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VACAVILLE

CITY OF VACAVILLE

650 MERCHANT STREET, VACAVILLE, CALIFORNIA 95688-6908
ESTABLISHED 1850

August 25, 2006

Ken Worman
Office of Emergency Services
Hazard Mitigation Division
3650 Schriever Avenue
Mather, California 95655

Re: City of Vacaville
Local Hazard Mitigation Plan Submission

Dear Mr. Worman:

Enclosed are two printed copies and two copies on CD of the adopted local hazard mitigation plan (LHMP) for the City of Vacaville. Please confirm receipt, in writing, to the under signed.

We are providing the executed resolution of the City Council. A table of contents, primary contact, our "Annex" and our "Strategies" inclusive of eight (8) components are included.

The City requests an expedited review and approval of our LHMP, which is an Annex to the already submitted and approved ABAG Multi-Jurisdictional Local Government Hazard Mitigation Plan for the San Francisco Bay Area (March 2005). Our documents have already been informally reviewed by FEMA with a favorable determination.

For our most recent disaster event DR 1628, winter storms we have had three "Notice of Interests" accepted for preparation of the formal applications due November 3, 2006. As an approved LHMP is required for acceptance of these applications such an expedited review in critically important to the City.

Please call me with any questions concerning our LHMP. You may also contact Steve Strickland (707 449 5173) of our Public Works Department or Jerry Quinn, of MAXIMUS, Inc., (916 351 1831) if you cannot reach me.

Sincerely,

Joel Brick, Fire Division Chief
707 449 5463
Fax: 707 449 5483
jbrick@cityofvacaville.com

City of Vacaville
Local Hazard Mitigation Plan
Adopted August 8, 2006

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RESOLUTION NO. 2006-94

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF VACAVILLE APPROVING THE ASSOCIATION OF BAY AREA GOVERNMENT'S (ABAG) REPORT ENTITLED "TAMING NATURAL DISASTERS" AS THE CITY OF VACAVILLE'S LOCAL HAZARD MITIGATION PLAN

WHEREAS, the San Francisco Bay Area is subject to various earthquake-related hazards such as ground shaking, liquefaction, land sliding, fault surface rupture, and tsunamis; and

WHEREAS, the San Francisco Bay Area is subject to various weather-related hazards including wildfires, floods, and landslides; and

WHEREAS, the City of Vacaville recognizes that disasters do not recognize city, county, or special district boundaries; and

WHEREAS, the City of Vacaville seeks to maintain and enhance both a disaster-resistant City and region by reducing the potential loss of life, property damage, and environmental degradation from natural disasters, while accelerating economic recovery from those disasters; and

WHEREAS, the City of Vacaville is committed to increasing the disaster resistance of the infrastructure, health, housing, economy, government services, education, environment, and land use systems in the City of Vacaville, as well as in the San Francisco Bay Area as a whole; and

WHEREAS, the Federal Disaster Mitigation Act of 2000 requires all cities, counties, and special districts to have adopted a Local Hazard Mitigation Plan to receive disaster mitigation funding from FEMA; and

WHEREAS, Association of Bay Area Governments ("ABAG") has approved and adopted the ABAG report entitled "Taming Natural Disasters" as the multi-jurisdictional Local Hazard Mitigation Plan for the San Francisco Bay Area.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Vacaville adopts, and adapts with its local annex, this multi-jurisdictional plan as its Local Hazard Mitigation Plan.

BE IT FURTHER RESOLVED that the City of Vacaville commits to continuing to take those actions and initiating further actions, as appropriate, as identified in the City of Vacaville Annex of that multi-jurisdictional Local Hazard Mitigation Plan.

I HEREBY CERTIFY that the foregoing resolution was introduced and passed at a regular meeting of the City Council of the City of Vacaville, held on the 8th day of August, 2006, by the following vote:

AYES: Council members Dimmick, Hardy, Wilkins, Vice-Mayor Clancy And Mayor Augustine

NOES: None

ABSTAIN: None

ABSENT: None

ATTEST:

Michelle A. Thornbrugh

Michelle A. Thornbrugh, City Clerk

I hereby certify that the foregoing instrument is a true copy of the original instrument on file in my office.

Michelle A. Thornbrugh

City Clerk of the City of Vacaville, California

Local Hazard Mitigation Plan ANNEX
City of Vacaville

Introduction

The City of Vacaville is a moderately-sized city in Solano County, California. The City has a population of 88,625 people, based on the 2000 census[1]. Last year, the City's budget was $110,114,475. The City employs 582 full time people.

The Planning Process

The process of preparing this plan was familiar to the City of Vacaville. The City has a Safety Element to its General Plan that was last updated in 1999 that includes a discussion of fire, earthquake, flooding, and landslide hazards. In addition, the City routinely enforces the requirements of the California Environmental Quality Act (CEQA) requirements (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 in order to work on ways to address these risks through mitigation.

Many of the activities conducted by the City were fed into the planning process for the multi-jurisdictional plan. The City participated in various ABAG workshops and meetings, including the general "kick-off" meeting. Finally, the City provided information on facilities that are viewed as "critical" to ABAG.

Key City staff met on two occasions to identify and prioritize mitigation strategies appropriate for the City. Departments involved in these meetings included Community Development, City Manager's, Public Works, Housing and Redevelopment, Fire, and Police. At the first meeting, the general priorities and appropriate City departments were identified. At the second meeting, staff identified mitigation strategies. The City will provide the opportunity for the public to comment on the DRAFT mitigation strategies selected by City staff at the City Council meeting on July 18, 2006. The resolution adopting the plan and strategies was on the City Council agenda on August 8, 2006. The mitigation strategies will become an implementation appendix to this Safety Element.

Hazard and Risk 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). These hazards also impact this community.

While the City has undertaken a number of general hazard mapping activities since the first 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/**.

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[1] For complete Census information on this city, see **http://www.bayareacensus.ca.gov/**.

Information on disasters declared in Solano County is at **http://quake.abag.ca.gov/mitigation/disaster-history.html.**

The City examined the hazard exposure of City urban land based on the information on ABAG's website at **http://quake.abag.ca.gov/mitigation/pickdbh2.html**. Of the 11,704 urban acres in the City,

- Earthquake faulting – The Great Valley Fault runs to the east of Vacaville. However, this fault is not considered an active fault with significant surface rupture hazard by the California Geological Survey.
- Earthquake shaking – No acres are in the highest two categories of shaking potential. However, many acres are in moderate hazard levels due to the presence of this Great Valley Fault.
- Earthquake-induced landslides – the California Geological Survey has not completed mapping of this hazard in the City of Vacaville. However, the hazard is considered similar to that of rainfall-induced landslides.
- Earthquake liquefaction – 7,411 acres are in areas of moderate, high, or very high liquefaction susceptibility.
- Tsunamis – While tsunamis mapping within San Francisco Bay has not been completed, there is no significant hazard in the City of Vacaville.
- Flooding – 555 acres are in the 100-year flood plain, while an additional 1,830 acres are in other flood-prone areas.
- Landslides – 33 acres are in areas of existing landslides.
- Wildfires – 477 acres are subject to high, very high, or extreme wildfire threat (because of the urban nature of the City), but 5,011 acres are in wildland-urban interface threat areas.
- Dam Inundation – 141 acres are subject to dam inundation.
- Drought – all acres are subject to drought.

The City also examined the hazard exposure of infrastructure based on the information on ABAG's website at **http://quake.abag.ca.gov/mitigation/pickdbh2.html**. Of the 313 miles of roadway in the City,

- Earthquake faulting – Per the ABAG website, no active faults run within the city so rupture of a fault is not a direct concern.
- Earthquake shaking – No miles of roadway are in the highest two categories of shaking potential. All are in the moderate shaking potential areas.
- Earthquake-induced landslides – the California Geological Survey has not completed mapping of this hazard in the City of Vacaville. No roads are in areas subject to rainfall-induced landslide.
- Earthquake liquefaction – 211 miles of roadway are in areas of moderate, high, or very high liquefaction susceptibility.
- Tsunamis – While tsunamis mapping within San Francisco Bay has not been completed, there is no significant hazard in the City of Vacaville.
- Flooding – 13 miles of roadway are in the 100-year flood plain, while an additional 56 miles are in other flood-prone areas.
- Landslides – No roads are in areas of existing landslides.

- Wildfires – While 15 miles of roadway are subject to high, very high, or extreme wildfire threat, 142 miles of roads are in wildland-urban interface threat areas.
- Dam Inundation – Four miles of roadway is in an area subject to dam inundation.
- Drought – is not a hazard for roadways.

Finally, the City examined the hazard exposure of critical health care facilities, schools, and city-owned buildings based on the information on ABAG's website at **http://quake.abag.ca.gov/mitigation/pickcrit.html**. Of the critical facilities in the City,

- Earthquake faulting – No active faults with a significant surface rupture hazard run within the city so rupture of a fault is not a direct concern.
- Earthquake shaking – There are no facilities in the highest shaking potential category. However, there are seven city-owned critical facilities, 57 bridges and interchanges moderate shaking categories.
- Earthquake-induced landslides – the California Geological Survey has not completed mapping of this hazard in the City of Vacaville. However, this is unlikely to be an issue because no city-owned facilities or bridges or interchanges are in existing landslide areas.
- Earthquake liquefaction susceptibility – Six critical city-owned facilities are in areas of moderate liquefaction susceptibility.
- Tsunamis – While tsunamis mapping within San Francisco Bay has not been completed, there is no significant hazard in the City of Vacaville.
- Flooding – There are no city-owned critical facilities in a flood hazard area.
- Landslides –There are no critical facilities in areas of "many" or "mostly" landslide.
- Wildfires – There are no city-owned critical facilities subject to high, very high, or extreme wildfire threat, while there are three city-owned critical facilities are in wildland-urban interface threat areas.
- Dam Inundation – No city-owned critical facilities are in an area subject to dam inundation.
- Drought – Drought will not affect city buildings directly. However, the city does operate a water-supply distribution system.

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.**

The City plans to work with ABAG during 2006 to improve the risk assessment information being compiled by ABAG by providing information on unreinforced masonry buildings and soft-story apartments located in the City.

Drought, though a potential problem in the City, is not fully assessed. The City will work with ABAG and various water supply agencies on this issue.

The City plans to work with ABAG to develop specific information about the kind and level of damage to buildings, infrastructure, and critical facilities which might result from any of the hazards previously noted. The ABAG Annex states that ABAG will be doing this work in 2005 through early 2006.

As these impacts are not fully developed, the City has reviewed the hazards identified and ranked the hazards based on past disasters and expected future impacts. The conclusion is that flooding, wildfire, and landslides (including unstable earth) pose a significant risk for potential loss, while earthquakes (including shaking and liquefaction) are less of a problem but still of concern.

Mitigation Activities and Priorities

As a participant in the ABAG multi-jurisdictional planning process, City of Vacaville staff helped in the development and review of the comprehensive list of mitigation strategies in the overall multi-jurisdictional plan. The list was discussed at a meeting of City staff members representing the following Departments; Community Development, Public Works, Fire Department, and Assistant City Managers met on March 2, 2006. At the meeting, all of the mitigation strategies were reviewed. The tentative 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.

Over time, we are committed to developing better hazard and risk information to use in making those trade-offs. We are not trying to create a disaster-proof region, but a disaster-resistant one. In addition, several of the strategies are existing City programs.

These draft priorities were submitted to the City Manager for review. The draft priorities were then provided to the City Council on July 18, 2006. The resolution adopting the plan and strategies was on the City Council agenda on August 8, 2006. The final strategies (as shown in the attached Table) will become an *Implementation Appendix* to the City's *Safety Element.*

In the recent storms of late December and early January 2006, the City again experienced flooding due to lack of adequate detention basins. Therefore, the construction of these basins and related mitigation activities are listed as a "high" priority in the attached strategies.

The Plan Maintenance and Update Process

The Fire Chief 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 community, legal changes, notices from ABAG as the lead agency in this process, and other triggers will be used. Finally, the Annex will be a discussion item on the agenda of the meeting of City department heads 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. This group will be responsible for determining if the plan should be updated.

The City of Vacaville 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 Community Development Director will contact ABAG four years after this plan is approved to ensure that ABAG plans to undertake the plan update process. If so, the City again plans to participate in the multi-jurisdictional plan. If ABAG is unwilling or unable to act as the lead agency in the multi-jurisdictional effort, other agencies will be contacted, including the County's Office of

Emergency Services. Counties should then work together to identify another regional forum for developing a multi-jurisdictional plan.

The ***public*** will continue to be 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.

Infrastructure Mitigation Strategies

	Specific Mitigation Strategy	Existing Program	Very High	High	Moderate	Under Study	Not Applicable, Not Appropriate, or Not Cost Effective	Not Yet Considered	Responsible Agency or Department (Required if Existing Program, Very High, High, or Under Study)	Ordinance or Resolution # (if existing program), Estimated Cost and Possible Funding Agency (if high priority), Estimated Date of Completion (if study) OR Other Comments
INFR - a - Multihazard										
1)	Assess the vulnerability of critical facilities designated by lifeline operators to damage in natural disasters or security threats, including facilities owned outside of the Bay Area that can impact service delivery within the region. **Note** - Lifeline agencies, departments, and districts are those that operate transportation and utility facilities and networks.	X							Fire, Police, Public Works, and Caltrans	Caltrans review bridges annually.
2)	Comply with State of California and federal requirements to assess the vulnerability of dams to damage from earthquakes, seiches, landslides, liquefaction, or security threats.	X							Public Works	Lagoon Valley Lake is inspected annually by the State Department of Dam Safety
3)	Encourage the cooperation of utility system providers and cities, counties, and other special districts to develop strong and effective mitigation strategies for infrastructure systems and facilities.	X							Public Works (City owned utility) has agreements with City of Fairfield and the Solano Irrigation District	City has agreements with the Solano Irrigation District and the City of Fairfield for our water supply deliveries.
4)	Retrofit or replace critical lifeline facilities and/or their backup facilities that are shown to be vulnerable to damage in natural disasters.	X							Public Works	City has recently constructed a new Police Station in 2005, and all four fire stations are relatively new and meet UBC standards applicable within the last 10 to 15 years.
5)	Support and encourage efforts of ***other*** (lifeline) 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.)	X							Fire, Police, and Public Works	We have cooperated with Caltrans in the retrofitting of the Alamo Drive Overcrossing and the Nut Tree Overcrossing.

Infrastructure Mitigation Strategies

6)	Plan for speeding the repair and functional restoration of lifeline systems through stockpiling of shoring materials, temporary pumps, surface pipelines, portable hydrants, and other supplies, such as those available through the Water Agency Response Network (WARN).	X							Fire and Public Works	Public Works Utilities Division has temporary pumps on standby.
7)	Engage in, support, and/or encourage research by others on measures to further strengthen transportation, water, sewer, and power systems so that they are less vulnerable to damage in disasters.	X							Public Works	Participation in regional transportation and utility committees. Annual bridge inspection program with Caltrans, where all bridges in the City are inspected (on and off of State ROW)
8)	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.	X							Public Works	City Hall, Police Building, Utility Plants, Corporation Yard, and two Fire Stations equipped with standby power
9)	Have back-up emergency power available for critical intersection traffic lights.	X							Public Works	Battery backup installed at all signalized intersections
10)	Develop unused or new pedestrian rights-of-way as walkways to serve as additional evacuation routes (such as fire roads in park lands).	X							Fire, Police, and Public Works	
11)	Coordinate with PG&E and others to investigate ways of minimizing the likelihood that power interruptions will adversely impact vulnerable communities, such as the disabled and the elderly.	X							Public Works and Community Development	PG&E. works with City to reduce outages to vulnerable populations. Current on-going Rule 20A projects to underground and modernize existing overhead PG&E and AT&T facilities

Infrastructure Mitigation Strategies

12)	Encourage replacing aboveground electric and phone wires and other structures with underground facilities, and use the planning-approval process to ensure that all new phone and electrical utility lines are installed underground.	X							Public Works and Community Development	Utility undergrounding is required on all new development projects per ordinance and City works with PG&E on undergrounding existing facilities. Current on-going Rule 20A projects to underground and modernize existing overhead PG&E and AT&T facilities.
13)	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.	X							Public Works	The Lagoon Valley Lake Dam is inspected annually
14)	Encourage communication between State OES, FEMA, and utilities related to emergencies occurring outside of the Bay Area that can affect service delivery in the region.	X							Fire, Police, and Public Works	On going training and communications
15)	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.	X							Fire	This information will be communcated through normal EOC operations
16)	Effectively utilize the Transportation Management Center (TMC), the staffing of which is provided by Caltrans, the CHP and MTC. The TMC is designed to maximize safety and efficiency throughout the highway system. It includes the Emergency Resource Center (ERC) which was created specifically for primary planning and procedural disaster management.	X							Public Works	Provided cameras and traffic loops to support TMC at two new overcrossings
INFR - b - Earthquakes										
1)	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.	X							Public Works	City works with Caltrans on funding for deficient City owned bridges and road structures

Infrastructure Mitigation Strategies

2)	Establish a higher priority for funding seismic retrofit of existing transportation and infrastructure systems (such as BART) than for expansion of those systems.						X			
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).							X	Fire and Public Works	
4)	Install specially-engineered pipelines in areas subject to faulting, liquefaction, earthquake-induced landsliding, or other earthquake hazard.							X	Fire and Public Works	
5)	Replace or retrofit water-retention structures that are determined to be structurally deficient.	X							Public Works	The City does not have any water storage reservoirs that are determined to be structurally deficient
6)	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).							X	Fire and Public Works	
7)	Install earthquake-resistant connections when pipes enter and exit bridges.							X	Public Works	
8)	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.	X							Public Works and Community Development	City complies with all applicable building and fire codes when constructing or significantly remodeling infrastructure facilities
9)	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.	X							Fire, Police, Public Works, and City Manager's Office	Part of the City's Emergency Operations Plan

Infrastructure Mitigation Strategies

10)	Examine the feasibility of developing a water-borne transportation "system" – comprised mainly of relatively inexpensive barges – across the Bay for use in the event of major earthquakes. Implementation of such a system could prove extremely useful in the event of structural failure of either the road-bridge systems or BART and might serve as an adjunct to existing transportation system elements in the movement of large numbers of people and/or goods.						X			
INFR - c - Wildfire										
1)	Ensure a reliable source of water for fire suppression (meeting acceptable standards for minimum volume and duration of flow) for existing and new development.	X							Public Works, Fire, and Community Development	City Standards and Water Master Plan/Land Use and Development Code
2)	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.	X							Public Works, Fire, and Community Development	City Standards and Water Master Plan/Land Use and Development Code
3)	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.	X							Public Works, Fire, and Community Development	City Standards and City Land Use and Development Code
4)	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.	X							Public Works, Fire, and Community Development	City Standards and City Land Use and Development Code
5)	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.	X							Public Works, Fire, and Community Development	City Standards and City Land Use and Development Code
6)	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.	X							Public Works, Fire, and Community Development	City Standards and City Land Use and Development Code

Infrastructure Mitigation Strategies

7)	Ensure adequate fire equipment road or fire road access to developed and open space areas.	X							Public Works, Fire, and Community Development	City Standards and City Land Use and Development Code
8)	Maintain fire roads and/or public right-of-way roads and keep them passable at all times.	X							Public Works and Fire	Fire Code
INFR - d - Flooding										
1)	Conduct a watershed analysis of runoff and drainage systems to predict areas of insufficient capacity in the storm drain and natural creek system.	X							Public Works	Storm Water Master Plan
2)	Develop procedures for performing a watershed analysis to look at the impact of development on flooding potential downstream, including communities outside of the jurisdiction of proposed projects.	X							Public Works and Community Development	City Standards and Storm Water Master Plan
3)	Conduct a watershed analysis at least once every three years.	X							Public Works and Community Development	Studies performed for all new development
4)	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).	X							Public Works and City Manager's Office	City works closely with the Solano County Water Agency to locate and maintain funding for flood control projects.
5)	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.			X					Public Works, Community Development, and City Manager's Office	Studied as part of Environmental Impact Review (EIR) process in new and existing areas as needed; funds needed for all projects range from $5 - $15 million total
6)	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.	X							Public Works	On going Maintenance Program
7)	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.	X							Public Works	On going Maintenance Program

Infrastructure Mitigation Strategies

8)	Enforce provisions under creek protection, stormwater management, and discharge control ordinances designed to keep watercourses free of obstructions and to protect drainage facilities to confirm with the Regional Water Quality Control Board's Best Management Practices.	X							Public Works	On going under our NPDES Program
9)	Develop an approach and locations for various watercourse bank protection strategies, including for example, (1) an assessment of banks to inventory areas that appear prone to failure, (2) bank stabilization, including installation of rip rap, (3) stream bed depth management using dredging, and (4) removal of out-of-date coffer dams in rivers and tributary streams.	X							Public Works	On going Maintenance Program
10)	Use reservoir sediment removal as one way to increase storage for both flood control and water supply.							X	Public Works	
11)	Elevate critical bridges affected by flooding to increase stream flow and maintain critical access and egress routes.							X	Public Works	
12)	Provide a mechanism to expedite the repair or replacement of levees that are vulnerable to collapse from earthquake-induced shaking or liquefaction, rodents, and other concerns, particularly those protecting critical infrastructure.							X	Public Works	
13)	Ensure that utility systems in new developments are constructed in ways that reduce or eliminate flood damage.	X							Public Works and Community Development	City Standards and Storm Water Master Plan
14)	Determine whether or not wastewater treatment plants are protected from floods, and if not, investigate the use of flood-control berms to not only protect from stream or river flooding, but also increasing plant security.	X							Public Works	The Wastewater Treatment Plant is designed to minimize flooding from local streams and has recently been reconstructed and expanded.
15)	Work cooperatively with water agencies, flood control districts, Caltrans, and local transportation agencies to determine appropriate performance criteria for watershed analysis.	X							Public Works and Community Development	On going coordination with the Solano County Water Agency

Infrastructure Mitigation Strategies

16)	Work for better cooperation among the patchwork of agencies managing flood control issues.	X							Public Works and Community	Coordination with Solano County Water Agency
17)	Work cooperatively with upstream communities to monitor creek and watercourse flows to predict potential for flooding downstream.	X							Public Works	Coordinating the installation of upstream rain and stream gauges with the Solano County Water Agency for early warning system
INFR - e - Landslides										
1)	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.	X							Public Works	The City avoids the installation of facilities in areas subject to ground failure
2)	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.	X							Public Works, Fire, and Community Development	City Standards and City Land Use and Development Code
INFR - f - Building Reoccupancy										
1)	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 structural engineers[1] 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 structural engineer is a California licensed structural engineer with relevant experience.						X		Community Development	
INFR - g - Public Education										
1)	Provide materials to the public related to planning for power outages.	X							Fire	Materials provided through Fire Public Education Program
2)	Provide materials to the public related to family and personal planning for delays due to traffic or road closures.	X							Public Works	Press release notifications on roadway projects involving closure or delays

Infrastructure Mitigation Strategies

3)	Provide materials to the public related to coping with reductions in water supply or contamination of that supply.	X							Public Works	Utilities Division has reference materials to cope with water supply reductions or contamination
4)	Provide materials to the public related to coping with disrupted storm drains, sewage lines, and wastewater treatment.							X	Public Works	
5)	Facilitate and/or coordinate the distribution of materials that are prepared by others, such as by placing materials in city or utility newsletters, or on community access channels, as appropriate.	X							Public Works, City Manager's Office, and Administrative Services	Part of Public Education Program includes placing materials in Utility Billings and on Government Access Channels

Health Mitigation Strategies

	Specific Mitigation Strategy	Existing Program	Very High	High	Moderate	Under Study	Not Applicable, Not Appropriate, or Not Cost Effective	Not Yet Considered	Responsible Agency or Department (Required if Existing Program, Very High, High, or Under Study)	Ordinance or Resolution # (if existing program), Estimated Cost and Possible Funding Agency (if high priority), Estimated Date of Completion (if study) OR Other Comments
HEAL - a - Hospitals and Other Critical Health Care Facilities										
1)	Work with critical health care facilities operators to ensure that critical facilities are structurally sound and have nonstructural systems designed to remain functional following disasters (as required for acute-care hospitals for earthquakes by State law).						X		Solano County Health	
2)	Encourage hospitals to work with the California Office of Statewide Health Planning and Development (OSHPD) to formalize arrangements with structural engineers to report to the hospital, assess damage, and determine if the buildings can be reoccupied. The program should be similar to San Francisco's Building Occupancy Resumption Program (BORP) that permits owners of buildings to hire qualified structural engineers to create building-specific post-disaster inspection plans and allows these engineers to become automatically deputized as inspectors for these buildings in the event of an earthquake or other disaster. OSHPD, rather than city/county building departments, has the authority and responsibility for the structural integrity of hospital structures.						X		Solano County Health	
3)	Ensure health care facilities are adequately prepared to care for victims with respiratory problems related to smoke and/or particulate matter inhalation.						X		Solano County Health	
4)	Ensure these health care facilities have the capacity to shut off outside air and be self-contained.						X		Solano County Health	
5)	Ensure that hospitals and other major health care facilities have auxiliary water and power sources.						X		Solano County Health	
6)	Work with health care facilities to institute isolation capacity should a need for them arise following a communicable disease epidemic.						X		Solano County Health	

Health Mitigation Strategies

7)	Develop printed materials, utilize existing materials (such as developed by FEMA and the American Red Cross), conduct workshops, and/or provide outreach encouraging employees of these critical health care facilities to have family disaster plans and conduct mitigation activities in their own homes.						X		Solano County Health	
HEAL - b - Ancillary Health-Related Facilities										
1)	Work with State of California licensing agencies to identify these ancillary facilities in your community.						X		Solano County Health	
2)	Encourage these facility operators to develop disaster mitigation plans.						X		Solano County Health	
3)	Encourage these facility operators to create, maintain, and/or continue partnerships with local governments to develop response and recovery plans.						X		Solano County Health	
HEAL - c - Interface with National and State Health Care Initiatives										
1)	Designate locations for the distribution of antibiotics to large numbers of people should the need arise, as required to be included in each county's Strategic National Stockpile Plan.						X			
2)	Ensure that you know the Metropolitan Medical Response System (MMRS) cities in your area. For example, Oakland and Fremont are the MMRS cities in Alameda County. MMRS cities are those cities that are provided with additional federal funds for organizing, equipping, and training groups of local fire, rescue, medical, and other emergency management personnel.	X							Sacramento and Oakland	info found on website
3)	Know if any National Disaster Medical System (NDMS) uniformed or non-uniformed personnel are within one-to-four hours of your community. These federal resources include veterinary, mortuary, and medical personnel.							X		
4)	Plan to utilize the State of California Department of Health Services laboratory in Richmond for confirmation of biological agencies and Department of Defense laboratories in Berkeley (Lawrence Berkeley National Laboratory) or Livermore (Lawrence Livermore National Laboratory and Sandia) for confirmation of radiological agents.							X		
HEAL - d - Environmental Health										

Health Mitigation Strategies

1)	Create discussion forums for food and health personnel, including, for example, medical professionals, veterinarians, and plant pathologists, to develop safety, security, and response strategies for food supply contamination.							X		
2)	Train appropriate personnel to understand that the Metropolitan Medical Response System (MMRS) cities in your area. For example, Oakland and Fremont are the MMRS cities in Alameda County. MMRS cities are those cities that are provided with additional federal funds for organizing, equipping, and training groups of local fire, rescue, medical, and other emergency management personnel.							X		
3)	Train appropriate personnel to know if any National Disaster Medical System (NDMS) uniformed or non-uniformed personnel are within one-to-four hours of your community. These federal resources include veterinary, mortuary, and medical personnel.							X		
4)	Train appropriate personnel to know to utilize the State of California Department of Health Services laboratory in Richmond for confirmation of biological agents and Department of Defense laboratories in Berkeley (Lawrence Berkeley National Laboratory) or Livermore (Lawrence Livermore National Laboratory and Sandia) for confirmation of radiological agents.							X		

Housing Mitigation Strategies

	Specific Mitigation Strategy	Existing Program	Very High	High	Moderate	Under Study	Not Applicable, Not Appropriate, or Not Cost Effective	Not Yet Considered	Responsible Agency or Department (Required if Existing Program, Very High, High, or Under Study)	Ordinance or Resolution # (if existing program), Estimated Cost and Possible Funding Agency (if high priority), Estimated Date of Completion (if study) OR Other Comments
		PLEASE CHECK ONLY ONE								
HSNG - a - Multi-Hazard										
1)	Be aware of past problems of inadequate hazard disclosure and work with real estate agents to improve enforcement of real estate disclosure requirements for those hazards covered by this plan, for example, by making those agents and the disclosure firms aware of the hazard maps incorporated in this plan and available on the ABAG web site at ***http://quake.abag.ca.gov/mitigation***, as well as locally developed maps.							X	Community Development	RDA First Time Home Buyer Education & Loan program
2)	Create incentives for owners of historic or architecturally significant residential buildings to undertake mitigation to levels that will minimize the likelihood that these buildings will need to be demolished after a disaster, particularly if those alterations conform to the federal Secretary of the Interior's *Guidelines for Rehabilitation.*						X		Community Development	Non-res masonry only. No ordinance or resolution. Implemented by internal policy only with agreement of the Redevelopment Agency - SB 242
HSNG - b - Single-Family Homes Vulnerable to Earthquakes										
1)	Utilize or recommend adoption of a retrofit standard that includes standard plan sets and construction details for voluntary bolting of homes to their foundations and bracing of outside walls of crawl spaces ("cripple" walls), such as that being developed by a committee representing the East Bay-Peninsula-Monterey Chapters of the International Code Council (ICC), California Building Officials (CALBO), the Structural Engineers Association of Northern California (SEAONC), the Northern California Chapter of the Earthquake Engineering Research Institute (EERI-NC), and ABAG's Earthquake Program.					X			Community Development	

Housing Mitigation Strategies

2)	Require engineered plan sets for retrofitting of heavy two-story homes with living areas over garages, as well as for split level homes, until standard plan sets and construction details become available.					X			Community Development	
3)	Require engineered plan sets for retrofitting of homes on steep hillsides.					X			Community Development	
4)	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.					X			Community Development	
5)	Encourage private retrofit contractors and home inspectors doing work in your area to take retrofit classes on a periodic basis(such as the FEMA-developed training classes offered by ABAG) on retrofitting of single-family homes.					X			Community Development	
6)	Conduct demonstration projects on common existing housing types demonstrating structural and nonstructural mitigation techniques as community models for earthquake mitigation.						X		Community Development	
7)	Provide retrofit classes or workshops for homeowners.						X		Community Development	
8)	Establish tool-lending libraries with common tools needed for retrofitting for use by homeowners with appropriate training.						X		Community Development	
9)	Provide financial incentives to owners of applicable homes to retrofit.	X								RDA Loan program (in place since 1988)
HSNG - c - Soft-Story Multifamily Residential Structures Vulnerable to Earthquakes										
1)	Require engineered plan sets for voluntary or mandatory soft-story retrofits until a standard plan set and construction details become available.						X			
2)	Adopt the 2003 International Existing Building Code, the 1997 UBC, or the latest applicable code standard for the design of voluntary or mandatory soft-story building retrofits.	X							Community Development	Land Use and Development Code

Housing Mitigation Strategies

3)	Work to educate condominium and apartment owners, local government staff, engineers, and contractors on soft-story retrofit procedures and incentives using materials such as those developed by ABAG (see ***http://quake.abag.ca.gov/fixit***) and the City of San Jose.							X	Community Development	
4)	Conduct an inventory of existing or suspected soft-story residential structures.							X	Community Development	
5)	Use the soft-story inventory to require owners to inform all existing tenants that they live in this type of building and the standard to which it may have been retrofitted, as well as require owners to inform tenants that they will live in this type of building prior to signing a lease.							X	Community Development	
6)	Use the soft-story inventory to require owners to inform all existing tenants that they should be prepared to live elsewhere following an earthquake if the building has not been retrofitted.							X	Community Development	
7)	Investigate and adopt appropriate financial, procedural, and land use incentives for owners of soft-story buildings to facilitate retrofit such as those developed by ABAG (see ***http://quake.abag.ca.gov/fixit***) .							X	Community Development	
8)	Explore development of local ordinances or State regulations to require or encourage owners of soft-story structures to strengthen them.							X	Community Development	
9)	Provide technical assistance in seismically strengthening soft-story structures.							X		
HSNG - d - Unreinforced Masonry Housing Stock										
1)	Continue to actively implement existing State law that requires cities and counties to maintain lists of the addresses of unreinforced masonry buildings and inform property owners that they own this type of hazardous structure.						X		Community Development	

Housing Mitigation Strategies

2)	Accelerate retrofitting of 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.						X		Community Development	Policy non-residential masonry
3)	Require owners to inform all existing tenants that they live in this type of building and the standard to which it may have been retrofitted, as well as require owners to inform tenants that they will live in this type of building prior to signing a lease.							X	Community Development	
4)	Require owners to inform all existing tenants that they should be prepared to live elsewhere following an earthquake even if the building has been retrofitted, for it has probably been retrofitted to a life-safety standard, not to a standard that will allow occupancy following major earthquakes.							X	Community Development	
HSNG - e - Other Privately-Owned Structurally Suspicious Residential Buildings and Earthquakes										
1)	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).	X							Community Development	RDA Rehab Loan program (in place since 1988) must include additional code violations
2)	Inventory non-ductile concrete, tilt-up concrete, and other privately-owned structurally suspicious residential buildings.						X		Community Development	
3)	Adopt the 2003 International Existing Building Code, the 1997 UBC, or the latest applicable code standard for the design of voluntary or mandatory retrofit of seismically vulnerable buildings.	X					X		Community Development	UBC Adopted
4)	Adopt one or more of the following strategies as incentives to encourage retrofitting of privately-owned structurally 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 and procedural incentives, or (f) technical assistance.	X							Community Development	RDA Rehab (B) (I) Low interest loans from Redevelopment
HSNG - f - New Construction and Earthquakes										

Housing Mitigation Strategies

1)	Continue to require that all new housing be constructed in compliance with structural requirements of the most recently adopted version of the *California Building Code*.	X							Community Development	UBC Adopted
2)	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.	X							Community Development	Ongoing training of Rehab Program staff
HSNG - g - Wildfire and Structural Fires										
1)	Increase efforts to reduce hazards in existing development in high wildfire hazard areas (identified as wildland-urban-interface fire-threatened communities or in areas exposed to high-to-extreme fire threat) through improving engineering design and vegetation management for mitigation, appropriate code enforcement, and public education on defensible space mitigation strategies.	X							Community Development, Fire	Municipal Code Section 8.04, Weed Abatement which includes day to day enforcement, as well as annual program, Land Use and Development Code
2)	Tie public education on defensible space and a comprehensive defensible space ordinance to a field program of enforcement.	X							Fire	FD Public Education Program
3)	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.	X							Community Development/Fire	Land Use and Development Code
4)	Develop financial incentives for homeowners to be "model" defensible space homes in neighborhoods that are wildland-urban- interface fire-threatened communities or in areas exposed to high-to-extreme fire threat.							X	Community Development	

Housing Mitigation Strategies

5)	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.	X							Community Development/Fire	PRC/Land Use and Development Code
6)	Adopt and/or amend, as needed, updated versions of the *California Building and Fire Codes* so that optimal fire-protection standards are used in construction and renovation projects.	X							Community Development/Fire	Land Use and Development Code
7)	Create a mechanism to enforce provisions of the *California Building and Fire Codes* and local housing codes that require the installation of smoke detectors and/or fire-extinguishing systems by making installation a condition of (a) finalizing a permit for any work on existing properties valued at over a fixed amount, such as $500 or $1000, and/or (b) a condition for the transfer of property if these changes are determined cost-effective strategies.	X							Community Development/Fire	Although not (a) or (b) Housing Authority conducts 1,200 smoke detector inspections per year of rental housing / Land Use and Development Code
8)	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.	X							Community Development	
9)	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.	X							Community Development	Land Use and Development Code
10)	Promote the installation of early warning fire alarm systems in homes wildland-urban-interface fire-threatened communities or in areas exposed to high-to-extreme fire threat connected to fire department communication systems.							X	Community Development	
11)	Establish a Fire Hazard Abatement District to fund reduction in fire risk of existing properties through vegetation management that includes reduction of fuel loads, use of defensible space, and fuel breaks.							X	Community Development	

Housing Mitigation Strategies

12)	Work with residents in rural-residential areas to ensure adequate access and evacuation in wildland-urban-interface fire-threatened communities or in areas exposed to high-to-extreme fire threat.						X		Community Development	
13)	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.						X		Community Development	
14)	Require fire sprinklers in all new or substantially remodeled multifamily housing, regardless of distance from a fire station.						X		Community Development	
15)	Require sprinklers in all mixed use development to protect residential uses from fires started in non-residential areas.						X		Community Development	
16)	Compile a list of high-rise and high-occupancy buildings which 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.						X		Community Development/Fire	No High Rises here
17)	Conduct periodic fire-safety inspections of all multi-family buildings, as required by State law.	X							Community Development/Fire	See 7
18)	Ensure that fire-preventive vegetation-management techniques and practices for creek sides and high-slope areas do not contribute to the landslide and erosion hazard.	X							Community Development/Public Works/Fire	Land Use and Development Code
19)	Create a mechanism to require the bracing of water heaters and flexible couplings on gas appliances, and/or (as specified under "a. 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.	X							Community Development	RDA Rehab Loans require bracing 18" elevation of water heaters UPC & UMC / Land Use and Development Code

Housing Mitigation Strategies

20)	Work with the State Fire Marshall, the California Seismic Safety, PEER, and other experts to identify and manage gas-related fire risks of soft-story residential or mixed use buildings that are prone to collapse and occupant entrapment consistent with the natural gas safety recommendations of Seismic Safety Commission Report SSC-02-03. **Note** - See http://www.seismic.ca.gov/pub/CSSC_2002-03_Natural%20Gas%20Safety.pdf. **Also note** - any values that are installed may need to have both excess flow and seismic triggers ("hybrid" valves).							X	Community Development	
HSNG - h - Flooding										
1)	To reduce flood risk, and thereby reduce the cost of flood insurance to property owners, work to qualify for the highest-feasible rating under the Community Rating System of the National Flood Insurance Program.	X							Community Development	Current practice
2)	Balance the housing needs of residents against the risk from potential flood-related hazards.	X							Community Development	Land Use and Development Code
3)	Ensure that new development pays its fair share of improvements to the storm drainage system necessary to accommodate increased flows from the development.	X							Community Development	Land Use and Development Code
4)	Provide sandbags and plastic sheeting to residents in anticipation of rainstorms, and deliver those materials to the disabled and elderly upon request.	X							Community Development	Vacaville Youth in Action (VYIA) assists disabled/elderly with sandbags Public Works
5)	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.	X							Community Development	DHR staff distribute outreach flyers throughout affected areas, as needed
6)	Apply floodplain management regulations for development in the floodplain and floodway.	X							Community Development	Land Use and Development Code
7)	Ensure that new subdivisions are designed to reduce or eliminate flood damage by requiring lots and rights-of-way are laid out for the provision of approved sewer and drainage facilities, providing on-site detention facilities whenever practicable.	X							Community Development	PRC

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8)	Encourage home and apartment owners to participate in home elevation programs.						X		Community Development	
9)	As funding opportunities become available, encourage home and apartment owners to participate in acquisition and relocation programs for areas within floodways.						X		Community Development	
10)	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.	X							Community Development	RDA First Time Homebuyer Education program does this
HSNG - i - Landslides and Erosion										
1)	Increase efforts to reduce landslides and erosion in existing and future development by improving appropriate code enforcement and use of applicable standards, such as those appearing in the *California Building Code*, California Geological Survey *Special Report 117 – Guidelines for Evaluating and Mitigating Seismic Hazards in California, American Society of Civil Engineers (ASCE) report Recommended Procedures for Implementation of DMG Special Publication 117: Guidelines for Analyzing and Mitigating Landslide Hazards in California, and the California Board for Geologists and Geophysicists Guidelines for Engineering Geologic Reports.* Such standards should cover excavation, fill placement, cut-fill transitions, slope stability, drainage and erosion control, slope setbacks, expansive soils, collapsible soils, environmental issues, geological and geotechnical investigations, grading plans and specifications, protection of adjacent properties, and review and permit issuance.	X							Community Development	Existing Program
2)	Increase efforts to reduce landslides and erosion in existing and future development through continuing education of design professionals on mitigation strategies.					X			Community Development	
HSNG - j - Building Reoccupancy										

Housing Mitigation Strategies

1)	Develop and enforce an ordinance for disaster-damaged structures to ensure that residential buildings are repaired in an appropriate and timely manner and retrofitted concurrently to avoid a recurrence.					X			Community Development	
HSNG - k - Public Education										
1)	Provide information to residents of your community on the availability of interactive hazard maps showing your community on ABAG's web site.	X							Community Development	DHR staff distribute outreach materials as needed. Staff also refer public to websites
2)	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.	X							Community Development/Fire	DHR Staff to participate as needed.
3)	Better inform residents of comprehensive mitigation activities, including elevation of appliances above expected flood levels, use of fire-resistant roofing and defensible space in high wildfire threat and wildfire-urban-interface areas, structural retrofitting techniques for older homes, and use of intelligent grading practices through workshops, publications, and media announcements and events.	X							Community Development/Fire	RDA Rehab Program addresses several of these issues
4)	Develop a public education campaign on the cost, risk, and benefits of earthquake, flood, and other hazard insurance.							X	Community Development	
5)	Use disaster anniversaries, such as April (Earthquake Month and the 1906 earthquake), September (9/11), and October (Loma Prieta earthquake and Oakland Hills fire), to remind the public on safety and security mitigation activities.	X							Community Development/Fire	Fire Prevention Week Activities
6)	Sponsor the formation and training of Community Emergency Response Teams (CERT) training. [Note – these programs go by a variety of names in various cities and areas.]	X							Police/Fire	Currently developing a CERT program

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7)	Include flood fighting technique session based on California Department of Water Resources training to the list of available public training classes offered by CERT.			X					Community Development	Seeking from $5,000 to $10,000
8)	Institute the neighborhood watch block captain and team programs outlined in the Citizen Corps program guide.	X							Police	Existing program
9)	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.						X		Community Development	
10)	Train homeowners to locate and shut off gas valves if they smell or hear gas leaking.	X							Community Development/Fire/PG&E	RDA First Time Homebuyer Education program does this/Existing Public Education Program
11)	Distribute NOAA weather radios to high-risk, limited-income families living in flood hazard areas.							X	Community Development/Fire/Public Works	
12)	Develop a program to provide at-cost NOAA weather radios to residents of flood hazard areas.							X	Community Development	
13)	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.)							X	Community Development	DHR utilizes & refers public to ABAG website, as appropriate
14)	Develop a "Maintain-a-Drain" campaign, similar to that of the City of Oakland, encouraging businesses and residents to keep storm drains in their neighborhood free of debris.	X							Public Works	Existing Public Education Program
15)	Encourage the formation of a community- and neighborhood-based approach to wildfire education and action through local Fire Safe Councils and the *Fire Wise Program*.							X	Fire	
16)	Inform shoreline-property owners of the possible long-term economic threat posed by rising sea levels.						X		Community Development	

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17)	Develop and distribute culturally appropriate materials related to disaster mitigation and preparedness, such as those on the http://www.preparenow.org website.							X	Community Development	DHR staff distribute outreach flyers, as needed

Economy Mitigation Strategies

	Specific Mitigation Strategy	PRIORITY (CHECK ONLY ONE) Existing Program	Very High	High	Moderate	Under Study	Not Applicable, Not Appropriate, or Not Cost Effective	Not Yet Considered	Responsible Agency or Department (Required if Existing Program, Very High, High, or Under Study)	Ordinance or Resolution # (if existing program), Estimated Cost and Possible Funding Agency (if high priority), Estimated Date of Completion (if study) OR Other Comments
ECON - a - Multi-Hazard										
1)	Be aware of past problems of inadequate hazard disclosure and work with real estate agents to improve enforcement of real estate disclosure requirements for those hazards covered by this plan, for example, by making those agents and the disclosure firms aware of the hazard maps incorporated in this plan and available on the ABAG web site at ***http://quake.abag.ca.gov/mitigation***, as well as locally developed maps.				X					Disclosure required by Cal. Pub. Res. Code, Cal. Civil Code, Cal. Government Code
2)	Create incentives for owners of historic or architecturally significant residential buildings to undertake mitigation to levels that will minimize the likelihood that these buildings will need to be demolished after a disaster, particularly if those alterations conform to the federal Secretary of the Interior's *Guidelines for Rehabilitation.*	X							Community Development	Non-res masonry only. No ordinance or resolution. Implementd by internal policy only w/agreement of Redevelopment Agency SB242
ECON - b - Soft-Story Commercial Buildings Vulnerable to Earthquakes										
1)	Require engineered plan sets for voluntary or mandatory soft-story retrofits until a standard plan set and construction details become available.					X				
2)	Adopt the 2003 International Existing Building Code, the 1997 UBC, or the latest applicable code standard for the design of voluntary or mandatory soft-story building retrofits.	X							Community Development	Land Use & Development Code
3)	Work to educate building owners, local government staff, engineers, and contractors on soft-story retrofit procedures and incentives using materials such as those developed by ABAG (see ***http://quake.abag.ca.gov/fixit***) and the City of San Jose.					X				

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4)	Conduct an inventory of existing or suspected soft-story commercial and industrial structures.					X				
5)	Use the soft-story inventory to require owners to inform all existing tenants that they work in this type of building and the standard to which it may have been retrofitted, as well as require owners to inform tenants that they will work in this type of building prior to signing a lease.					X				
6)	Use the soft-story inventory to require owners to inform all existing tenants that they should be prepared to work elsewhere following an earthquake if the building has not been retrofitted.					X				
7)	Investigate and adopt appropriate financial, procedural, and land use incentives for owners of soft-story buildings to facilitate retrofit.					X				
8)	Explore development of local ordinances or State regulations to require or encourage owners of soft-story structures to strengthen them.					X				
9)	Provide technical assistance in seismically strengthening soft-story structures.					X				
ECON - c - Unreinforced Masonry Buildings in Older Downtown Areas										
1)	Continue to actively implement existing State law that requires cities and counties to maintain lists of the addresses of unreinforced masonry buildings and inform property owners that they own this type of hazardous structure.	X								
2)	Accelerate retrofitting of 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.				X					
3)	Require owners to inform all existing tenants that they work in this type of building and the standard to which it may have been retrofitted, as well as require owners to inform tenants that they will work in this type of building prior to signing a lease.					X				

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4)	Require owners to inform all existing tenants that they should be prepared to work elsewhere following an earthquake even if the building has been retrofitted, for it has probably been retrofitted to a life-safety standard, not to a standard that will allow occupancy following major earthquakes.							X		
ECON - d - Privately-Owned Structurally Suspicious Buildings										
1)	Inventory non-ductile concrete, tilt-up concrete, and other privately-owned structurally suspicious buildings.					X				
2)	Adopt the 2003 International Existing Building Code, the 1997 UBC, or the latest applicable code standard for the design of voluntary or mandatory retrofit of seismically vulnerable buildings.	X							Community Development	Land Use & Development Code
3)	Adopt one or more of the following strategies as incentives to encourage retrofitting of privately-owned structurally suspicious 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 and procedural incentives, or (f) technical assistance.	X							Community Development	Land Use & Development Code
ECON - e - Wildfire and Structural Fires										
1)	Increase efforts to reduce fire in existing development through improving engineering design and vegetation management for mitigation, appropriate code enforcement, and public education on mitigation strategies.	X							Fire Department	Land Use & Development Code
2)	Require that new business and office buildings in high fire hazard areas be constructed of fire-resistant building materials and incorporate fire-resistant design features (such as minimal use of eaves, internal corners, and open first floors) to increase structural survivability and reduce ignitability.	X							Community Development, Fire	Land Use & Development Code
3)	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.	X							Community Development, Fire	Land Use & Development Code

Economy Mitigation Strategies

4)	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 by making installation a condition of (a) finalizing a permit for any work on existing properties valued at over a fixed amount, such as $500 or $1000, and/or (b) on any building over 75 feet in height, and/or (b) as a condition for the transfer of property.							x	Fire	
5)	Expand existing vegetation management programs in commercial and/or industrial areas.	X							Housing & Redevelopment	Vacaville Municipal Code
6)	Establish a Fire Hazard Abatement District to fund reduction in fire risk of existing properties through vegetation management that includes reduction of fuel loads, use of defensible space, and fuel breaks.	x							Housing & Redevelopment	Vacaville Municipal Code
7)	Establish a Fire Hazard Abatement District to fund fire-safety inspections of private properties, roving firefighter patrols on high fire-hazard days, and public education efforts.							X	Fire	
8)	Compile a list of 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.	X							Fire	Fire Department Policy
9)	Conduct periodic fire-safety inspections of all commercial and institutional buildings.	X							Fire	Fire Department Policy
10)	Work with the State Fire Marshall, the California Seismic Safety, PEER, and other experts to identify and manage gas-related fire risks of soft-story mixed use buildings that are prone to collapse and occupant entrapment consistent with the natural gas safety recommendations of Seismic Safety Commission Report SSC-02-03. **Note** - See http://www.seismic.ca.gov/pub/CSSC_2002-03_Natural%20Gas%20Safety.pdf. **Also note** - any values that are installed may need to have both excess flow and seismic triggers ("hybrid" valves).							x	Fire	

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11)	Ensure that fire-preventive vegetation-management techniques and practices for creek sides and high-slope areas do not contribute to the landslide and erosion hazard.	X							Public Works	Current practice
12)	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.							X	Fire	
ECON - f - Flooding										
1)	To reduce flood risk, thereby reducing the cost of flood insurance to property owners, work to qualify for the highest-feasible rating under the Community Rating System of the National Flood Insurance Program.	X							Public Works	Storm Water Master Plan
2)	Balance the needs for commercial and industrial development against the risk from potential flood-related hazards.				X				Public Works, Community Development	City Standards & Land Use and Development Code
3)	Ensure that new 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.	X							Public Works, Community Development	Land Use & Development Code/ Development Impact Fees
4)	Provide sandbags and plastic sheeting to businesses in anticipation of rainstorms, and deliver those materials to the disabled and elderly upon request.	X							Public Works	Sandbags, not plastic sheeting
5)	Provide public information on locations for obtaining sandbags and deliver those sandbags to those various locations throughout a city and/or county.	X							Public Works	Current practice
6)	Apply floodplain management regulations for development in the floodplain and floodway.	X							Community Development	Land Use & Development Code
7)	Encourage business owners to participate in building elevation programs.							x	Community Development	
8)	Encourage business owners to participate in acquisition and relocation programs for areas within floodways.						X		Public Works	

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9)	Require an annual inspection of approved flood-proofed buildings to ensure that (a) all flood-proofing components will operate properly under flood conditions and (b) all responsible personnel are aware of their duties and responsibilities as described in their building's *Flood Emergency Operation Plan* and *Inspection & Maintenance Plan*.							x	Community Development	
ECON - g - Landslides and Erosion										
1)	Increase efforts to reduce landslides and erosion in existing and future development by improving appropriate code enforcement and use of applicable standards, such as those appearing in the *California Building Code*, California Geological Survey *Special Report 117 – Guidelines for Evaluating and Mitigating Seismic Hazards in California, American Society of Civil Engineers (ASCE) report Recommended Procedures for Implementation of DMG Special Publication 117: Guidelines for Analyzing and Mitigating Landslide Hazards in California, and the California Board for Geologists and Geophysicists Guidelines for Engineering Geologic Reports.* Such standards should cover excavation, fill placement, cut-fill transitions, slope stability, drainage and erosion control, slope setbacks, expansive soils, collapsible soils, environmental issues, geological and geotechnical investigations, grading plans and specifications, protection of adjacent properties, and review and permit issuance.	X							Community Development	Land Use & Development Code, Building Code
2)	Increase efforts to reduce landslides and erosion in existing and future development through continuing education of design professionals on mitigation strategies.							x	Community Development	
ECON - h - Construction										
1)	Continue to require that all new commercial and industrial buildings be constructed in compliance with structural requirements of the most recently adopted version of the *California Building Code*.	X							Community Development	Land Use & Development Code

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2)	Conduct appropriate employee training and support continued education to ensure enforcement of construction standards.	x							Fire/Public Works/Community Development	On-going
3)	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.							X		
ECON - i - Building Reoccupancy										
1)	Institute an aggressive 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.	X							Housing and Redevelopment	
2)	Actively notify owners of historic or architecturally significant buildings of the availability of the local BORP-type program and encourage them to participate to ensure that appropriately qualified structural engineers are inspecting their buildings, thus reducing the likelihood that the buildings will be inappropriately evaluated following a disaster.						x		Housing and Redevelopment	
3)	Actively notify owners of educational facility buildings of the availability of the local BORP-type program and encourage them to participate to ensure that appropriately qualified structural engineers are inspecting their buildings, thus reducing the likelihood that the buildings will be inappropriately evaluated following a disaster.						X			
4)	Allow owners to participate in a BORP-type program as described above, but not actively encourage them to do so.						X			
5)	Develop and enforce an ordinance for disaster-damaged structures to ensure that damaged buildings are repaired in an appropriate and timely manner.						X			

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6)	Establish preservation-sensitive measures for the repair and reoccupancy of historically significant 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.							x		
ECON - j - Public Education										
1)	Provide information to business owners and employees on the availability of interactive hazard maps on ABAG's web site.							x		
2)	Develop printed materials, utilize existing materials (such as developed by FEMA and the American Red Cross), conduct workshops, and/or provide outreach encouraging businesses' employees to have family disaster plans that include drop-cover-hold earthquake drills, fire and storm evacuation procedures, and shelter-in-place emergency guidelines.			x					Fire	Have some components in Fire Pub Ed program now
3)	Develop printed materials, conduct workshops, and provide outreach to Bay Area businesses focusing on business continuity planning.							x		
4)	Better inform Bay Area 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.							X		
5)	Sponsor the formation and training of Community Emergency Response Teams (CERT) training through partnerships with local businesses. [Note – these programs go by a variety of names in various cities and areas.]	x							Fire/Police	Existing program

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6)	Assist businesses in the development of defensible space through the use of, for example, "tool libraries" for weed abatement tools, roadside collection and/or chipping services (for brush, weeds, and tree branches) in wildland-urban-interface fire-threatened communities or in areas exposed to high-to-extreme fire threat.						X		Code Compliance (H&R)	
7)	Make use of the materials developed by others (such as found on ABAG's web site at ***http://quake.abag.ca.gov/business***) to increase mitigation activities related to earthquakes. ABAG plans to continue to improve the quality of those materials over time.					X			City Managres office	Links have been added to City website
8)	Develop a "Maintain-a-Drain" campaign, similar to that of the City of Oakland, encouraging businesses and residents to keep storm drains in their neighborhood free of debris.					X			Public Works	
9)	Encourage the formation of a community-based approach to wildfire education and action through local Fire Safe Councils and the *Fire Wise Program*.							x	Fire	
10)	Encourage businesses and laboratories handling hazardous materials or pathogens increase security to a level high enough to create a deterrent to crime and terrorism, including active implementation of "cradle-to-grave" tracking systems.							x		
11)	Encourage joint meetings of security and operations personnel at major employers to develop innovative ways for these personnel to work together to increase safety and security.							x		
12)	Inform shoreline-property owners of the possible long-term economic threat posed by rising sea levels.						X			
13)	Develop and distribute culturally appropriate materials related to disaster mitigation and preparedness, such as those on the http://www.preparenow.org website.				x				Fire	

Government Mitigation Strategies

	Specific Mitigation Strategy	Priority (CHECK ONLY ONE) Existing Program	Very High	High	Moderate	Under Study	Not Applicable, Not Appropriate, or Not Cost Effective	Not Yet Considered	Responsible Agency or Department (Required if Existing Program, Very High, High, or Under Study)	Ordinance or Resolution # (if existing program), Estimated Cost and Possible Funding Agency (if high priority), Estimated Date of Completion (if study) OR Other Comments
GOVT - a - Focus on Critical Facilities										
1)	Assess the vulnerability of critical facilities (such as city halls, fire stations, community service centers, seaports, and airports) to damage in natural disasters and make recommendations for appropriate mitigation.	x							Public Works	All current facilities are designed to meet current seimic standards. The City has relatively new Fire Stations and a new Police Department Building in 2005.
2)	Retrofit or replace critical facilities that are shown to be vulnerable to damage in natural disasters.						x			The City has relatively new Fire Stations and a new Police Department Building in 2005.
3)	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.							x		
4)	Conduct comprehensive programs to identify and mitigate problems with facility contents, architectural components, and equipment that will prevent critical buildings from being functional after major natural disasters.	x							Public Works	Risk Manager routinely inspects City facilties for hazards
5)	Encourage joint meetings of security and operations personnel at critical facilities to develop innovative ways for these personnel to work together to increase safety and security.					x			Public Works	The feasibility and logistics of survellance cameras is being considered for water facilities.
6)	Install micro and/or surveillance cameras around critical public assets tied to web-based software, and develop a surveillance protocol to monitor these cameras.							x	Public Works	

Government Mitigation Strategies

7)	Identify and undertake cost-effective retrofit measures on critical facilities (such as moving and redesigning air intake vents and installing blast-resistant features) when these buildings undergo major renovations.							x	Public Works	
8)	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.							x	Public Works	City has one very small damm on Lagoon Valley Lake
9)	As a secondary focus, assess the vulnerability of non-critical facilities to damage in natural disasters based on occupancy and structural type, make recommendations on priorities for structural improvements or occupancy reductions, and identify potential funding mechanisms.				x				Public Works	Land Use and Development Code
10)	Ensure that government-owned facilities are subject to the same or more stringent regulations as imposed on privately-owned development.	x							Public Works	Land Use and Development Code
11)	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.	x							Public Works	Land Use and Development Code
12)	Prior to acquisition of property to be used as a critical facility, conduct a study to ensure the absence of significant hazards.	x							Public Works	Studies are conducted on all City purchased propoerty
GOVT - b - Maintain and Enhance Local Government's Emergency Response and Recovery Capacity										
1)	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.	X							City Manager, Fire, Police, Public Works	City Emergency Operations Manual
2)	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.							x		Public Works

Government Mitigation Strategies

3)	Establish a goal for the resumption of local government services that may vary from function to function.	X							City Manager	Emergency Operations Manual
4)	Develop a plan for short-term and intermediate-term sheltering of impacted residents.	X							Housing & Redevelopment, Red Cross	Wiil work with Red Cross
5)	Periodically assess the need for new or relocated fire or police stations and other emergency facilities, changes in staffing levels, and additional or updated supplies, equipment, technologies, and in-service training classes.	X							Fire, Police, Public Works	Current practice
6)	Ensure that fire and police department personnel have adequate radios, breathing apparatuses, protective gear, and other equipment to respond to a major disaster.	X							Fire, Police, Public Works	Current practice
7)	Develop and maintain a system of interoperable communications for first responders from cities, counties, special districts, state, and federal agencies.	X							Fire, Police, Public Works, Solano County Command Vehicle	Currently implementing a Countywide system
8)	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.	X							IT Division	existing program
9)	Purchase command vehicles for use as mobile command/EOC vehicles if current vehicles are unsuitable or inadequate.	X							Public Works	On-Going Fleet Program
10)	Maintain the local government's emergency operations center in a fully functional state of readiness.	X							Fire/Police	Current practice
11)	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.				X				Fire, Police	Current practice
12)	Maintain and update as necessary the local government's Standardized Emergency Management System Plan.	X							Fire	Emergency Operations Plan

Government Mitigation Strategies

13)	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.	X							Fire	Mutual Aid Agreements
14)	Install an alert and warning system with outdoor sirens, coordinating them, to the extent possible, with those of neighboring jurisdictions.				X				Fire, Public Works	utilzing phone based system now
15)	Conduct periodic tests of the alerting and warning system's outdoor sirens no less frequently than once per month.						X			
16)	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.	X							Community Development	Land Use & Development Code
17)	Monitor weather during times of high fire risk using, for example, weather stations tied into police and fire dispatch centers.	X							Fire	Current practice
18)	Establish regional protocols on how to respond to the NOAA Monterey weather forecasts, such as the identifying types of closures, limits on work that could cause ignitions, and prepositioning of suppression forces). A multi-agency coordination of response also helps provide unified messages to the public about how they should respond to these periods of increased fire danger.							X		
19)	Increase local patrolling during periods of high fire weather.	X							Fire	FD SOG
20)	Create and maintain an automated system of rain and flood gauges that is web enabled and publicly accessible.	X							Public Works	Current practice
21)	Place remote sensors in strategic locations for early warning of hazmat releases or use of weapons of mass destruction.							X		
22)	Investigate the use of phone-based warning systems for selected geographic areas.	X							Fire, Police, Public Works	Use County system now, currently purchasing our own
23)	Review and update, as necessary, procedures pursuant to the *State Dam Safety Act* for the emergency evacuation of areas located below major water-storage facilities.						X			

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24)	Develop procedures for the emergency evacuation of areas identified on tsunami evacuation maps as these maps become available.						X			
25)	Develop a business continuity plan that includes back-up storage of vital records, such as essential medical records and financial information.	x							Admin Services	IT Dept. has plan in place
GOVT - c - Participate in National, State, Multi-Jurisdictional and Professional Society Efforts to Identify and Mitigate Hazards										
1)	Promote information sharing among overlapping and neighboring local governments, including cities, counties, and special districts, as well as utilities.	X							All Departments	On-going - including cooperation with ABAG and State Agencies
2)	Recognize that emergency services is more than the coordination of police and fire response, for it also includes planning activities with providers of water, food, energy, transportation, financial, information, and public health services.	X							All Departments	On-going - including cooperation with ABAG and State Agencies
3)	Recognize that a multi-agency approach is needed to mitigate flooding by having flood control districts, cities, counties, and utilities meet at least annually to jointly discuss their a capital improvement programs for most effectively reducing the threat of storm-induced flooding.							X		
4)	As new flood-control projects are completed, request that FEMA revise its flood-insurance rate maps and digital geographic information system data to reflect flood risks as accurately as possible.	X							Public Works	
5)	Participate in FEMA's National Flood Insurance Program.	X							Public Works	
6)	Participate in multi-agency efforts to mitigate fire threat, such as the Hills Emergency Forum (in the east Bay), various *FireSafe* Council programs, and city-utility task forces.							X		
7)	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.	X							Solano County	Environmental Health Regulates

Government Mitigation Strategies

8)	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.							X		
9)	Conduct and/or promote attendance at local or regional hazard conferences and workshops for elected officials to educate the officials on the critical need for programs in mitigating earthquake, wildfire, flood, and landslide hazards.	X							Fire, Police, City Manager, Public Works, Community Development	As Needed
10)	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.							X		

Education Mitigation Strategies

	Specific Mitigation Strategy	PRIORITY (CHECK ONLY ONE) Existing Program	Very High	High	Moderate	Under Study	Not Applicable, Not Appropriate, or Not Cost Effective	Not Yet Considered	Responsible Agency or Department (Required if Existing Program, Very High, High, or Under Study)	Ordinance or Resolution # (if existing program), Estimated Cost and Possible Funding Agency (if high priority), Estimated Date of Completion (if study) OR Other Comments
EDUC - a - Focus on Critical Facilities										
1)	Assess the vulnerability of critical education facilities to damage in natural disasters and make recommendations for appropriate mitigation.						X		Local School District	
2)	Retrofit or replace critical education facilities that are shown to be vulnerable to damage in natural disasters.						X		Local School District	
3)	Conduct comprehensive programs to identify and mitigate problems with facility contents, architectural components, and equipment that will prevent critical buildings from being functional after major disasters.						X		Local School District	
4)	As a secondary focus, assess the vulnerability of non-critical educational facilities to damage in natural disasters based on occupancy and structural type, make recommendations on priorities for structural improvements or occupancy reductions, and identify potential funding mechanisms.						X		Local School District	

Education Mitigation Strategies

5)	Participate in or facilitate adoption of a program to formalize arrangements with structural engineers to report to the district, assess damage, and determine if the buildings can be reoccupied. The program should be similar to San Francisco's Building Occupancy Resumption Program (BORP) that permits owners of buildings to hire qualified structural engineers to create building-specific post-disaster inspection plans and allows these engineers to become automatically deputized as inspectors for these buildings in the event of an earthquake or other disaster. Unlike the buildings of most special districts, however, these plans should be developed with the review and guidance of the Division of the State Architect because this agency has the authority and responsibility for the structural integrity of these structures.						X		Local School District	
EDUC - b - Use of Educational Facilities as Emergency Shelters										
1)	Work cooperatively with the American Red Cross and others to set up memoranda of understanding for use of education facilities as emergency shelters following disasters.	X							Fire and Local School District	Contained in Emergency Operations Plan
2)	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.							X		
3)	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.							X		
EDUC - c - Use of Schools as Conduits for Information to Families About Emergencies										

Education Mitigation Strategies

1)	Work on and/or support efforts by schools, local governments, and other agencies to utilize their unique ability to reach families through educational materials on hazards, mitigation, and preparedness, particularly after disasters and at the beginning of the school year. These efforts will not only make the entire community more disaster-resistant, but speed the return of schools from use as shelters to use as teaching facilities.							X		
2)	Work on and/or support joint efforts of schools and fire jurisdictions to develop plans for evacuation or sheltering in place of school children during periods of high fire danger, thereby recognizing that overloading of streets near schools by parents attempting to pick up their children during these periods can restrict access by fire personnel and equipment.							X		
3)	Offer the 20-hour basic CERT training to teachers and after-school personnel.							X		
4)	Offer the 20-hour basic 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.							X		
5)	Offer the 20-hour basic CERT training course through the Adult School system and/or through the Community College system.							X		
6)	Develop and maintain the capacity for schools to take care of the students for the first 48 hours after a disaster, and notify parents that this capacity exists.							X		
7)	Develop and distribute culturally appropriate materials related to disaster mitigation and preparedness, such as those on the http://www.preparenow.org website.							X		

Environment Mitigation Strategies

	Specific Mitigation Strategy	Priority (CHECK ONLY ONE) Existing Program	Very High	High	Moderate	Under Study	Not Applicable, Not Appropriate, or Not Cost Effective	Not Yet Considered	Responsible Agency or Department (Required if Existing Program, Very High, High, or Under Study)	Ordinance or Resolution # (if existing program), Estimated Cost and Possible Funding Agency (if high priority), Estimated Date of Completion (if study) OR Other Comments
ENVI - a - Environmental Sustainability and Pollution Reduction										
1)	Continue to enforce State-mandated requirements, such as the *California Environmental Quality Act*, to ensure that mitigation activities for hazards, such as vegetation clearance programs for fire threat and seismic retrofits, are conducted in a way that reduces environmental degradation such as air quality impacts, noise during construction, and loss of sensitive habitats and species, while respecting the community value of historic preservation.	X							Comm Dev. In conjunction with Fire and Public Works	Land Use and Development Code - Chapter 14.03 - Fire protection standards, adopted by City Council
2)	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.	X							Comm. Dev.	Land Use & Development Code (see above)
3)	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.	X							Comm. Dev. In conjunction with AQMD	Chapter 14.03 CEQA Review
4)	Develop and implement a comprehensive program for watershed maintenance, optimizing forest health with water yield to balance water supply, flooding, fire, and erosion concerns.	X							Comm. Dev. Public Works Utilities & Maintenance	Land Use & Development Code

Environment Mitigation Strategies

5)	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 and maintains the viability of living rivers.	X							Comm. Dev. / SCWA	
6)	Stay informed of emerging scientific information on the subject of rising sea levels, especially on additional actions that local governments can take to mitigate this hazard.		X						Public Works	
7)	Monitor the science associated with global warming to be able to act promptly when data become available to warrant special design and engineering of government-owned facilities located in low-lying areas, such as wastewater treatment plants, ports, and airports.							x		
8)	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.	X							Public Works/Community Development	Land Use and Development Code
9)	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.	X							Community Development	Land Use and Development Code
10)	Explore ways to require that hazardous materials stored in the flood zone be elevated or otherwise protected from flood waters.							X	County EMD	
11)	Enforce and/or comply with the hazardous materials requirements of the State of California Certified Unified Program Agency (CUPA).						x		Solano Couinty Environmental Health	
12)	Provide information on hazardous waste disposal and/or drop off locations.	X							Public Works	Standard Practice
13)	Develop and implement a program to control invasive and exotic species that contribute to fire and flooding hazards (such as eucalyptus, cattails, and cordgrass).							x		

Environment Mitigation Strategies

14)	Enforce provisions under creek protection, stormwater management, and discharge control ordinances designed to keep watercourses free of obstructions and to protect drainage facilities to confirm with the Regional Water Quality Control Board's Best Management Practices.	X							Community Development & Public Works	Chapters 14.18 and 14.19 of Land Use & Development Code (Grading and Creekbank Protection)
ENVI - b - Agricultural and Aquaculture Resilience										
1)	Maintain a variety of crops in rural areas of the region to increase agricultural diversity and crop resiliency.						x			
2)	Promote and maintain the public-private partnerships dedicated to preventing the introduction of agricultural pests into regionally-significant crops, such as the glassy-winged sharpshooter into vineyards.	X							County Ag. Comm.	
3)	Remove septic tanks and other sources of contamination adjacent to economically-significant aquacultural and agricultural resources.						x		County	
4)	Encourage livestock operators to develop an early-warning system to detect animals with communicable diseases (due to natural causes or bioterrorism).						x		County	

Land Use Mitigation Strategies

	Specific Mitigation Strategy	Existing Program	Very High	High	Moderate	Under Study	Not Applicable, Not Appropriate, or Not Cost Effective	Not Yet Considered	Responsible Agency or Department (Required if Existing Program, Very High, High, or Under Study)	Ordinance or Resolution # (if existing program), Estimated Cost and Possible Funding Agency (if high priority), Estimated Date of Completion (if study) OR Other Comments
		(CHECK ONLY ONE)								
LAND - a - Earthquake Hazard Studies for New Developments										
1)	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. (This Act is intended to deal with the ***specific*** hazard of active faults that extend to the earth's surface, creating a surface rupture hazard.)						x		Community Development	No Alquist-Priolo Zones in Vacaville
2)	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.	X							Community Development Building Division	Land Use & Development Code Chapter 14.19 - UBC provisions
3)	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.	X							Community Development through CEQA review	Land Use & Development Code Chapter 14.19 - UBC provisions
4)	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.	X							Community Development Building Division & Engineering review	Land Use & Development Code Chapter 14.19 - UBC provisions

Land Use Mitigation Strategies

5)	Support and/or facilitate efforts by the California Geological Survey to complete the earthquake-induced landslide and liquefaction mapping for the Bay Area.	X								
6)	Require that local government reviews of geologic and engineering studies are conducted by appropriately trained and credentialed personnel.	X							Community Development Public Works	Project review process
LAND - b - Wildland and Structural Fires										
1)	Review development proposals to ensure that they incorporate required and appropriate fire-mitigation measures, including adequate provisions for occupant evacuation and access by emergency response	X							Community Development & Fire through project review	Land Use & Development Code requirements
2)	Develop a clear legislative and regulatory framework at both the state and local levels to manage the wildland-urban-interface consistent with *Fire Wise* and sustainable community principles.	X							Community Development & Fire	Fire Protection standards adopted by City Council
LAND - c - Flooding										
1)	Establish and enforce requirements for new development so that site-specific designs and source-control techniques are used to manage peak stormwater runoff flows and impacts from increased runoff volumes.	X							Community Development & Public Works	Land Use & Development Code requirements, 14.18 CEQA review
2)	Incorporate FEMA guidelines and suggested activities into local government plans and procedures for managing flood hazards.	X							Community Development & Public Works	Land Use & Development Code Chapter 14.19
3)	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).	X							Community Development, Public Works, SCWA	General Plan Policies, Land Use & Development Code requirements, 14.18, CEQA Analysis, Chapter 14.18
4)	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*.	X							Community Development - Building/City Engineer	
LAND - d - Landslides and Erosion										

Land Use Mitigation Strategies

1)	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.	X							Community Development	Project reviews Chapter 14.19, Land Use & Development Code
2)	Require that local government reviews of these investigations are conducted by appropriately trained and credentialed personnel.	X							City Engineer, Building Official	Standard practice
3)	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.	X							Community Development	General Plan Policies required by Land Use & Development Code Chapter 14.19
4)	Establish and enforce provisions under the creek protection, storm water management, and discharge control ordinances designed to control erosion and sedimentation.	X							Community Development	General Plan policies. Land Use & Development Code
5)	Establish requirements in zoning ordinances to address hillside development constraints, especially in areas of existing landslides.	X							Community Development	Land Use & Development Code requirements
LAND - e - Hillside - Multi-Hazard										
1)	Establish a buffer zone between residential properties and landslide or wildfire hazard areas.	x							Community Development	Land Use & Development Code requirements
2)	Discourage, add additional mitigation strategies, or prevent construction on slopes greater than a set percentage, such as 15%, due to landslide or wildfire hazard concerns.	X							Community Development	25% slope restriction in General Plan and Land Use & Development Code Chapter 14.19
LAND - f - Smart Growth to Revitalize Urban Areas and Promote Sustainability										
1)	Prioritize retrofit of infrastructure that serves urban areas over constructing new infrastructure to serve outlying areas.							X		
2)	Work to retrofit homes in older areas to provide safe housing close to job centers.	X							Community Development	General Plan & Land Use & Development code residential overlay zoning
3)	Work to retrofit older downtown areas to protect architectural diversity and promote disaster-resistance.							X		

Land Use Mitigation Strategies

4)	Protect as open space areas susceptible to extreme hazards.	X							Community Development	General Plan & Land Use & Development Code policies
5)	Provide new buffers and preserve existing buffers between development and existing users of large amounts of hazardous materials, such as major	X							Community Development	Existing regulations required buffers