation planning purposes only. The inundation line represents the highest inundation at any particular location from a suite of tsunami sources. It is not representative of any single tsunami.

<sup>6</sup> The entire City of Benicia area is subject to drought.

<b>Exposure (miles of infrastructure)</b>						
<b>Hazard</b>	<b>Roadway</b>		<b>Pipelines</b>		<b>Rail (incl. Amtrak)</b>	
	<b>2005</b>	<b>2010</b>	<b>2005</b>	<b>2010</b>	<b>2005</b>	<b>2010</b>
<i>Total Miles of Infrastructure</i>	157	153	134	117	16	15
Earthquake Shaking (within highest two shaking categories)	28	29	26	26	6	7
Liquefaction Susceptibility (within moderate, high, or very high liquefaction susceptibility)	17	18	16	12	10	7
Liquefaction Hazard (within CGS study zone) <sup>1</sup>	n/a	n/a	n/a	n/a	n/a	n/a
Earthquake-Induced Landslides (within CGS study zone) <sup>2</sup>	n/a	n/a	n/a	n/a	n/a	n/a
Earthquake Faulting (within CGS zone) <sup>38</sup>	0	0	0	0	0	1
Flooding (within 100 year floodplain)	7	5	7	4	4	5
Flooding (within 500 year floodplain)	1	2	1	1	0	1
Landslides (within areas of existing landslides)	0	1	1	1	0	0
Wildfires (subject to high, very high, or extreme wildfire threat)	15	8	12	4	2	1
Wildland-Urban Interface Fire Threat	115	111	103	90	7	7
Dam Inundation (within inundation zone)	11	10	11	9	3	3
Tsunamis <sup>4</sup>	not applicable					
Drought <sup>5</sup>	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, schools, and locally-owned bridged located within the City of Benicia, as well as City-owned buildings based on the information on ABAG's website at <http://quake.abag.ca.gov/mitigation/pickcrit.html>. The City of Benicia 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 table shows the numbers of facilities exposed to each of the various hazards analyzed.

<sup>1</sup> 153 miles of roadway, 3 miles of transit, and 15 miles of rail are outside the area that has been evaluated by CGS for this hazard

<sup>2</sup> The California Geological Survey has not yet mapped liquefaction and landsliding in Benicia.

<sup>3</sup> The California Geological Survey has not yet mapped liquefaction and landsliding in Benicia.

<sup>4</sup> Tsunami evacuation planning maps were not available inside the San Francisco Bay in 2005. This map became available in December 2009. Miles of exposed infrastructure is not an appropriate analysis for this hazard. It should be noted that this map is not a hazard map and should be used for evacuation planning purposes only. The inundation line represents the highest inundation at any particular location from a suite of tsunami sources. It is not representative of any single tsunami.

<sup>5</sup> Drought is not a hazard for roadways.



Exposure (number of facility types)								
Hazard	Health Care Facilities		Schools		City-Owned critical facilities		Locally owned bridges and interchanges	
	2005	2010	2005	2010	2005	2010	2005	2010
<i>Total Number of Facilities</i>	1	1	9	9	39	35	12	11
Earthquake Shaking (within highest two shaking categories)	1	1	1	3	17	17	2	3
Liquefaction Susceptibility (within moderate, high, or very high liquefaction susceptibility)	0	1	0	0	8	6	7	3
Liquefaction Hazard (within CGS study zone) <sup>1</sup>	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Earthquake-Induced Landslides (within CGS study zone) <sup>2</sup>	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Earthquake Faulting (within CGS zone)	0	0	0	0	0	0	0	0
Flooding (within 100 year floodplain)	0	0	0	0	0	0	1	3
Flooding (within 500 year floodplain)	0	0	0	0	0	0	2	1
Landslides (within areas of existing landslides)	0	0	0	0	0	0	0	0
Wildfires (subject to high, very high, or extreme wildfire threat)	0	0	0	0	5	0	2	0
Wildland-Urban Interface Fire Threat	0	0	9	9	25	20	5	5
Dam Inundation	0	0	1	3	6	1	1	1
Sea Level Rise (exposed to 16in sea level rise) <sup>3</sup>	-	0	-	0	-	0	-	1
Sea Level Rise (exposed to 55in sea level rise) <sup>4</sup>	-	0	-	0	-	1	-	1
Tsunamis <sup>5</sup> (within inundation area)	-	0	-	0	-	0	-	0
Drought <sup>1</sup>	-	-	-	-	-	-	-	-

<sup>1</sup> The California Geological Survey has not yet mapped liquefaction and landsliding in Benicia.

<sup>2</sup> The California Geological Survey has not yet mapped liquefaction and landsliding in Benicia.

<sup>3</sup> Sea level rise data was not available in 2005

<sup>4</sup> Sea level rise data was not available in 2005

<sup>5</sup> Tsunami evacuation planning maps were not available inside the San Francisco Bay in 2005. This map became available in December 2009. It should be noted that this map is not a hazard map and should be used for evacuation planning purposes only. The inundation line represents the highest inundation at any particular location from a suite of tsunami sources. It is not representative of any single tsunami. However, no City-owned critical facilities are located in this evacuation planning zone.

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<sup>6</sup> Drought will not affect locally owned facilities directly.

Earthquakes (particularly shaking and, to a lesser extent, liquefaction) are the most significant hazard exposures to City-owned facilities. More information on the retrofitting of the Police Station, City Hall, and other critical facilities is found on pages 12 and 13. Since the City Fire Station was constructed in the early 1990s, no seismic retrofitting is needed. Finally, the Clock Tower building was seismically retrofitted about 20 years ago following the Loma Prieta earthquake. Wildland-Urban-Interface Fire Threat is also of significance to City-owned facilities.

### *Repetitive Loss Properties*

In spite of the areas of the City located in flood-prone areas, there are no repetitive loss properties in the City based on the information at <http://quake.abag.ca.gov/mitigation/pickflood.html>. Thus, the City also had no repetitive loss property that was outside the flood plain.

### *Other Risks*

The City plans to continue to work with ABAG to improve the risk assessment information being compiled by ABAG, including assessing the overall status of unreinforced masonry building and soft-story building inventory and retrofit efforts.

Benicia's downtown contains many historic buildings. The City served as the first Capital of the State of California.

The City identified 18 historic unreinforced masonry buildings and 21 non-historic unreinforced masonry buildings. Of these 39 buildings, only one has been retrofitted. The City has not adopted specific retrofit standards. There is no mandatory retrofit of these buildings, even if the owner applies for a change of occupancy permit. The remaining 38 potentially hazardous buildings have not yet been retrofitted.

Of the 11,306 housing units in the City, 67% are detached single-family homes, and another 10.2% are in single-family attached or duplexes (based on the 2010 Census). A total of 20.9% of the housing units are in buildings containing three or more units. Because Benicia is not a dense urban city, few, if any, of these buildings have parking underneath the residential units. However, Benicia has not conducted a formal soft-story inventory, and it is currently unknown if soft-story residential buildings are a significant hazard.

An estimated 2% of the housing stock is in mobile homes, based on the 2010 Census. However, the City currently has no program to encouraging retrofitting of these structures. The Building Division has no permitting authority over these structures.

Finally, the City has no program to identify or encourage retrofitting of potentially hazardous tilt-up concrete structures. The vast majority of the tilt-ups were built after 1988. Most of these buildings are in the industrial parts of the City.

The City plans to continue 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.

## National Flood Insurance Program

The initial FHBM map of the City of Benicia for participation in the National Flood Insurance Program (NFIP) was prepared in 1977. The initial Flood Insurance Rate Map was identified in 1977.

The provisions of the program are contained in Municipal Code Sections 15.40 to 15.56. The ordinance adding those sections to the Code was passed in 1988. The key sections in the Chapter include:

- 15.40.050 Definitions.
- 15.40.060 Lands to which this division applies.
- 15.40.070 Basis for establishing the areas of special flood hazard.
- 15.40.080 Compliance.
- 15.40.090 Abrogation and greater restrictions.
- 15.40.100 Interpretation.
- 15.40.110 Warning and disclaimer of liability.
  
- 15.44.010 Establishment of development permit.
- 15.44.012 Fees established.
- 15.44.020 Designation of the floodplain administrator.
- 15.44.030 Duties and responsibilities of the floodplain administrator.
  
- 15.48.010 Standards of construction.
- 15.48.020 Standards for utilities.
- 15.48.030 Standards for subdivisions.
- 15.48.040 Standards for manufactured homes.
- 15.48.050 Floodways.
- 15.48.060 Coastal high hazard areas.
  
- 15.52.010 Variance – General.
  
- 15.56.010 Appeals to the building department board of appeals.
- 15.56.020 Appeals to the city council.

The City of Benicia has effectively implemented the NFIP since the community joined in the program. FEMA has reviewed the City's program on several occasions. New development

continues to meet the required standards identified in the Municipal Code sections. There are no significant hurdles for the City in effectively implementing the NFIP.

In the City, the areas of most significant flood risk are properties in the non-residential areas of the City, along Channel Road and Bayshore Road. Based on ABAG and county assessor data on the properties in the flood plain, there are 39 properties in the 100-year floodplain with a total value of \$94 million. Of these, 14 properties, with an estimated value of \$82 million, are industrial. As noted earlier, there have been no repetitive loss claims.

Currently, the City does not participate in the Community Rating System. This decision is primarily due to the lack of staff to oversee and implement the program.

## 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 Benicia in designing its mitigation program.

Among the goals of the city, as expressed in its General Plan – Community Health and Safety Element (1999) are to “Minimize harm from geologic hazards,” to “Accommodate runoff from existing and future development,” to “Prevent property damage caused by flooding,” and to “Reduce fire hazards.”

## Mitigation Activities and Priorities

### *Evaluation of Progress from 2007 Plan*

In 2006-2007, mitigation actions and priorities were identified. Key strategies that have resulted in significant progress in the past four years are listed below, along with the responsible agency, the action taken, and the current status of progress.

GOVT-a-2 - Retrofit or replace critical facilities that are shown to be vulnerable to damage in natural disasters.

Responsible Agency – Police and Fire with Building Division

Action Identified in 2007 Annex as “High Priority” – Police facility and emergency city dispatch center is vulnerable to natural disaster (earthquake) and is a under-funded project. Estimated cost for replacement: \$15 million

Status – The City decided to retrofit, rather than replace, the Police facility at a cost of approximately \$1.2 million. The retrofit was completed in 2006-2007.

GOVT-a-12 - Prior to acquisition of property to be used as a critical facility, conduct a study to ensure the absence of significant hazards.

Responsible Agency – Public Works with Building Division  
Action Identified in 2007 Annex as “Existing Priority”

Status – The City entered into a long-term lease with the Benicia School District on an existing school facility. The City paid approximately \$10 million to upgrade the facility, including \$2.6 million for seismic retrofitting. Work was completed in 2011. The facility is now a community center.

INFR-b-3 - Include “areas subject to high ground shaking, earthquake-induced ground failure, and surface fault rupture” in the list of criteria used for determining a replacement schedule for pipelines (along with importance, age, type of construction material, size, condition, and maintenance or repair history).

Responsible Agency – Public Works

Action – On-going, incorporated in pipe replacement schedule

Status – In progress; in the past 5 years, the City has replaced a few miles of sewer and water pipelines at a cost of approximately \$500,000.

In approximately 1987, the City passed an ordinance requiring that all new or replacement roofs have a class B fire rating. As of 2011, all City-owned buildings have a Class B rated or better roof.

### *Future Mitigation Actions and Priorities*

As a participant in the 2010 ABAG multi-jurisdictional planning process, the staff of Benicia 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 Benicia’s 2005 strategies, to identify and prioritize additional mitigation strategies to update the list.

These draft priorities were submitted to City Directors for review. **The draft priorities will be provided to the City Council for adoption pending pre-approval of this LHMP by FEMA.**

The City planning team also prioritized specific mitigation tasks for the next 5 years.

GOVT-a-2 - Retrofit or replace critical facilities that are shown to be vulnerable to damage in natural disasters.

Responsible Agency – Police and Fire with Building Division

Action– Retrofit City Hall

Comments – While retrofit of the office portion of City Hall has been completed in 2000 at a cost of \$200,000, the City Council Chambers still need to be retrofitted. The anticipated cost of this retrofit is approximately \$300,000 to \$500,000.

Status – Currently underfunded. While this action is a high priority during the next five years, it is dependent on finding adequate funding that has not yet been obtained. Funds are being sought.

## *On-Going Mitigation Strategy Programs*

The City has many on-going mitigation programs that help create a more disaster-resistant region. The following list highlights those programs identified as *Existing Programs* in the mitigation strategy spreadsheet.

### *Economy*

- Assist in ensuring adequate hazard disclosure by working with real estate agents to improve enforcement of real estate disclosure requirements for commercial and industrial properties with regard to seven official natural hazard zones: 1) Special Flood Hazard Areas (designated by FEMA), 2) Areas of Potential Flooding from dam failure inundation, 3) Very High Fire Hazard Severity Zones, 4) Wildland Fire Zones, 5) Earthquake Fault Zones (designated under the Alquist-Priolo Earthquake Fault Zoning Act), and the 6) Liquefaction and Landslide Hazard Zones (designated under the Seismic Hazard Mapping Act). (ECON-a-1) - City of Benicia Public Works & Community Development
- Require engineered plan sets for voluntary or mandatory soft-story seismic retrofits by private owners until a standard plan set and construction details become available. (ECON-b-1) - City of Benicia Public Works & Community Development; California Building Code
- Continue to actively implement existing State law that requires cities and counties to maintain lists of the addresses of unreinforced masonry buildings and inform private property owners that they own this type of hazardous structure. (ECON-c-1) - City of Benicia Public Works & Community Development
- As required by State law, require private owners to inform all existing tenants that they may need to be prepared to work elsewhere following an earthquake even if the building has been retrofitted, because it has probably been retrofitted to a life-safety standard, not to a standard that will allow occupancy following major earthquakes. (ECON-c-4) - City of Benicia Public Works & Community Development
- Increase efforts to reduce hazards in existing private development in 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. (ECON-e-1) - City of Benicia Fire, Public Works & Community Development
- Tie public education on defensible space and a comprehensive defensible space ordinance to a field program of enforcement. (ECON-e-2) - City of Benicia Fire, Public Works & Community Development
- Require that new privately-owned business and office buildings in high fire hazard areas be constructed of fire-resistant building materials 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. (ECON-e-3) - City of Benicia Fire, Public Works & Community Development
- Adopt and 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

of private buildings. (ECON-e-4) - City of Benicia Fire, Public Works & Community Development

- Create a mechanism to enforce provisions of the *California Building and Fire Codes* and other local codes that require the installation of smoke detectors and fire-extinguishing systems on existing privately-owned buildings by making installation a condition of (a) finalizing a permit for any work valued at over a fixed amount and/or (b) on any building over 75 feet in height, and/or (b) as a condition for the transfer of property. (ECON-e-5) - City of Benicia Fire, Public Works & Community Development
- Compile a list of privately-owned high-rise and high-occupancy buildings that are deemed, due to their age or construction materials, to be particularly susceptible to fire hazards, and determine an expeditious timeline for the fire-safety inspection of all such structures. (ECON-e-9) - City of Benicia Building, Fire; No structures in this category
- Conduct periodic fire-safety inspections of all privately-owned commercial and industrial buildings. (ECON-e-10) - City of Benicia Fire
- Balance the needs for private commercial and industrial development against the risk from potential flood-related hazards. (ECON-f-2) - City of Benicia Public Works & Community Development; Ongoing during development review process
- Ensure that new private development pays its fair share of improvements to the storm drainage system necessary to accommodate increased flows from the development, or does not increase runoff by draining water to pervious areas or detention facilities. (ECON-f-3) - City of Benicia Public Works & Community Development; The City's development review process includes an analysis of storm drainage issues, including fees and necessary system improvements. The City also imposes impact fees to fund necessary infrastructure improvements
- Provide sandbags and plastic sheeting to private businesses in anticipation of rainstorms, and deliver those materials to vulnerable populations upon request. (ECON-f-4) - City of Benicia Public Works & Community Development; Available during flood emergencies
- Provide information to private business on locations for obtaining sandbags and deliver those sandbags to those various locations throughout a city and/or county. (ECON-f-5) - City of Benicia Public Works & Community Development; Available during flood emergencies
- Apply floodplain management regulations for private development in the floodplain and floodway. (ECON-f-6) - City of Benicia Public Works & Community Development; City Floodplain Ordinance, Zoning Ordinance, General Plan
- Encourage private business owners to participate in building elevation programs within flood hazard areas. (ECON-f-7) - City of Benicia Public Works & Community Development; Done as needed. Very few businesses in flood hazard areas
- Increase efforts to reduce landslides and erosion in existing and future development by improving appropriate code enforcement and use of applicable standards for private property, 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. (ECON-g-1) - City of Benicia Building, Planning, Engineering; public education

- Continue to require that all new privately-owned commercial and industrial buildings be constructed in compliance with requirements of the most recently adopted version of the *California Building Code*. (ECON-h-1) - City of Benicia Building; California Building Code
- Conduct appropriate employee training and support continued education to ensure enforcement of construction standards for private development. (ECON-h-2) - City of Benicia Building
- Develop and enforce a repair and reconstruction ordinance to ensure that damaged buildings are repaired in an appropriate and timely manner and retrofitted concurrently. This repair and reconstruction ordinance should apply to all public and private buildings, and also apply to repair of all damage, regardless of cause. See <http://quake.abag.ca.gov/recovery/info-repair-ord.html>. (ECON-i-5) - City of Benicia Building; California Building Code, but could adopt the appendix separately.
- Provide information to private business owners and their employees on the availability of interactive hazard maps on ABAG's web site. (ECON-j-1) - City of Benicia Fire, Planning; City's website
- 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 by groups other than your own agency. ABAG plans to continue to improve the quality of those materials over time. (ECON-j-7) - City of Benicia Building, Fire; Through CERT and City website
- Develop a "Maintain-a-Drain" campaign, similar to that of the City of Oakland, encouraging private businesses and residents to keep storm drains in their neighborhood free of debris. (ECON-j-8) - City of Benicia Public Works & Community Development; "Only Rain Down the Drain"
- Distribute appropriate materials related to disaster mitigation and preparedness to private business owners. Appropriate materials are (1) culturally appropriate and (2) suitable for special needs populations. For example, such materials are available on the <http://www.preparenow.org> website and from non-governmental organizations that work with these communities on an on-going basis. (ECON-j-13) - City of Benicia Fire

### ***Education***

- Work cooperatively with the American Red Cross, cities, counties, and non-profits to set up memoranda of understanding for use of education facilities as emergency shelters following disasters. (EDUC-b-1) – Benicia Unified School District and City of Benicia Fire
- 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. (EDUC-b-2) – Benicia Unified School District and City of Benicia Fire



- 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. (EDUC-b-3) – Benicia Unified School District and City of Benicia Fire
- Encourage employees of schools to have family disaster plans and conduct mitigation activities in their own homes. (EDUC-c-1) – Benicia Unified School District and City of Benicia Fire
- Develop plans, in conjunction with fire jurisdictions, 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. (EDUC-c-2) – Benicia Unified School District and City of Benicia Fire

### ***Environment***

- Continue to enforce State-mandated requirements, such as the *California Environmental Quality Act*, to ensure that mitigation activities for hazards, such as seismic retrofits and vegetation clearance programs for fire threat, 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. (ENVI-a-1) – City of Benicia Public Works & Community Development and State & Federal Resource Agencies. Issues are addressed on a case-by-case basis as mitigation programs are designed and implemented.
- 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. (ENVI-a-2) – City of Benicia Public Works & Community Development, State & Federal Resource Agencies; Issues are addressed on a case-by-case basis as mitigation programs are designed and implemented
- 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. (ENVI-a-3) – City of Benicia Public Works & Community Development, State & Federal Resource Agencies; Issues are addressed on a case-by-case basis as mitigation programs are designed and implemented. City's Development Review process includes an analysis of environmental impacts
- Balance the need for the smooth flow of storm waters versus the need to maintain wildlife habitat by developing and implementing a comprehensive Streambed Vegetation Management Plan that ensures the efficacy of flood control efforts, mitigates wildfires and maintains the viability of living rivers. (ENVI-a-5) – City of Benicia Public Works & Community Development, State & Federal Resource Agencies; Issues are addressed on a case-by-case basis as mitigation programs are designed and implemented
- 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. (ENVI-a-6) – City of Benicia Public Works & Community Development, State

& Federal Resource Agencies; Ongoing program incorporate mitigation into project design during development review process

- 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. (ENVI-a-7) – City of Benicia Public Works & Community Development; Ongoing program incorporate mitigation into project design during development review process
- Explore ways to require that hazardous materials stored in the flood zone be elevated or otherwise protected from flood waters. (ENVI-a-8) – City of Benicia Building, Fire; Reviewed in permit process and inspections
- Provide information on hazardous waste disposal and/or drop off locations. (ENVI-a-10) – All City of Benicia departments
- When remodeling existing government and infrastructure buildings and facilities, remove asbestos to speed up clean up of buildings so that they can be reoccupied more quickly. (ENVI-a-11) – City of Benicia Building, Parks & Community Services
- Stay informed of scientific information compiled by regional and state sources on the subject of rising sea levels and global warming, especially on additional actions that local governments can take to mitigate this hazard including special design and engineering of government-owned facilities in low-lying areas, such as wastewater treatment plants, ports, and airports. (ENVI-b-1) – City of Benicia Public Works & Community Development; Ongoing
- Inventory global warming emissions in your own local government's operations and in the community, set reduction targets and create an action plan. (ENVI-b-2) – City of Benicia Public Works & Community Development; Reduction targets adopted in September 2008. Climate Action Plan adopted in September 2009

### ***Government***

- Clarify to workers in critical facilities and emergency personnel, as well as to elected officials and the public, the extent to which the facilities are expected to perform only at a life safety level (allowing for the safe evacuation of personnel) or are expected to remain functional following an earthquake. (GOVT-a-3) - City of Benicia Fire, Police, City Manager; Ongoing training programs, including classes, seminars, and educational materials.
- 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. (GOVT-a-5) - City of Benicia Fire, Police, City Manager; Ongoing program of drills, training, cooperative planning efforts.
- Ensure that new government-owned facilities comply with and are subject to the same or more stringent regulations as imposed on privately-owned development. (GOVT-a-10) – City of Benicia Public Works & Community Development, Fire, Parks & Community Services
- 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. (GOVT-a-11) – City of Benicia Public Works & Community Development, Fire, Parks & Community Services

- Prior to acquisition of property to be used as a critical facility, conduct a study to ensure the absence of significant structural hazards and hazards associated with the building site. (GOVT-a-12) – City of Benicia Public Works & Community Development, Fire, Parks & Community Services
- Ensure that any regulations imposed on private-owned businesses related to repair and reconstruction (see Economy Section) are enforced and imposed on local government's own buildings and structures. (GOVT-a-13) – City of Benicia Public Works & Community Development, Fire, Parks & Community Services
- 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. (GOVT-c-13) – City of Benicia Fire, Police, Solano County; Mutual Aid agreements in place
- Install alert and warning systems for rapid evacuation or shelter-in-place. Such systems include outdoor sirens and/or reverse-911 calling systems. (GOVT-c-14) – City of Benicia Fire, Police; A system with 7 sirens is in place. Cable TV and AM radio used for notification
- 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. (GOVT-c-16) – City of Benicia Building, Fire; Building Code, Fire Code
- Monitor weather during times of high fire risk using, for example, weather stations tied into police and fire dispatch centers. (GOVT-c-17) – City of Benicia Fire; Ongoing monitoring by 911 Dispatch and Patrol. Weather stations at fire stations
- Promote information sharing among overlapping and neighboring local governments, including cities, counties, and special districts, as well as utilities. (GOVT-d-1) All City of Benicia Departments; Ongoing - includes cooperation with ABAG and State agencies
- Recognize that emergency services is more than the coordination of police and fire response; it also includes planning activities with providers of water, food, energy, transportation, financial, information, and public health services. (GOVT-d-2) – City of Benicia City Manager, Public Works & Community Development, Fire, Police; Ongoing - includes cooperation with ABAG and State agencies
- As new flood-control projects are completed, request that FEMA revise its flood-insurance rate maps and digital Geographic Information System (GIS) data to reflect flood risks as accurately as possible. (GOVT-d-4) – City of Benicia Public Works & Community Development, Fire; Ongoing
- Participate in FEMA's National Flood Insurance Program. (GOVT-d-5) – City of Benicia Public Works & Community Development, Fire; Ongoing
- 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. (GOVT-d-7) – City of Benicia Solano County; Emergency Response Plan at major sources
- 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. (GOVT-d-10) – City of Benicia Public Works & Community Development, Fire; Done, if applicable



## ***Health***

- Ensure health care facilities are adequately prepared to care for victims with respiratory problems related to smoke and/or particulate matter inhalation. (HEAL-a-3) – City of Benicia Fire and Solano County.
- Ensure these health care facilities have the capacity to shut off outside air and be self-contained. (HEAL-a-4) – City of Benicia Fire and Solano County.

## ***Housing***

- Develop a plan for short-term sheltering of residents of your community in conjunction with the American Red Cross. (HSNG-a-3) – City of Benicia Fire.
- 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 Plan Set A 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. (HSNG-b-1) – City of Benicia Building; Minimum standards in Construction Framing provisions of California Building Code
- Require engineered plan sets for seismic retrofitting of heavy two-story homes with living areas over garages, as well as for split level homes (that is, homes not covered by Plan Set A), until standard plan sets and construction details become available. (HSNG-b-2) – City of Benicia Building; California Building Code
- Require engineered plan sets for seismic retrofitting of homes on steep hillsides (because these homes are not covered by Plan Set A). (HSNG-b-3) – City of Benicia Building; California Building Code
- 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, including application of Plan Set A. (HSNG-b-4) – City of Benicia Building; California Building Code
- 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 or additional classes that might be offered by the CALBO Training Institute) on retrofitting of single-family homes. (HSNG-b-5) – City of Benicia Building
- Require engineered plan sets for voluntary or mandatory soft-story seismic retrofits by private owners until a standard plan set and construction details become available. (HSNG-c-1) – City of Benicia Building; California Building Code
- Provide technical assistance in seismically strengthening privately-owned soft-story structures. (HSNG-c-9) – City of Benicia Building; Building staff works with contracts and property owners to identify ways to better address seismic safety concerns
- Continue to actively implement existing State law that requires cities and counties to maintain lists of the addresses of unreinforced masonry buildings and inform private property owners that they own this type of hazardous structure. (HSNG-d-1) – City of Benicia Building
- As required by State law, require private owners to inform all existing tenants that they may need to be prepared to live elsewhere following an earthquake even if the building

has been retrofitted, because it has probably been retrofitted to a life-safety standard, not to a standard that will allow occupancy following major earthquakes. (HSNG-d-4) – City of Benicia Building

- Continue to require that all new housing be constructed in compliance with requirements of the most recently adopted version of the *California Building Code*. (HSNG-f-1) – City of Benicia Building
- 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. (HSNG-f-2) – City of Benicia Building
- Increase efforts to reduce hazards in existing private development in 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. (HSNG-g-1) – City of Benicia Fire
- Tie public education on defensible space and a comprehensive defensible space ordinance to a field program of enforcement. (HSNG-g-2) – City of Benicia Fire
- 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. Note - See Structural Fire Prevention Field Guide for Mitigation of Wildfires at <http://osfm.fire.ca.gov/structural.html>. (HSNG-g-3) – City of Benicia Building, Fire
- Consider fire safety, evacuation, and emergency vehicle access when reviewing proposals to add secondary units or additional residential units in wildland-urban-interface fire-threatened communities or in areas exposed to high-to-extreme fire threat. (HSNG-g-5) – City of Benicia Building, Fire
- Adopt and 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 of private buildings. (HSNG-g-6) – City of Benicia Building, Fire
- Create a mechanism to enforce provisions of the *California Building and Fire Codes* and other local codes that require the installation of smoke detectors and fire-extinguishing systems on existing residential buildings by making installation a condition of (a) finalizing a permit for any work valued at over a fixed amount and/or (b) on any building over 75 feet in height, and/or (b) as a condition for the transfer of property. (HSNG-g-7) – City of Benicia Building, Fire
- Require fire sprinklers in new homes located more than 1.5 miles or a 5-minute response time from a fire station or in an identified high hazard wildland-urban-interface wildfire area. (HSNG-g-12) – City of Benicia Building, Fire
- Require fire sprinklers in all new or substantially remodeled multifamily housing, regardless of distance from a fire station. (HSNG-g-13) – City of Benicia Building, Fire
- Require sprinklers in all mixed use development to protect residential uses from fires started in non-residential areas. (HSNG-g-14) – City of Benicia Building, Fire; California Building Code

- Conduct periodic fire-safety inspections of all multi-family buildings, as required by State law. (HSNG-g-16) – City of Benicia Fire
- Create a mechanism to require the bracing of water heaters and flexible couplings on gas appliances, and/or (as specified under "**b. Single-family homes vulnerable to earthquakes**" above) the bolting of homes to their foundations and strengthening of cripple walls to reduce fire ignitions due to earthquakes. (HSNG-g-18) – City of Benicia Building; California Building Code
- Ensure that new private development pays its fair share of improvements to the storm drainage system necessary to accommodate increased flows from the development, or does not increase runoff by draining water to pervious areas or detention facilities. (HSNG-h-3) – City of Benicia Public Works, Building
- Provide sandbags and plastic sheeting to residents in anticipation of rainstorms, and deliver those materials to vulnerable populations upon request. (HSNG-h-4) – City of Benicia Public Works & Community Development; Corporation Yard provides sandbags during an event
- 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. (HSNG-h-5) – City of Benicia Public Works & Community Development; Corporation Yard provides sandbags during an event
- Apply floodplain management regulations for private development in the floodplain and floodway. (HSNG-h-6) – City of Benicia Public Works & Community Development; Ongoing during project review
- Ensure that new subdivisions are designed to reduce or eliminate flood damage by requiring lots and rights-of-way be laid out for the provision of approved sewer and drainage facilities, providing on-site detention facilities whenever practicable. (HSNG-h-7) – City of Benicia Public Works & Community Development; Ongoing during project review
- Encourage home and apartment owners to participate in home elevation programs within flood hazard areas. (HSNG-h-8) – City of Benicia Building; When applicable, though there are few residential units in flood areas
- Encourage owners of properties in a floodplain to consider purchasing flood insurance. For example, point out that most homeowners' insurance policies do not cover a property for flood damage. (HSNG-h-10) – City of Benicia Building; When applicable, though there are few residential units in flood areas
- Increase efforts to reduce landslides and erosion in existing and future development by improving appropriate code enforcement and use of applicable standards for private property, 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. (HSNG-

i-1) – City of Benicia Public Works & Community Development; Ongoing during project review

- Develop and enforce a repair and reconstruction ordinance to ensure that damaged buildings are repaired in an appropriate and timely manner and retrofitted concurrently. This repair and reconstruction ordinance should apply to all public and private buildings, and also apply to repair of all damage, regardless of cause. See <http://quake.abag.ca.gov/recovery/info-repair-ord.html>. (HSNG-j-1) – City of Benicia Building California Building Code
- Use disaster anniversaries, such as April (the 1906 earthquake), September (9/11), and October (Loma Prieta earthquake and Oakland Hills fire), to remind the public of safety and security mitigation activities. (HSNG-k-5) – City of Benicia City Manager, Fire
- Train homeowners to locate and shut off gas valves if they smell or hear gas leaking. (HSNG-k-10) – City of Benicia Fire, PG&E; Educational materials available
- 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. (ABAG plans to continue to improve the quality of those materials over time.) (HSNG-k-12) – City of Benicia Building, Fire; Through CERT and City website
- Develop a “Maintain-a-Drain” campaign, similar to that of the City of Oakland, encouraging private businesses and residents to keep storm drains in their neighborhood free of debris. (HSNG-k-13) – City of Benicia Public Works & Community Development; "Only Rain Down the Drain"
- Inform shoreline-property owners of the possible long-term economic threat posed by rising sea levels. (HSNG-k-15) – City of Benicia Building, Fire; Done as needed
- Distribute appropriate materials related to disaster mitigation and preparedness to residents. Appropriate materials are (1) culturally appropriate and (2) suitable for special needs populations. For example, such materials are available on the <http://www.preparenow.org> website and from non-governmental organizations that work with these communities on an on-going basis. (HSNG-k-16) – City of Benicia Fire

### ***Infrastructure***

- If a dam owner, comply with State of California and federal requirements to assess the vulnerability of dams to damage from earthquakes, seiches, landslides, liquefaction, or security threats. (INFR-a-2) – City of Benicia Public Works & Community Development
- Encourage the cooperation of utility system providers and cities, counties, and special districts, and PG&E to develop strong and effective mitigation strategies for infrastructure systems and facilities. (INFR-a-3) – City of Benicia Public Works & Community Development; Ongoing program
- Support and encourage efforts of other (lifeline infrastructure) agencies as they plan for and arrange financing for seismic retrofits and other disaster mitigation strategies. (For example, a city might pass a resolution in support of a transit agency’s retrofit program.) (INFR-a-5) – City of Benicia Public Works & Community Development, Fire; City owns the water utility and works with Solano County and other cities on water supply. Fire has hoses available for bridging pipeline gaps in potable water supply.
- Develop a plan for speeding the repair and functional restoration of water and wastewater systems through stockpiling of shoring materials, temporary pumps, surface pipelines, portable hydrants, and other supplies, such as those available through the Water



/Wastewater Agency Response Network (WARN). Communicate that plan to local governments and critical facility operators. (INFR-a-6) – City of Benicia Public Works & Community Development, Fire City owns the water utility and works with Solano County and other cities on water supply. Fire has hoses available for bridging pipeline gaps in potable water supply

- Engage in, support, and/or encourage research by others (such as USGS, universities, or Pacific Earthquake Engineering Research Center-PEER) on measures to further strengthen transportation, water, sewer, and power systems so that they are less vulnerable to damage in disasters. (INFR-a-7) – City of Benicia Public Works & Community Development, Fire
- Encourage replacing above ground 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. (INFR-a-12) – City of Benicia Public Works & Community Development; Current City development standards require underground utilities in all new projects. City works with PG&E to undertake undergrounding of existing facilities when possible
- If you own a dam, coordinate with the State Division of Safety of Dams to ensure an adequate timeline for the maintenance and inspection of dams, as required of dam owners by State law, and communicate this information to local governments and the public. (INFR-a-13) – City of Benicia Public Works & Community Development; One dam in community. Regular inspections conducted by DOSD and City staff
- Encourage communication between State Emergency Management Agency (CalEMA), FEMA, and utilities related to emergencies occurring outside of the Bay Area that can affect service delivery in the region. (INFR-a-14) – City of Benicia Public Works & Community Development, Fire, Police; Ongoing training and communications
- 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. (INFR-a-15) – Solano County with City of Benicia Fire, Police; Part of County EMS and Fire Plan
- Coordinate with other critical infrastructure facilities to establish plans for delivery of water and wastewater treatment chemicals. (INFR-a-19) – City of Benicia Public Works & Community Development
- Include “areas subject to high ground shaking, earthquake-induced ground failure, and surface fault rupture” in the list of criteria used for determining a replacement schedule for pipelines (along with importance, age, type of construction material, size, condition, and maintenance or repair history). (INFR-b-3) – City of Benicia Public Works & Community Development
- 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. (INFR-b-8) – City of Benicia Public Works & Community Development, Fire; City facilities comply with CBSC
- Clarify to workers in critical facilities and emergency personnel, as well as to elected officials and the public, the extent to which the facilities are expected to perform only at a life safety level (allowing for the safe evacuation of personnel) or are expected to remain

functional following an earthquake. (INFR-b-9) – City of Benicia City Manager, Fire, Police; City has ongoing training programs, including classes, seminars, and educational materials

- For new development, 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. (INFR-c-4) – City of Benicia Public Works & Community Development, Fire; Dead end streets are not typically used in the City - particularly in high hazard areas. All cul-de-sacs have adequate turning radii
- For new development, enforce minimum road width of 20 feet with an additional 10-foot clearance on each shoulder on all driveways and road segments greater than 50 feet in length in wildfire hazard areas. (INFR-c-5) – City of Benicia Public Works & Community Development, Fire; Development review process ensures adequate access roads, including alternative fire access routes in hillside fire hazard areas
- 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. (INFR-c-6) – City of Benicia Public Works & Community Development, Fire; Development review process ensures adequate access roads, including alternative fire access routes in hillside fire hazard areas
- Ensure adequate fire equipment road or fire road access to developed and open space areas. (INFR-c-7) – City of Benicia Public Works & Community Development, Fire; Development review process ensures adequate access routes
- Assist, support, and/or encourage the U.S. Army Corp of Engineers, various Flood Control and Water Conservation Districts, and other responsible agencies to locate and maintain funding for the development of flood control projects that have high cost-benefit ratios (such as through the writing of letters of support and/or passing resolutions in support of these efforts). (INFR-d-4) – City of Benicia Public Works & Community Development; Ongoing
- Ensure that utility systems in new developments are constructed in ways that reduce or eliminate flood damage. (INFR-d-13) – City of Benicia Public Works & Community Development; Development review process and CEQA review address this issue
- Work for better cooperation among the patchwork of agencies managing flood control issues. (INFR-d-16) – City of Benicia Public Works & Community Development; Ongoing
- 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. (INFR-e-1) – City of Benicia Public Works & Community Development; City avoids, wherever possible, locating facilities in areas subject to ground failure
- 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. (INFR-e-2) – City of Benicia Public Works & Community Development; Zoning Ordinance regulates hillside development
- Ensure that critical buildings owned or leased by special districts or private utility companies participate in a program similar to San Francisco’s Building Occupancy

Resumption Program (BORP). The BORP program permits owners of buildings to hire qualified engineers to create facility-specific post-disaster inspection plans and allows these engineers to become automatically deputized as City/County inspectors for these buildings in the event of an earthquake or other disaster. This program allows rapid reoccupancy of the buildings. Note - A qualified (deleted structural) engineer is a California licensed engineer with relevant experience. (INFR-f-1) – City of Benicia Public Works & Community Development

- Provide materials to the public related to planning for power outages. (INFR-g-1) – City of Benicia Public Works & Community Development, Fire, PG&E
- Provide materials to the public related to family and personal planning for delays due to traffic or road closures, or due to transit system disruption caused by disasters. (INFR-g-2) – City of Benicia Public Works & Community Development, Fire; City-wide notification system. Cable Channel 27
- Sponsor the formation and training of Community Emergency Response Teams (CERT) for the employees of your agency. [Note – these programs go by a variety of names in various cities and areas.] (INFR-g-6) – City of Benicia Fire; CERT founded in 2002

### *Land Use*

- 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. (LAND-a-1) - City of Benicia Public Works & Community Development; Development Review process, Building Code, and Zoning Ordinance all address this issue.
- 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. (LAND-a-2) - City of Benicia Public Works & Community Development; Standard requirement for applications in seismic areas, per the Health and Safety Element of the General Plan and standard City procedures
- 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. (LAND-a-3) - City of Benicia Public Works & Community Development; Applicants must provide adequate information to assess geological risk, even if not within an Alquist-Priolo Zone
- Recognizing that the California Geological Survey has not completed earthquake-induced landslide and liquefaction mapping for much of the Bay Area, identify and require geologic reports in areas mapped by others as having significant liquefaction or landslide hazards. (LAND-a-6) - City of Benicia Public Works & Community Development; Applicants must provide adequate information to assess geological risk, even if not within an Alquist-Priolo Zone
- Support and/or facilitate efforts by the California Geological Survey to complete the earthquake-induced landslide and liquefaction mapping for the Bay Area. (LAND-a-7) - City of Benicia Public Works & Community Development

- Require that local government reviews of geologic and engineering studies are conducted by appropriately trained and credentialed personnel. (LAND-a-8) - City of Benicia Public Works & Community Development; City requires third party geotechnical review
- Review new 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. (LAND-b-1) - City of Benicia Public Works & Community Development, Fire; Fire Code
- 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. (LAND-c-1) - City of Benicia Public Works & Community Development; Ongoing program incorporates mitigation into
- Incorporate FEMA guidelines and suggested activities into local government plans and procedures for managing flood hazards. (LAND-c-2) - City of Benicia Public Works & Community Development, State and Federal Agencies; General Plan, Sewer Master Plan
- 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 (consistent with the NPDES program). (LAND-c-3) - City of Benicia Public Works & Community Development; City's Development Review Process
- 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*. (LAND-c-4) - City of Benicia Public Works & Community Development; City codes & resolutions
- 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. (LAND-d-1) - City of Benicia Public Works & Community Development; Development review process, Subdivision Ordinance, General Plan Health and Safety Element, Hillside Development Guidelines
- Require that local government reviews of these investigations are conducted by appropriately trained and credentialed personnel. (LAND-d-2) - City of Benicia Public Works & Community Development; Third party review for geologically sensitive development
- 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. (LAND-d-3) - City of Benicia Public Works & Community Development; City codes, Subdivision Ordinance
- Establish and enforce provisions under the creek protection, storm water management, and discharge control ordinances designed to control erosion and sedimentation. (LAND-d-4) - City of Benicia Public Works & Community Development; City codes, Development guidelines
- Establish requirements in zoning ordinances to address hillside development constraints, especially in areas of existing landslides. (LAND-d-5) - City of Benicia Public Works & Community Development; Development Review Process

- For new development, require a buffer zone between residential properties and landslide or wildfire hazard areas. (LAND-e-1) - City of Benicia Building, Fire; General Plan Health & Safety Element requires careful consideration of hazards. This is reflected in the Development Review Process. The City typically requires buffer strips and more focused weed abatement efforts in potentially hazardous situations.
- Discourage, add additional mitigation strategies, or prevent new construction or major remodels on slopes greater than a set percentage, such as 15%, due to landslide or wildfire hazard concerns. (LAND-e-2) - City of Benicia Public Works & Community Development, Fire; General Plan Health & Safety Element requires careful consideration of hazards. This is reflected in the Development Review Process. The City typically requires buffer strips and more focused weed abatement efforts in potentially hazardous situations.
- Prioritize retrofit of infrastructure that serves urban areas (or urban services areas) over constructing new infrastructure to serve outlying areas. (LAND-f-1) - City of Benicia Public Works & Community Development, Finance; City uses a balanced approach to infrastructure investments, with ongoing upgrades to existing facilities along with adequate infrastructure, funded through impact fees, in new areas
- Strive to provide and preserve existing buffers between development and existing users of large amounts of hazardous materials, such as major industry, due to the potential for catastrophic releases or fires due to an earthquake, accident, or terrorism. (Flooding might also result in release or spread of these materials; however, it is unlikely.) In areas where buffers do not exist or cannot be created, provide alternative mitigation. (LAND-f-5) - City of Benicia Public Works & Community Development, Fire; Ongoing

The following are on-going programs that are currently underfunded or partially funded by other agencies. It is the City's priority to search for, and find, additional funding to sustain these on-going programs over time.

### ***Economy***

- Create incentives for private owners of historic or architecturally significant commercial and industrial 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. (ECON-a-2) - City of Benicia Public Works & Community Development; Mills Act Program
- Accelerate retrofitting of privately-owned unreinforced masonry structures that have not been retrofitted, for example, by (a) actively working with owners to obtain structural analyses of their buildings, (b) helping owners obtain retrofit funding, (c) adopting a mandatory (rather than voluntary) retrofit program, and/or (d) applying penalties to owners who show inadequate efforts to upgrade these buildings. (ECON-c-2) - City of Benicia Public Works & Community Development
- Require private owners to inform all existing tenants (and prospective tenants prior to signing a lease agreement) that they work in an unreinforced masonry building and the standard to which it may have been retrofitted. (ECON-c-3) - City of Benicia Public Works & Community Development

- Inventory non-ductile concrete, tilt-up concrete, and other privately-owned structurally vulnerable buildings. (ECON-d-1) - City of Benicia Public Works & Community Development; Minimal need in Benicia
- Adopt one or more of the following strategies as incentives to encourage retrofitting of privately-owned seismically vulnerable commercial and industrial buildings: (a) waivers or reductions of permit fees, (b) below-market loans, (c) local tax breaks, (d) grants to cover the cost of retrofitting or of a structural analysis, (e) land use (such as parking requirement waivers) and procedural incentives, or (f) technical assistance. (ECON-d-3) - City of Benicia Public Works & Community Development
- Expand vegetation management programs in wildland-urban-interface fire-threatened communities or in areas exposed to high-to-extreme fire threat to more effectively manage the fuel load through roadside collection and chipping, mechanical fuel reduction equipment, selected harvesting, use of goats or other organic methods of fuel reduction, and selected use of controlled burning. (ECON-e-6) - City of Benicia Fire; Current Weed Abatement Program
- Establish special funding mechanisms (such as Fire Hazard Abatement Districts or regional bond funding) 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. (ECON-e-7) - City of Benicia Fire
- Establish special funding mechanisms (such as Fire Hazard Abatement Districts or regional bond funding) to fund fire-safety inspections of private properties, roving firefighter patrols on high fire-hazard days, and public education efforts. (ECON-e-8) - City of Benicia Fire
- Ensure that city/county-initiated fire-preventive vegetation-management techniques and practices for creek sides and high-slope areas do not contribute to the landslide and erosion hazard. (ECON-e-12) - City of Benicia Public Works & Community Development
- Work with insurance companies to create a public/private partnership to give a discount on fire insurance premiums to Forester Certified *Fire Wise* landscaping and fire-resistant building materials on private property. (ECON-e-13) - City of Benicia Fire, Public Works & Community Development
- Increase efforts to reduce landslides and erosion in existing and future private development through continuing education of design professionals on mitigation strategies. (ECON-g-2) - City of Benicia Building, Planning, Engineering; Ongoing through development review process
- Work with private building owners to help them recognize that many strategies that increase earthquake resistance also decrease damage in an explosion. In addition, recognize that ventilation systems can be designed to contain airborne biological agents. (ECON-h-3) - City of Benicia Building
- Institute a program to encourage owners of private buildings to participate in a program similar to San Francisco's Building Occupancy Resumption Program (BORP). This program permits owners of private buildings to hire qualified structural engineers to create building-specific post-disaster inspection plans and allows these engineers to become automatically deputized as City/County inspectors for these buildings in the event of an earthquake or other disaster. (ECON-i-1) - City of Benicia Building; Self-certification permitted by ordinance

- Establish preservation-sensitive measures for the repair and reoccupancy of historically significant privately-owned structures, including requirements for temporary shoring or stabilization where needed, arrangements for consulting with preservationists, and expedited permit procedures for suitable repair or rebuilding of historically or architecturally valuable structures. (ECON-i-6) - City of Benicia Building
- Develop printed materials, utilize existing materials (such as developed by FEMA and the American Red Cross), conduct workshops, and/or provide outreach encouraging private 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. (ECON-j-2) - City of Benicia Fire
- Develop and print materials, conduct workshops, and provide outreach to Bay Area private businesses focusing on business continuity planning. (ECON-j-3) - City of Benicia Fire, Economic Development
- Inform Bay Area private business owners of mitigation activities, including elevation of appliances above expected flood levels, use of fire-resistant roofing and defensible space in wildland-urban-interface fire-threatened communities or in areas exposed to high-to-extreme fire threat, structural retrofitting techniques for older buildings, and use of intelligent grading practices through workshops, publications, and media announcements and events. (ECON-j-4) - City of Benicia Building, Fire
- Sponsor the formation and training of Community Emergency Response Teams (CERT) training for other than your own employees through partnerships with local private businesses. [Note – these programs go by a variety of names in various cities and areas.] (ECON-j-5) - City of Benicia Fire; CERT program started in 2002
- Assist private 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. (ECON-j-6) - City of Benicia Fire; Weed abatement program in place
- Encourage joint meetings of security and operations personnel at major private employers to develop innovative ways for these personnel to work together to increase safety and security. (ECON-j-11) - City of Benicia Fire, Police

### *Education*

- Assess the vulnerability of critical public education facilities to damage in natural disasters and make recommendations for appropriate mitigation. (EDUC-a-1) – Benicia Unified School District and City of Benicia Fire
- Offer the 20-hour basic Student Emergency Response Training (SERT, rather than CERT) training to middle school and/or high school students as a part of the basic science or civics curriculum, as an after school club, or as a way to earn public service hours.. (EDUC-c-4) – Benicia Unified School District and City of Benicia Fire
- Offer the 20-hour basic CERT training course through the Adult School system and/or through the Community College system (either using instructors with teaching credentials or by making facilities available for classes not run by school personnel themselves). (EDUC-c-5) – Benicia Unified School District and City of Benicia Fire

## *Environment*

- Develop and implement a program to control invasive and exotic species that contribute to fire and flooding hazards (such as eucalyptus, cattails, and cordgrass). This program could include vegetation removal, thinning, or replacement in hazard areas where there is a direct threat to structures. (ENVI-a-12) – City of Benicia Parks & Community Services; Tree Ordinance adopted
- 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. (ENVI-a-13) – City of Benicia Public Works & Community Development; Enforcement of City ordinances and guidelines through development review process
- Adopt and enforce land-use policies that reduce sprawl, preserve open space, and create compact, walkable urban communities. (ENVI-b-3) – City of Benicia – Community Development; Ongoing through Zoning Ordinance
- Promote transportation options such as bicycle trails, commute trip reduction programs, incentives for car pooling and public transit. (ENVI-b-4) – City of Benicia Public Works and Community Development; Ongoing - implementation of Climate Action Plan
- Increase the use of clean, alternative energy by, for example, investing in “green tags”, advocating for the development of renewable energy resources, recovering landfill methane for energy production, and supporting the use of waste to energy technology. (ENVI-b-5) – City of Benicia Public Works and Community Development; Ongoing - implementation of Climate Action Plan
- Make energy efficiency a priority through building code improvements, retrofitting city facilities with energy efficient lighting and urging employees to conserve energy and save money. (ENVI-b-6) – City of Benicia Public Works and Community Development; Ongoing - implementation of Climate Action Plan
- Purchase only Energy Star equipment and appliances for local government use. (ENVI-b-7) – City of Benicia Public Works and Community Development; Ongoing - implementation of Climate Action Plan
- Practice and promote sustainable building practices using the U.S. Green Building Council's LEED program or a similar system. (ENVI-b-8) – City of Benicia Public Works and Community Development; Ongoing - implementation of Climate Action Plan
- Increase the average fuel efficiency of municipal fleet vehicles; reduce the number of vehicles; launch an employee education program including anti-idling messages; convert diesel vehicles to bio-diesel. (ENVI-b-9) – City of Benicia Public Works and Community Development; Ongoing - implementation of Climate Action Plan
- Evaluate opportunities to increase pump efficiency in water and wastewater systems; recover wastewater treatment methane for energy production. (ENVI-b-10) – City of Benicia Public Works and Community Development; Ongoing - implementation of Climate Action Plan
- Increase recycling rates in local government operations and in the community. (ENVI-b-11) – City of Benicia Public Works and Community Development; Ongoing - implementation of Climate Action Plan



- Maintain healthy urban forests; promote tree planting to increase shading and to absorb CO2. ( ENVI-b-12) – City of Benicia Public Works and Community Development; Ongoing - implementation of Climate Action Plan
- Help educate the public, schools, other jurisdictions, professional associations, business and industry about reducing global warming pollution. (ENVI-b-13) – City of Benicia Public Works and Community Development; Ongoing - implementation of Climate Action Plan

### ***Government***

- Assess the vulnerability of critical facilities (such as city halls, fire stations, operations and communications headquarters, community service centers, seaports, and airports) to damage in natural disasters and make recommendations for appropriate mitigation. (GOVT-a-1) - City of Benicia Fire, Police, Public Works & Community Development, Parks & Community Services; Ongoing assessment programs
- Retrofit or replace critical facilities that are shown to be vulnerable to damage in natural disasters. (GOVT-a-2) - City of Benicia Fire, Police; Recent update to Police Station and Emergency Dispatch Center
- Coordinate with the State Division of Safety of Dams to ensure that cities and counties are aware of the timeline for the maintenance and inspection of dams whose failure would impact their jurisdiction. (GOVT-a-8) - City of Benicia Public Works & Community Development, Fire.
- 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. (GOVT-b-1) - City of Benicia City Manager, Fire; Ongoing. Additional funding needed for expansion or enhancement
- 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 (such as with continuity of operations plans). (GOVT-b-2) - City of Benicia City Manager, Fire; Ongoing. Additional funding needed for expansion or enhancement
- Establish a goal for the resumption of local government services that may vary from function to function. (GOVT-b-3) - City of Benicia City Manager, Fire; City EOP and Department operations
- Develop a continuity of operations plan that includes back-up storage of vital records, such as plans and back-up procedures to pay employees and vendors if normal finance department operations are disrupted, as well as other essential electronic files. (GOVT-b-4) - City of Benicia City Manager, Fire, Finance; Ongoing. Additional funding needed for expansion or enhancement
- Plan for the emergency relocation of government-owned facilities critical to recovery, as well as any facilities with known structural deficiencies or in hazardous areas. (GOVT-b-5) - City of Benicia City Manager, Fire; Ongoing. Additional funding needed for expansion or enhancement
- Develop a plan for short-term and intermediate-term sheltering of your employees. (GOVT-c-1) - City of Benicia All City Departments; Sites identified in City's Emergency Response Plan

- Encourage your employees to have a family disaster plan. (GOVT-c-2) - City of Benicia All City Departments; Ongoing
- Offer CERT/NERT-type training to your employees. (GOVT-c-3) - City of Benicia Fire; Ongoing
- Periodically assess the need for new or relocated fire or police stations and other emergency facilities. (GOVT-c-4) - City of Benicia Public Works & Community, Fire, Police; Ongoing
- Periodically assess the need for changes in staffing levels, as well as for additional or updated supplies, equipment, technologies, and in-service training classes. (GOVT-c-5) - City of Benicia Fire, Police; Ongoing. Additional funding needed for expansion or enhancement
- Ensure that fire, police, and other emergency personnel have adequate radios, breathing apparatuses, protective gear, and other equipment to respond to a major disaster. (GOVT-c-6) - City of Benicia Fire, Police, Solano County; Ongoing. Additional funding needed for expansion or enhancement
- Participate in developing and maintaining a system of interoperable communications for first responders from cities, counties, special districts, state, and federal agencies. (GOVT-c-7) - City of Benicia Fire, Police, Solano County; The City is cooperating with Solano County and other jurisdictions to improve coordination
- 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. (GOVT-c-8) - City of Benicia Fire, Police, Solano County; Ongoing. Additional funding needed for expansion or enhancement
- Purchase command vehicles for use as mobile command/EOC vehicles if current vehicles are unsuitable or inadequate. (GOVT-c-9) - City of Benicia Fire, Police, Solano County; Ongoing. County command vehicle available at any time. Additional funding needed for expansion or enhancement
- Maintain the local government's emergency operations center in a fully functional state of readiness. (GOVT-c-10) - City of Benicia Fire, Police, Solano County; Ongoing. Additional funding needed for expansion or enhancement
- 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. (GOVT-c-11) - City of Benicia Fire, Police, Solano County; Ongoing. Additional funding needed for expansion or enhancement
- Maintain and update as necessary the local government's Standardized Emergency Management System (SEMS) Plan and the National Incident Management System (NIMS) Plan, and submit an appropriate NIMSCAST report. (GOVT-c-12) - City of Benicia City Manager, Fire, Police; NIMS system in place
- Conduct periodic tests of the alerting and warning system. (GOVT-c-15) - City of Benicia Fire, Police; Monthly testing
- Support and encourage planning and identification of facilities for the coordination of distribution of water, food, blankets, and other supplies, coordinating this effort with the American Red Cross. (GOVT-c-25) - City of Benicia All City Departments; Ongoing

- Encourage staff to participate in efforts by professional organizations to mitigate earthquake and landslide disaster losses, such as the efforts of the Northern California Chapter of the Earthquake Engineering Research Institute, the East Bay-Peninsula Chapter of the International Code Council, the Structural Engineers Association of Northern California, and the American Society of Grading Officials. (GOVT-d-8) - City of Benicia Public Works & Community Development, Fire; Ongoing. Additional funding needed for expansion or enhancement
- Conduct and/or promote attendance at local or regional hazard conferences and workshops for elected officials and staff to educate them on the critical need for programs in mitigating earthquake, wildfire, flood, and landslide hazards. (GOVT-d-9) - City of Benicia City Manager, Public Works & Community Development, Fire; Ongoing. Additional funding needed for expansion or enhancement

### ***Health***

- Plan for hazmat related-issues due to a natural or technological disaster. Hazmat teams should utilize the State of California Department of Health Services laboratory in Richmond for confirmation of biological agents and Lawrence Livermore National Laboratory or Sandia (both in Livermore) for confirmation of radiological agents. (HEAL-c-4) – All City of Benicia Departments, Solano County

### ***Housing***

- Assist in ensuring adequate hazard disclosure by working with real estate agents to improve enforcement of real estate disclosure requirements for residential properties with regard to seven official natural hazard zones: 1) Special Flood Hazard Areas (designated by FEMA), 2) Areas of Potential Flooding from dam failure inundation, 3) Very High Fire Hazard Severity Zones, 4) Wildland Fire Zones, 5) Earthquake Fault Zones (designated under the Alquist-Priolo Earthquake Fault Zoning Act), and the 6) Liquefaction and Landslide Hazard Zones (designated under the Seismic Hazard Mapping Act). (HSNG-a-1) - City of Benicia Building
- Create incentives for private 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*. (HSNG-a-2) - City of Benicia Building, Planning; Mills Act Program available for eligible properties. Currently have 28 properties under contract.
- Accelerate retrofitting of privately-owned unreinforced masonry structures that have not been retrofitted, for example, by (a) actively working with owners to obtain structural analyses of their buildings, (b) helping owners obtain retrofit funding, (c) adopting a mandatory versus voluntary, retrofit program, and/or (d) applying penalties to owners who show inadequate efforts to upgrade these buildings. (HSNG-d-2) - City of Benicia Building
- Require private owners to inform all existing tenants (and prospective tenants prior to signing a lease agreement) that they live in an unreinforced masonry building and the standard to which it may have been retrofitted. (HSNG-d-3) - City of Benicia Building

- Identify and work toward tying down mobile homes used as year-round permanent residences using an appropriate cost-sharing basis (for example, 75% grant, 25% owner). (HSNG-e-1) - City of Benicia State jurisdiction over mobile homes
- Adopt one or more of the following strategies as incentives to encourage retrofitting of privately-owned seismically vulnerable residential buildings: (a) waivers or reductions of permit fees, (b) below-market loans, (c) local tax breaks, (d) grants to cover the cost of retrofitting or of a structural analysis, (e) land use (such as parking requirement waivers) and procedural incentives, or (f) technical assistance. (HSNG-e-4) - City of Benicia Building
- 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. (HSNG-g-8) - City of Benicia Building, Fire
- Expand vegetation management programs in wildland-urban- interface fire-threatened communities or in areas exposed to high-to-extreme fire threat to more effectively manage the fuel load through roadside collection and chipping, mechanical fuel reduction equipment, selected harvesting, use of goats or other organic methods of fuel reduction, and selected use of controlled burning. (HSNG-g-9) - City of Benicia Fire; Weed abatement program
- Work with residents in rural-residential areas to ensure adequate plans are developed for appropriate access and evacuation in wildland-urban-interface fire-threatened communities or in areas exposed to high-to-extreme fire threat. For example, in some areas, additional roads can be created, and in other areas, the communities will need to focus on early warning and evacuation because additional roads are not feasible. (HSNG-g-11) - City of Benicia Fire
- Ensure that city/county-initiated fire-preventive vegetation-management techniques and practices for creek sides and high-slope areas do not contribute to the landslide and erosion hazard. For example, vegetation in these sensitive areas could be thinned, rather than removed, or replanted with less flammable materials. When thinning, the non-native species should be removed first. Other options would be to use structural mitigation, rather than vegetation management in the most sensitive areas. (HSNG-g-17) - City of Benicia Fire
- Work with insurance companies to create a public/private partnership to give a discount on fire insurance premiums to Forester Certified Fire Wise landscaping and fire-resistant building materials on private property. (HSNG-g-20) - City of Benicia Fire
- Increase efforts to reduce landslides and erosion in existing and future private development through continuing education of design professionals on mitigation strategies. (HSNG-i-2) - City of Benicia Public Works & Community Development; Development conditions require mitigation of potential landslides (or address buffering of landslide-prone areas)
- Establish preservation-sensitive measures for the repair and reoccupancy of historically significant privately-owned structures, including requirements for temporary shoring or stabilization where needed, arrangements for consulting with preservationists, and expedited permit procedures for suitable repair or rebuilding of historically or architecturally valuable structures. (HSNG-j-2) - City of Benicia Building, Planning

- Provide information to residents of your community on the availability of interactive hazard maps showing your community on ABAG's web site. (HSNG-k-1) - City of Benicia Planning, Fire; Link on City's webpage
- 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. (HSNG-k-2) - City of Benicia Fire
- 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. (HSNG-k-3) - City of Benicia Building, Fire
- Sponsor the formation and training of Community Emergency Response Teams (CERT) for residents in your community. [Note – these programs go by a variety of names in various cities and areas.] (HSNG-k-6) - City of Benicia Fire; CERT started in 2002
- Include flood fighting technique session based on California Department of Water Resources training to the list of available public training classes offered by CERT. (HSNG-k-7) - City of Benicia Fire
- Institute the neighborhood watch block captain and team programs outlined in the Citizen Corps program guide. (HSNG-k-8) - City of Benicia Police; In place, with primary focus on crime prevention
- 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. (HSNG-k-9) - City of Benicia Fire; Clean-up weed program for residents

### ***Infrastructure***

- Assess the vulnerability of critical facilities owned by infrastructure operators subject to damage in natural disasters or security threats, including fuel tanks and facilities owned outside of the Bay Area that can impact service delivery within the region. **Note** - Infrastructure agencies, departments, and districts are those that operate transportation and utility facilities and networks. (INFR-a-1) - City of Benicia Public Works & Community Development, Fire, Police; Ongoing assessment programs. Upgrade of PD, Security Vulnerability Assessment of water and wastewater facilities have been completed and updated as appropriate
- Encourage the cooperation of utility system providers and cities, counties, and special districts, and PG&E to develop strong and effective mitigation strategies for infrastructure systems and facilities. (INFR-a-4) - City of Benicia Public Works & Community Development, Fire Recent upgrade and retrofit of Police/Dispatch center
- 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. (INFR-a-8) - City of Benicia Public Works & Community Development, Fire; Fire and Police Stations, water and wastewater plans,

radio communication locations, City Hall equipped with backup generation; portable equipment available for pump and lift stations

- Ensure that critical intersection traffic lights function following loss of power by installing battery back-ups, emergency generators, or lights powered by alternative energy sources such as solar. Proper functioning of these lights is essential for rapid evacuation, such as with hazmat releases resulting from natural disasters. (INFR-a-9) - City of Benicia Public Works & Community Development, Fire
- Minimize the likelihood that power interruptions will adversely impact lifeline utility systems or critical facilities by ensuring that they have adequate back-up power. (INFR-a-11) - City of Benicia Public Works & Community Development, Fire, Police
- Recognize that heat emergencies produce the need for non-medical transport of people to cooling centers by ensuring that (1) transit operators have plans for non-medical transport of people during and after such emergencies including the use of paratransit and (2) cities, counties, and transit agencies have developed ways to communicate the plan to the public. (INFR-a-16) - City of Benicia Solano County, Fire
- Develop (with the participation of paratransit providers, emergency responders, and public health professionals) plans and procedures for paratransit system response and recovery from disasters. (INFR-a-18) - Solano County, Transit Services
- Establish plans for delivery of fuel to critical infrastructure providers. (INFR-a-20) - City of Benicia Public Works & Community Development
- Monitor scientific studies of the Sacramento-San Joaquin Delta and policy decisions related to the long-term disaster resistance of that Delta system to ensure that decisions are made based on comprehensive analysis and in a scientifically-defensible manner. Levee failure due to earthquakes, flooding, and climate change (including sea level rise and more frequent and more severe flooding) are all of concern. The long-term health of the Delta area is critical to the Bay Area's water supply, is essential for the San Francisco Bay and estuary's environmental health, provides recreation opportunities for Bay Area residents, and provides the long-term sustainability of Delta communities. While only part of the Delta is within the nine Bay Area counties covered by this multi-jurisdictional LHMP, the Delta is tied to the infrastructure, water supply, and economy of the Bay Area. (INFR-a-22) - City of Benicia Public Works & Community Development
- Expedite the funding and retrofit of seismically-deficient city- and county-owned bridges and road structures by working with Caltrans and other appropriate governmental agencies. (INFR-b-1) - City of Benicia Public Works & Community Development
- Install specially-engineered pipelines in areas subject to faulting, liquefaction, earthquake-induced landsliding, or other earthquake hazard. (INFR-b-4) - City of Benicia Public Works & Community Development; Inspections as needed
- Install portable facilities (such as hoses, pumps, emergency generators, or other equipment) to allow pipelines to bypass failure zones such as fault rupture areas, areas of liquefaction, and other ground failure areas (using a priority scheme if funds are not available for installation at all needed locations). (INFR-b-6) - City of Benicia Public Works & Community Development, Fire; Potential failure zones are identified. Fire Department can provide hoses to connect water mains across fault lines through fire hydrants. Portable PRV

- Install earthquake-resistant connections when pipes enter and exit bridges and work with bridge owners to encourage retrofit of these structures. (INFR-b-7) - City of Benicia Public Works & Community Development; Needs assessment
- Ensure a reliable source of water for fire suppression (meeting acceptable standards for minimum volume and duration of flow) for existing and new development. (INFR-c-1) - City of Benicia Public Works & Community Development, Fire; City's development review standards and process address water supply, hydrant location, and fire access
- 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 (including wildfire threat areas and in wildland-urban-interface areas). (INFR-c-2) - City of Benicia Public Works & Community Development, Fire; Standard City policy includes periodic review of firefighting water capacity
- 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. (INFR-c-3) - City of Benicia Public Works & Community Development, Fire; Chapter 8 of the Benicia Municipal code requires weed abatement. The Fire Department also requires maintenance of a firebreak in City open space areas near development
- Maintain fire roads and/or public right-of-way roads and keep them passable at all times. (INFR-c-8) - City of Benicia Public Works & Community Development, Fire; Standard City policy
- Conduct a watershed analysis of runoff and drainage systems to predict areas of insufficient capacity in the storm drain and natural creek system. (INFR-d-1) - City of Benicia Public Works & Community Development; Specifically relates to transportation issues and watershed analysis criteria is formed by other agencies. This refers to the appropriate performance criteria used in the development of a watershed analysis
- Develop procedures for performing a watershed analysis to examine the impact of development on flooding potential downstream, including communities outside of the jurisdiction of proposed projects. (INFR-d-2) - City of Benicia Public Works & Community Development; Standard CEQA review addresses this during the development review process
- Conduct a watershed analysis at least once every ten years unless there is a major development in the watershed or a major change in the Land Use Element of the General Plan of the cities or counties within the watershed. (INFR-d-3) - City of Benicia Public Works & Community Development
- Pursue funding for the design and construction of storm drainage projects to protect vulnerable properties, including property acquisitions, upstream storage such as detention basins, and channel widening with the associated right-of-way acquisitions, relocations, and environmental mitigations. (INFR-d-5) - City of Benicia Public Works & Community Development; Ongoing
- Continue to repair and make structural improvements to storm drains, pipelines, and/or channels to enable them to perform to their design capacity in handling water flows as part of regular maintenance activities. (This strategy has the secondary benefit of addressing fuel, chemical, and cleaning product issues.) (INFR-d-6) - City of Benicia Public Works & Community Development; Ongoing maintenance and upgrading

programs in place. Upgrades to upstream facilities required during development review process

- 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. (INFR-d-7) - City of Benicia Public Works & Community Development; Ongoing
- 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. (INFR-d-8) - City of Benicia Public Works & Community Development; Zoning Ordinance requires creek corridor setbacks to preserve flood retention and protect water quality. City has adopted Stormwater Management Program
- Use reservoir sediment or reed removal as one way to increase storage for both flood control and water supply. (INFR-d-10) - City of Benicia Public Works & Community Development
- 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 increase plant security. (INFR-d-14) - City of Benicia Public Works & Community Development; City owns the wastewater utility. The plant is designed to minimize flooding from marsh-related tides
- Work cooperatively with water agencies, flood control districts, Caltrans, and local transportation agencies to determine appropriate performance criteria for watershed analysis. (INFR-d-15) - City of Benicia Public Works & Community Development, Finance, Dept. of Transportation
- Improve monitoring of creek and watercourse flows to predict potential for flooding downstream by working cooperatively with land owners and the cities and counties in the watershed. (INFR-d-17 ) - City of Benicia Public Works & Community Development; Ongoing through development review process
- Using criteria developed by EPA for asset management, inventory existing assets, the condition of those assets, and improvements needed to protect and maintain those assets. Capture this information in a Geographic Information System (GIS) and use it to select locations for creek monitoring gauges. (INFR-d-18 ) - City of Benicia Public Works & Community Development; Ongoing through development review process
- Provide materials to the public related to coping with reductions in water supply or contamination of that supply BEYOND regulatory notification requirements. (INFR-g-3 ) - City of Benicia Public Works & Community Development
- Provide materials to the public related to coping with disrupted storm drains, sewage lines, and wastewater treatment (such as materials developed by ABAG's Sewer Smart Program). (INFR-g-4 ) - City of Benicia Public Works & Community Development
- Facilitate and/or coordinate the distribution of emergency preparedness or mitigation materials that are prepared by others, such as by making the use of the internet or other electronic means, or placing materials on community access channels or in city or utility newsletters, as appropriate. (INFR-g-5 ) - All City of Benicia Departments; City website
- Develop and distribute culturally appropriate materials related to disaster mitigation and preparedness, such as those on the <http://www.preparenow.org> website related to infrastructure issues. (INFR-g-7 ) - City of Benicia Building, Fire



### ***Land Use***

- Work to retrofit homes in older urban neighborhoods to provide safe housing close to job centers. (LAND-f-2) – City of Benicia Public Works & Community Development; Housing rehabilitation program administered through Vallejo Neighborhood Housing Services.
- Work to retrofit older downtown areas and redevelopment districts to protect architectural diversity and promote disaster-resistance. (LAND-f-3) – City of Benicia Public Works & Community Development; City encourages the use of rehabilitation loans and grants.
- Work with non-profits and through other mechanisms to protect as open space those areas susceptible to extreme hazards (such as through land acquisition, zoning, and designation as priority conservation areas). (LAND-f-4) – City of Benicia Public Works & Community Development; Ongoing process through Sky Valley Committee.

## **Incorporation into Existing Planning Mechanisms**

The City has several planning mechanisms which

- ◆ General Plan – Community Health and Safety element
- ◆ Capital Improvements Plan
- ◆ Benicia Climate Action Plan
- ◆ Benicia Emergency Operations Plan

The City has a Community Health and Safety Element in its General Plan that includes a discussion of fire, earthquake, flooding, and landslide hazards. This Annex will be adopted as an implementation appendix to that Community Health and 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.

Implementation measures identified by the City as a high priority will be incorporated into the City's Capital Improvement Program planning process. This will be dependent on securing funding for projects and programs, as the City is currently facing serious financial stress. However, the City's Capital Improvement Program routinely includes public improvements which address public health and safety. The Local Annex will be used during the preparation of the CIP to ensure that to the extent practicable mitigation activities are implemented.

The Local Annex will be adopted as part of the Public Health and Safety Element and effectively becomes integrated into the General Plan. The strategies identified in this plan may result in minimal changes to the General Plan, which can be integrated when that plan is updated.

## Plan Update Process

As required Disaster Mitigation Act of 2000, the City of Benicia 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 City 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. For example, if a structural engineering evaluation shows that a major risk exists at more or more facilities based on data collected from a future earthquake, the priority associated with upgrading those facilities will be re-evaluated. Finally, the Annex will be a discussion item on the agenda of the meeting of Department leaders at least once a year in April. 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.

During the 2005-2010 period, monitoring of this Annex and mitigation safety goals occurred by the City Fire Department. In addition, the goals of this plan were supplemented and leveraged by the Building Division and Fire Departments.

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 City Manager or his/her designee will contact ABAG four years after this plan is approved to ensure that ABAG plans to undertake the plan update process. If so, the County 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 Solano County's Office of Emergency Services. Counties should then work together to identify another regional forum for developing a multi-jurisdictional plan.

The City of Benicia is committed to public participation. All City Council meetings are open to the public and the public is invited to comment on items on the Council Agenda. The public will continue 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 meeting logistics. The City is committed to improving public participation in the update process over the next five years. To improve this process, the City will consider writing letters to the editor of local newspapers in its service area to promote wider public knowledge of the issues related to disaster mitigation and the planning process.

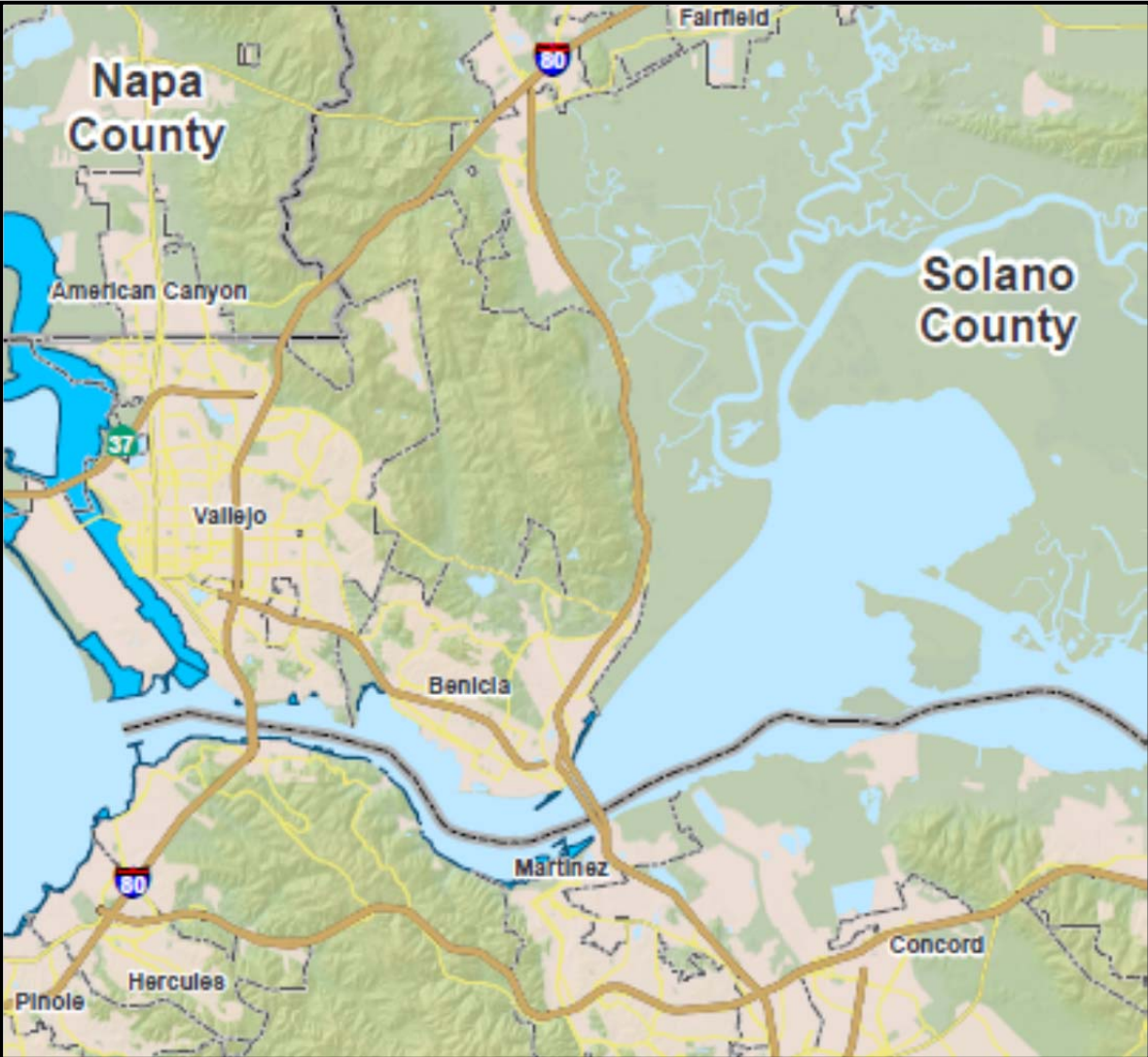
## Mitigation Plan Point of Contact

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### *Alternate Point of Contact*

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Exhibit A - Jurisdiction Boundary Map



## Exhibit B - Public Meeting Agenda



### **SPECIAL JOINT MEETING OF THE BENICIA PLANNING & HISTORIC PRESERVATION REVIEW COMMISSIONS**

#### **CITY COUNCIL CHAMBERS**

#### **SPECIAL MEETING AGENDA Thursday, September 10, 2009 7:00 P.M.**

Excerpt:

#### **V. REGULAR AGENDNA ITEMS**

##### **B. LOCAL HAZARD MITIGATION PLAN UPDATE**

In February 2007, the City of Benicia adopted the Association of Bay Area Government's (ABAG) Taming Natural Disasters plan and the City's Annex, Strategies, and Critical Facilities Plan as the City of Benicia's Local Hazard Mitigation Plan (LHMP). The federal Disaster Mitigation Act of 2000 requires all cities, counties and special districts to have adopted a LHMP to receive disaster mitigation funding from FEMA. This plan addresses critical areas within our community and qualifies the City for possible mitigation funding that may become available in the future from FEMA. City Staff has been working with ABAG staff to update the LHMP Strategies and is requesting input from the Commissions and community.

##### **Recommendation:**

Staff is requesting comments from the Commissions and community regarding the update to the Local Hazard Mitigation Plan strategies and priorities. No additional action is required.

## Exhibit C - City of Benicia 2010 Mitigation Strategy Spreadsheet

[Available on LHMP CD or at <http://www.abag.ca.gov/bayarea/eqmaps/mitigation/strategy.html>]