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

City of Menlo Park

# City of Menlo Park

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## Introduction

The City of Menlo Park, an average-size city in San Mateo County, California. Menlo Park, incorporated in 1927, is situated on the San Francisco Peninsula midway between San Francisco and San Jose. The municipality of Menlo Park covers 19 square miles. The City has a population of 32,026 people, based on the 2010 census<sup>1</sup>. Several Menlo Park businesses play an important role in providing regional services, some of the largest employers in the non-manufacturing area are: Facebook and Stanford Research Institute. The total General Fund Operating Budget in fiscal year 2010-11 is \$37,358,599. The total City operating budget for all funds is \$86,515,538, and for Capital projects is \$13,773,474. The City employs 236.75 full-time equivalents and approximately 150 seasonal and part-time employees. While the City provides local police services, fire services are supplied by Menlo Park Fire Protection District. A map of city boundaries is included as Exhibit A.

<sup>1</sup> For complete Census information on the City of Menlo Park, go to the ABAG website at the following link. <http://www.bayareacensus.ca.gov/cities/MenloPark.htm>

## The Regional Planning Process

The City of Menlo Park participated in the regional planning process through the contribution of comments on various chapters of the regional plan on two occasions as requested by the Association of Bay Area Governments (ABAG). For a period of time, the City was without a dedicated Emergency Operations Coordinator due to budget considerations. As a result, participation at regional workshops and planning meetings lapsed in the period after the adoption of the previous local annex.

## The Local Planning Process

The process of preparing this plan was familiar to the City of Menlo Park. The City has a Safety Element to its General Plan, last updated June 22, 1976, 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) (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.

In preparation of this annex, key City staff met to identify and prioritize mitigation strategies appropriate for the City. Departments involved in this meeting included the City Manager's Office, Police Department, Community Development, and Public Works. At these meetings, the general priorities and appropriate City departments were identified. The City advertised the availability of the draft annex in September 2011 and held two public meetings, providing opportunity for the public to comment. The resolution adopting the plan and strategies was approved by the City Council on October 18, 2011. The mitigation strategies are intended to be

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supplementary information to the Safety Element of the General Plan. The next time the Safety Element is updated; this document will then be incorporated into its text.

Douglas Frederick, Housing Manager, was assigned as lead staff for the 2010 Update. Dr. Frederick reviewed the initial information from ABAG and FEMA, identified key issues in the 2010 Strategies Matrix, and coordinated the review by other departments of the Strategies matrix. A team meeting was held to coordinate the City’s response. Participating senior staff and their roles included:

- Kent Steffens, Public Works Director

Mr. Steffens provided input on City facilities, including buildings, roads, public infrastructure, and other facilities potentially impacted by hazards. Mr. Steffens also reviewed and provided comments on the 2010 Strategies Matrix.

- Arlinda Heineck, Community Development Director

Ms. Heineck provided input primarily on building code issues, including the issue of unreinforced masonry buildings (not an issue in the City of Menlo Park) and policies regarding reconstruction of residences and commercial buildings.

- Lacey Burt, Commander, Menlo Park Police Department

Commander Burt provided input on Police Department response procedures for a natural disaster. The staff team reviewed the proposed Strategy Matrix and provided comments and rankings on the suitability of the strategies and policies for Menlo Park.

At the meeting, general priorities and appropriate departments were identified. Staff identified mitigation strategies, prioritized said strategies, and reviewed preliminary budgets and potential funding sources for strategies designated as “High” priority for City-owned-and-operated facilities.

No formal meeting agendas, minutes, or sign in sheets were prepared during the staff team process. Menlo Park’s approach involved a collaborative, informal review and discussion of materials.

## ***Review and Incorporation of Existing Information***

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

<b>Existing plans, studies, reports, and technical information</b>	<b>Method of incorporation into the jurisdiction annex</b>
Menlo Park General Plan, Health and Safety Element	Hazards Assessment and priority mitigation actions

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Capital Improvements Plan	Priority mitigation actions and programs
Menlo Park Emergency Operations Plan	Priority mitigation actions and programs

## ***Process of Updating Plan Sections***

The Plan was updated to reflect any code revisions, amendments, or other actions related to the Plan that Menlo Park undertook between the 2005 Annex and the 2010 Annex. It was determined that a major update was not necessary because most of the information was still accurate. The Planning Process section was updated to reflect the process undertaken for the update of this Plan.

Changes in Menlo Park's policies, including code revisions and amendments, are actions taken by the City Council. The Council's highest priority is community involvement in City actions. It is, therefore, the responsibility of City staff to ensure this priority is met through a variety of methods, such as a hard copy and email subscription service for Council agendas and posting of agendas and staff reports at City Offices and on the City website. Written correspondence is forwarded to all Council members, and verbal comments are welcome at all Council meetings.

## ***Public Meetings***

Opportunity for public comments on the draft mitigation strategies was provided at two public meetings on September 21 and September 28, 2011 at the City's Administration Building, which were advertised in the Almanac (Exhibit B), a newspaper with local coverage. Additionally, the draft was presented to City Council at a regularly scheduled meeting on October 18, 2011. The meeting was televised and the public was informed of opportunities to review and comment on the strategies. The objectives of this public meeting included informing the City Council about the issues and priorities facing the City of Menlo Park's multi-hazard response programs and to provide an opportunity for public comment and response.

The draft mitigation strategies were also published on the ABAG website for public viewing. Copies of the internet posting are included as Exhibit C to City of Menlo Parks 2010 Annex. No public comments were received at the public hearing or in response to the internet posting. However, the City of Menlo Park will seek further comments prior to and during the adoption process for the plan in 2011. The City Council will also adopt the plan in a public hearing format that will provide further opportunities for public comment. In addition, the City of Menlo Park will publish press releases or work with the Almanac to further publicize the local annex document and make the public more aware of the issues and strategies facing Menlo Park. Ultimately, the mitigation strategies will become an implementation appendix of the Health and Safety Element of the City of Menlo Park General Plan.

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## Hazards Assessment

The ABAG multi-jurisdictional Local Hazard Mitigation Plan, to which this is an Annex, lists nine hazards that impact the Bay Area; five related to earthquakes (faulting, shaking, earthquake-induced landslides, liquefaction, and tsunamis) and four related to weather (flooding, landslides, wildfires, and drought). These hazards all impact the community of Menlo Park, except for surface faulting. Surface faulting is not a hazard in the City of Menlo Park because no active faults are located in the City.

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/>.

The Wildland Urban Interface – Fire Threatened Communities map shows Menlo Park as being at risk in the area to the west of El Camino Real. Based on discussions with Menlo Park Fire Protection District, the map should not be used for planning in this portion of the City. The emphasis should be based on the San Mateo County Wildfire Maps until further mapping, or revisions of this mapping, is completed by the California Department of Forestry.

The City examined the hazard exposure for 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>. Critical facilities in Menlo Park include: 5 health care facilities, 13 schools, 10 city-owned facilities, 7 special district owned facilities, and 8 bridges.

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

The City of Menlo Park has experienced a number of different disasters over the last 50 years, including numerous earthquakes, floods, and severe storms. The El Nino storm of 1998, for example, caused record floods in San Mateo County. Severe landslides were triggered by intense rain. More than 11,000 people were evacuated throughout the County because of 80 mile per hour winds and floods. There were a total of 17 deaths and \$550 million in damage.

San Francisquito Creek, running along the border between Menlo Park and Palo Alto, experiences seasonal flooding that affects numerous households and businesses along the creek and in low-lying areas near the bay. The City provides sand and bags to residents in an effort to assist in their efforts to protect their property.

The Loma Prieta Earthquake of 1989 is another example of the kind of large scale disaster which can strike the Bay Area. It killed 63 persons, injured 3,757, and displaced over 12,000 persons. With over 20,000 homes and businesses damaged and over 1,100 destroyed, this quake caused approximately \$6 billion of damage. The City of Menlo Park suffered from minor damage but the damage was throughout the city.

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## Risk Assessment

### *Urban Land Exposure*

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 4,226 urban acres in the City, the following hazard exposures were identified:

- Earthquake faulting – No active faults run through Menlo Park, so fault rupture is not considered a hazard.
- Earthquake shaking – The nearest earthquake fault is the San Andreas Fault that runs within one mile of Menlo Park's western boundary. Severe ground shaking is possible in most of the City. A total of 3,769 acres are included in the two highest categories of ground shaking potential.
- Earthquake-induced landslides – While earthquake-induced landslides may be a hazard in Menlo Park, mapping of the hazard area has not been completed at this time.
- Earthquake liquefaction – a total of 893 acres within Menlo Park are contained within the “high” or “very high” categories of earthquake liquefaction susceptibility. Areas of Menlo Park north east of Highway 101 are generally more susceptible.
- Tsunamis – While tsunamis may be a hazard in Menlo Park, the mapping of the inundation area has not been completed at this time.
- Flooding – A total of 751 acres are included in the FEMA designated 100-year flood plain. Flood risks include over banking from San Francisquito Creek and Atherton Creek, and tidal flooding from San Francisco Bay. The San Francisquito Creek flood plain contains approximately 800 parcels, 95% of which are residential. The tidal flood zone includes approximately 480 parcels, 75% are residential. Menlo Park is a member of the San Francisquito Creek Joint Powers Authority that is currently working with the US Army Corps of Engineers to evaluate both Creek and tidal flooding.
- Landslides – Menlo Park has 600 acres that have been mapped as having “few landslides” in the past. This area of the City is generally west of Alameda de Las Pulgas. None of the City is mapped in areas that have “many” or “mostly” landslides.
- Wildfires – Menlo Park includes 21 acres in areas of “high” wildfire threat, but no acres in either the “very high” or “extreme” categories. Much of Menlo Park, 2,451 acres, is within the threat area defined for the wildland urban interface fire threat.
- Dam Inundation – A total of 268 acres are identified in a dam failure inundation area. The potential of dam failure exists from Searsville and Felt Lakes, both located outside of Menlo Park. The largest area of threat exists along the banks of San Francisquito Creek from approximately Alpine Road to Alma Street.

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- Drought – All of Menlo Park is subject to drought. The City recently completed a draft of its Urban Water Management Plan that outlines contingency plans for water distribution in the event of a water shortage.

### ***Infrastructure Exposure***

The City 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 City's 135 miles of roads, and 126 miles of pipelines, the following hazard exposures were identified:

- Earthquake faulting – No active faults run through Menlo Park, so fault rupture is not considered a hazard.
- Earthquake shaking – The nearest earthquake fault is the San Andreas Fault that runs within one mile of Menlo Park's western boundary. Severe ground shaking is possible in most of the City. A total 93 miles of roads and 89 miles of pipelines are included in the two highest categories of ground shaking potential.
- Earthquake-induced landslides – While earthquake-induced landslides may be a hazard in Menlo Park, mapping of the hazard area has not been completed at this time.
- Earthquake liquefaction – A total 31 miles of roads and 29 miles of pipelines are included in the "high" or "very high" categories of earthquake liquefaction susceptibility. Highway 84 is shown within an area that is considered to be in the "very high" category of earthquake liquefaction susceptibility.
- Tsunamis – While tsunamis may be a hazard in Menlo Park, the mapping of the inundation area has not been completed at this time.
- Flooding – A total 20 miles of roads and 20 miles of pipelines are included in the FEMA designated 100-year flood plain.
- Landslides – A total 18 miles of roads and 16 miles of pipelines are included in the area consider to have "few landslides." This area generally lies west of Alameda de Las Pulgas.
- Wildfires – One mile of road and one mile of pipeline is contained within an area considered as "high" wildfire threat.
- Dam Inundation –Eight miles of road and eight mile of pipeline are contained within a dam inundation area.
- Drought – is not considered a hazard for either roadways or pipelines.



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

City owned critical facilities include facilities necessary for recovery after a disaster, potential shelters and critical infrastructure systems such as water storage facilities and pump stations. The ten critical city owned facilities include: 1) the City Administration Building (emergency operations center); 2) Corporation yard; 3) Onetta Harris Senior Center; 4) Onetta Harris Community Center; 5) Arrillaga Family Gymnasium; 6) Arrillaga Family Recreation Center; 7) Water Reservoir #1; 8) Water Reservoir #2; 9) Sharon Heights water pump station; and 10) Bohannon stormwater pump station.

- Earthquake faulting – No active faults run through Menlo Park, so fault rupture is not considered a hazard.
- Earthquake shaking – Severe ground shaking is possible in most of Menlo Park. Within the two highest categories of ground shaking potential, critical facilities include: 5 health care facilities, 7 schools, 8 city owned facilities, 5 special district owned facilities, and 3 bridges.
- Earthquake-induced landslides – While earthquake-induced landslides may be a hazard in Menlo Park, mapping of the hazard area has not been completed at this time.
- Earthquake liquefaction – Within the two highest categories of liquefaction susceptibility, “high” and “very high” critical facilities include: 0 health care facilities, 2 schools, 3 city owned facilities, 3 special district owned facilities and 4 bridges.
- Tsunamis – While tsunamis may be a hazard in Menlo Park, the mapping of the inundation area has not been completed at this time.
- Flooding – Critical facilities that fall within the FEMA 100-year flood zone include: 1 health care facility, 1 school, 0 city owned facilities, 1 special district owned facility, and 4 bridges.
- Landslides – Within the area considered to have “few landslides”, critical facilities include: 1 health care facility, 2 schools, 1 city owned facility, 0 special district owned facilities, and 0 bridges.
- Wildfires - no critical facilities are located in either the “high” “very high” or “extreme” categories for wildland fire threat. Critical facilities that fall within wildland urban interface fire threat include: 4 health care facilities, 10 schools, 5 city owned facilities, 7 special district owned facilities, and 4 bridges.
- Dam Inundation – No critical facilities are located within a dam failure inundation area.
- Drought - All of Menlo Park is subject to drought. The City completed a draft of its Urban Water management Plan that outlines contingency plans for water distribution in the event of a water shortage.

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## ***Repetitive Loss Properties***

While there are portions of the City located in flood-prone areas, there is only one property with repetitive loss based on the information at <http://quake.abag.ca.gov/mitigation/pickflood.html>.

## ***Other risks***

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

The City of Menlo Park 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.

## **National Flood Insurance Program**

The City of Menlo Park has participated in the National Flood Insurance Program since 1974. The City does not participate in the Community Rating System. City participation in the program includes insurance policies for buildings in the flood zone purchased through the NFIP. The City receives community assistance visits from FEMA related to continued compliance with NFIP, most recently on February 16, 2011. The City supplements FEMA maps with its own Flood Damage Prevention Ordinance and conducts development reviews for buildings in the flood zone in its efforts to regulate the flood hazard area. City financing for the Community Rating System is the major hurdle for more effective participation in NFIP. The City continues to conduct development reviews for building projects in the flood zone for compliance with NFIP.

## **Mitigation Goals and Objectives**

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

Additional, the City has the specific objective of reducing the number of public and private buildings within the County that are vulnerable to the effects of earthquakes and flooding.

## **Mitigation Activities and Priorities**

As a participant in the 2005 ABAG multi-jurisdictional planning process, City of Menlo Park 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 the meetings held with the City

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Manager's Office, Police Department, Community Development, Public Works, from November 2005 through February 2006. At these meetings, 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. Currently only six strategies were given a high priority: Housing – Public Education (1); Infrastructure – Multi Hazard (3) and Government – Critical Facilities (2). However, several are shown as not yet considered.

Over time, the City is committed to developing better hazard and risk information to use in making those trade-offs. The City is 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 first submitted to the City Manager for review. The draft priorities were then provided to the City Council for its review. The public was provided with an opportunity to comment on the DRAFT priorities via our website and at a public meeting. The final strategies (as shown in the attached Table) will become an Implementation Appendix to the City's Safety Element the next time the General Plan is amended.

## ***Evaluation of Progress from 2005 Plan***

During the development process for the 2005 regional plan, mitigation actions and priorities for Menlo Park were identified. These strategies were reassessed for this update, adding new priorities that have risen to the forefront and removing others that no longer seem relevant. The attached list (Exhibit C) indicates each of the strategies identified, along with responsible party, action taken, and current status of progress.

## ***Future Mitigation Actions and Priorities***

As a participant in the 2010 ABAG multi-jurisdictional planning process, the staff of the City of Menlo Park helped in the development and review of the comprehensive list of mitigation strategies in the overall multi-jurisdictional plan. The decision on priority was made based on a variety of criteria, not simply on an economic cost-benefit analysis. These criteria include being technically and administratively feasible, politically acceptable, socially appropriate, legal, economically sound, and not harmful to the environment or our heritage. Representatives from multiple departments then met on a regular basis to review progress on the City's 2005 strategies, to identify and prioritize additional mitigation strategies to update the list.

These draft priorities were submitted to City Department Directors and the City Manager's Office for review. The draft priorities will be provided to the City Council for adoption pending approval of this LHMP by FEMA.

The City planning team also prioritized specific mitigation tasks for the next 5 years. This list includes implementation process, funding strategy, responsible agency, and approximate time frame. These include:

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- Make use of the materials on the ABAG web site at <http://quake.abag.ca.gov/fixit> and other web sites to increase residential mitigation activities related to earthquakes. (ABAG plans to continue to improve the quality of those materials over time.) (HSNG K-12).
- Participate in developing and maintaining a system of interoperable communications for first responders from cities, counties, special districts, state, and federal agencies (GOVT C-7).
- Develop and distribute culturally appropriate materials related to disaster mitigation and preparedness, such as those on the <http://www.preparenow.org> website (EDUC D-2).
- Explore ways to require that hazardous materials stored in the flood zone be elevated or otherwise protected from flood waters (ENVI A-8).

### ***On-Going Mitigation Strategy Programs***

The City has many on-going mitigation programs that help create a more disaster-resistant region. The following list highlights those programs identified as *Existing Programs* in the mitigation strategy spreadsheet. Others are on-going programs that are currently underfunded. It is the City's priority to find additional funding to sustain these on-going programs over time. Highlights of the City's mitigation activities include:

- Assess the vulnerability of critical facilities owned by infrastructure operators subject to damage in natural disasters or security threats, including fuel tanks and facilities owned outside of the Bay Area that can impact service delivery within the region (INFR A-1).
- Retrofit or replace critical lifeline infrastructure facilities and/or their backup facilities that are shown to be vulnerable to damage in natural disasters (INFR A-4).
- Develop a plan for speeding the repair and functional restoration of water and wastewater systems through stockpiling of shoring materials, temporary pumps, surface pipelines, portable hydrants, and other supplies, such as those available through the Water/Wastewater Agency Response Network (WARN). Communicate that plan to local governments and critical facility operators (INFR A-6).
- Pre-position emergency power generation capacity (or have rental/lease agreements for these generators) in critical buildings of cities, counties, and special districts to maintain continuity of government and services (INFR A-8).
- Encourage replacing above ground electric and phone wires and other structures with underground facilities, and use the planning-approval process to ensure that all new phone and electrical utility lines are installed underground (INFR A-12).

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- Expedite the funding and retrofit of seismically-deficient city- and county-owned bridges and road structures by working with Caltrans and other appropriate governmental agencies (INFR B-1).
- Replace or retrofit water-retention structures that are determined to be structurally deficient, including levees, dams, reservoirs and tanks (INFR B-5).
- Install portable facilities (such as hoses, pumps, emergency generators, or other equipment) to allow pipelines to bypass failure zones such as fault rupture areas, areas of liquefaction, and other ground failure areas (using a priority scheme if funds are not available for installation at all needed locations) (INFR B-6).
- 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 (B-8).
- Ensure a reliable source of water for fire suppression (meeting acceptable standards for minimum volume and duration of flow) for existing and new development (INFR C-1).
- Conduct a watershed analysis of runoff and drainage systems to predict areas of insufficient capacity in the storm drain and natural creek system (INFR D-1).
- Pursue funding for the design and construction of storm drainage projects to protect vulnerable properties, including property acquisitions, upstream storage such as detention basins, and channel widening with the associated right-of-way acquisitions, relocations, and environmental mitigations (INFR D-5).
- Continue to repair and make structural improvements to storm drains, pipelines, and/or channels to enable them to perform to their design capacity in handling water flows as part of regular maintenance activities. (This strategy has the secondary benefit of addressing fuel, chemical, and cleaning product issues.) (INFR D-6)
- Continue maintenance efforts to keep storm drains and creeks free of obstructions, while retaining vegetation in the channel (as appropriate) to allow for the free flow of water (INFR D-7).
- Provide materials to the public related to family and personal planning for delays due to traffic or road closures, or due to transit system disruption caused by disasters (INFR G-2).
- Create incentives for private owners of historic or architecturally significant residential buildings to undertake mitigation to levels that will minimize the likelihood that these buildings will need to be demolished after a disaster, particularly if those alterations conform to the federal Secretary of the Interior's Guidelines for Rehabilitation (HSNG A-2).

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- Utilize or recommend adoption of a retrofit standard that includes standard plan sets and construction details for voluntary bolting of homes to their foundations and bracing of outside walls of crawl spaces (“cripple” walls), such as Plan Set A developed by a committee representing the East Bay-Peninsula-Monterey Chapters of the International Code Council (ICC), California Building Officials (CALBO), the Structural Engineers Association of Northern California (SEAONC), the Northern California Chapter of the Earthquake Engineering Research Institute (EERI-NC), and ABAG’s Earthquake Program (HSNG B-1).
- Provide technical assistance in seismically strengthening privately-owned soft-story structures (HSNG C-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 (HSNG G-9).
- Provide sandbags and plastic sheeting to residents in anticipation of rainstorms, and deliver those materials to vulnerable populations upon request (HSNG H-4).
- Ensure that new subdivisions are designed to reduce or eliminate flood damage by requiring lots and rights-of-way be laid out for the provision of approved sewer and drainage facilities, providing on-site detention facilities whenever practicable (HSNG H-7).
- Develop printed materials, utilize existing materials (such as developed by FEMA and the American Red Cross), conduct workshops, and/or provide outreach encouraging residents to have family disaster plans that include drop-cover-hold earthquake drills, fire and storm evacuation procedures, and shelter-in-place emergency guidelines (HSNG K-2).
- Create incentives for private owners of historic or architecturally significant commercial and industrial buildings to undertake mitigation to levels that will minimize the likelihood that these buildings will need to be demolished after a disaster, particularly if those alterations conform to the federal Secretary of the Interior’s Guidelines for Rehabilitation (ECO A-2).
- Adopt the 2009 International Existing Building Code or the latest applicable standard for the design of voluntary or mandatory retrofit of privately-owned seismically vulnerable buildings (ECON D-2).
- Create a mechanism to enforce provisions of the California Building and Fire Codes and other local codes that require the installation of smoke detectors and fire-extinguishing systems on existing privately-owned buildings by making installation a condition of (a)

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finalizing a permit for any work valued at over a fixed amount and/or (b) on any building over 75 feet in height, and/or (b) as a condition for the transfer of property (ECON E-5).

- Retrofit or replace critical facilities that are shown to be vulnerable to damage in natural disasters (GOVT A-2).
- Identify and undertake cost-effective retrofit measures related to security on critical facilities (such as moving and redesigning air intake vents and installing blast-resistant features) when these buildings undergo major renovations related to other natural hazards (GOVT A-7).
- Develop a continuity of operations plan that includes back-up storage of vital records, such as plans and back-up procedures to pay employees and vendors if normal finance department operations are disrupted, as well as other essential electronic files (GOVT B-4).
- Ensure that fire, police, and other emergency personnel have adequate radios, breathing apparatuses, protective gear, and other equipment to respond to a major disaster (GOVT C-6).
- Harden emergency response communications, including, for example, building redundant capacity into public safety alerting and/or answering points, replacing or hardening microwave and simulcast systems, adding digital encryption for programmable radios, and ensuring a plug-and-play capability for amateur radio (GOVT C-8).
- Install alert and warning systems for rapid evacuation or shelter-in-place. Such systems include outdoor sirens and/or reverse-911 calling systems (GOVT C-14).
- Create and maintain an automated system of rain and flood gauges that is web enabled and publicly-accessible. Work toward creating a coordinated regional system (GOVT C-20).
- 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 capital improvement programs for most effectively reducing the threat of flooding. Work toward making this process more formal to insure that flooding is considered at existing joint-agency meetings (GOVT D-3).
- Utilize the unique ability of schools 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, particularly if coordinated with cities, counties, the American Red Cross and others (EDUC D-1).

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- Continue to enforce State-mandated requirements, such as the California Environmental Quality Act, to ensure that mitigation activities for hazards, such as seismic retrofits and vegetation clearance programs for fire threat, are conducted in a way that reduces environmental degradation such as air quality impacts, noise during construction, and loss of sensitive habitats and species, while respecting the community value of historic preservation (ENVI A-1).
- Develop and implement a program to control invasive and exotic species that contribute to fire and flooding hazards (such as eucalyptus, cattails, and cordgrass). This program could include vegetation removal, thinning, or replacement in hazard areas where there is a direct threat to structures (ENVI A-12).
- Enforce provisions under creek protection, stormwater management, and discharge control ordinances designed to keep watercourses free of obstructions and to protect drainage facilities to conform with the Regional Water Quality Control Board's Best Management Practices (ENVI A-13).
- Require preparation of site-specific geologic or geotechnical reports for development and redevelopment proposals in areas subject to earthquake-induced landslides or liquefaction as mandated by the State Seismic Hazard Mapping Act in selected portions of the Bay Area where these maps have been completed, and condition project approval on the incorporation of necessary mitigation measures related to site remediation, structure and foundation design, and/or avoidance (LAND A-2).
- Review new development proposals to ensure that they incorporate required and appropriate fire-mitigation measures, including adequate provisions for occupant evacuation and access by emergency response personnel and equipment (LAND B-1).
- Establish and enforce requirements for new development so that site-specific designs and source-control techniques are used to manage peak stormwater runoff flows and impacts from increased runoff volumes (LAND C-1).
- Establish and enforce regulations concerning new construction (and major improvements to existing structures) within flood zones in order to be in compliance with federal requirements and, thus, be a participant in the Community Rating System of the National Flood Insurance Program (LAND C-4).

### **Incorporation into Existing Planning Mechanisms**

The City has several planning mechanisms which complement this mitigation planning effort. They include:

- ◆ General plan safety element
- ◆ Capital Improvements Plan



# City of Menlo Park

- ◆ The Menlo Park Climate Action Plan

<http://acgov.org/cda/planning/landuseprojects/climateaction/index.htm>

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

## Plan Update Process

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

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

The City is committed to reviewing and updating this plan annex at least once every five years, as required by the Disaster Mitigation Act of 2000. The City's Emergency Services Coordinator 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.

# City of Menlo Park

## **Mitigation Plan Point of Contact**

Name: Lacey Burt

Title: Police Commander/Emergency Services Coordinator

Address: 701 Laurel Street, Menlo Park, CA 94025

Telephone: 650-330-6300

Email: laburt@menlopark.org

## **Alternate Point of Contact**

Name: Douglas Frederick

Title: Housing Manager/Assistant Emergency Services Coordinator

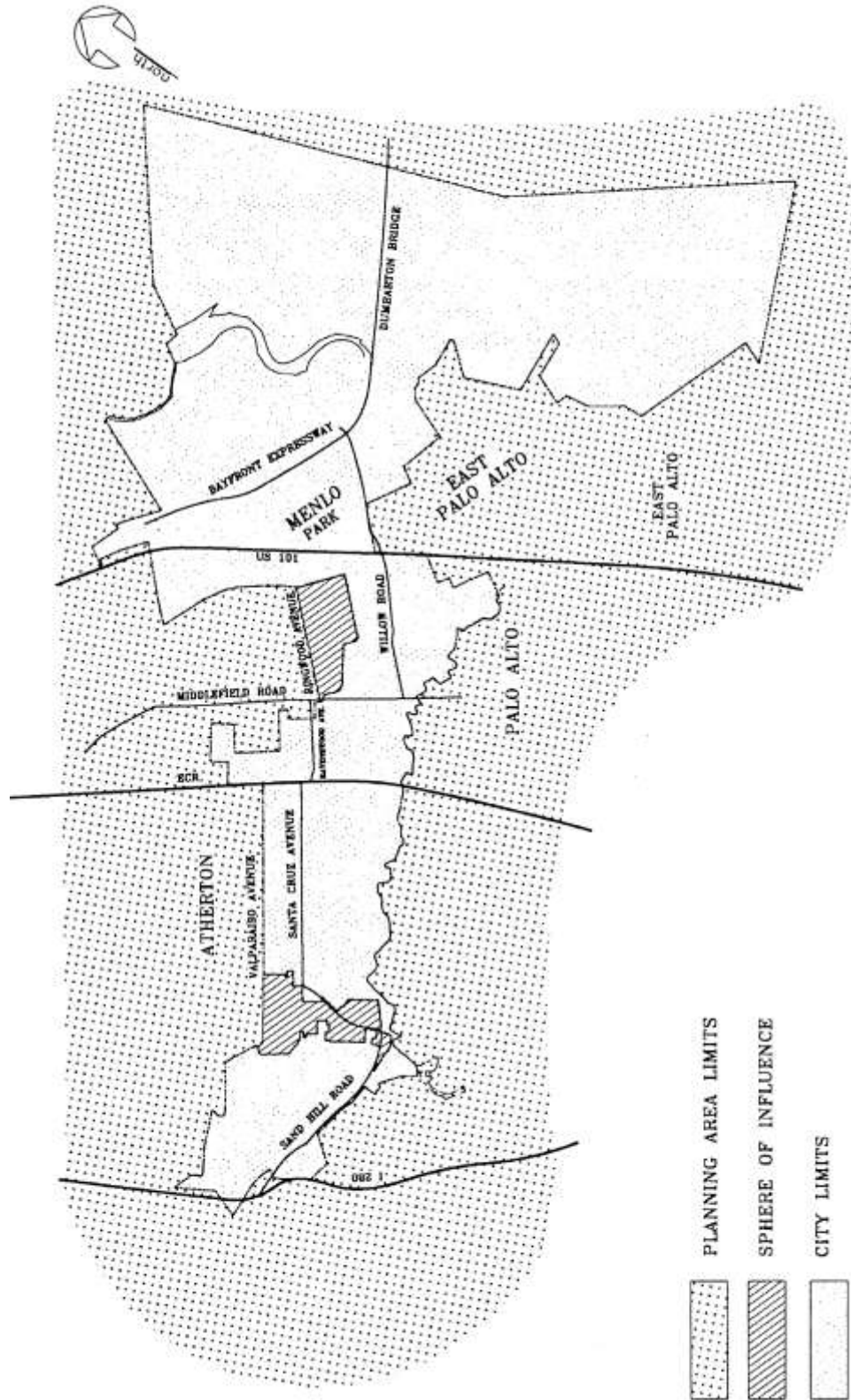
Mailing Address: 701 Laurel Street, Menlo Park CA 94025

Telephone: 650-330-6724

Email: dwfrederick@menlopark.org

# City of Menlo Park

## Exhibit A - Jurisdiction Boundary Map



# City of Menlo Park

## Exhibit B - Public Meeting Announcements



### **NOTICE OF PUBLIC INPUT CITY OF MENLO PARK**

#### Menlo Park's Local Hazard Mitigation Plan

The City of Menlo Park invites your comments on the Local Hazard Mitigation Plan at either of two meetings, September 21 or September 28, 2011 at 6:00 pm in the City of Menlo Park, Administration Building, City Council Conference Room (also known as the Fishbowl), 701 Laurel St., Menlo Park, CA 94025

Every five years the City is required to update its Local Hazard Mitigation Plan by the Federal Emergency Management Agency in order to qualify for funding in the event of a natural disaster. Your input is important to the process and you are invited to comment, either in person at one of the meetings, or through email or letter.

The document will be available by September 15, 2011 and will be posted on the City's website. You may contact Douglas Frederick at (650) 330-6724 or email him at [dwfrederick@menlopark.org](mailto:dwfrederick@menlopark.org) to obtain the document. You may also send him your input via email at [dwfrederick@menlopark.org](mailto:dwfrederick@menlopark.org) or by mail at 701 Laurel Street, Menlo Park, CA 94025.

DATED: August 25, 2011 Douglas Frederick  
Housing Manager  
PUBLISHED: August 31, 2011

# City of Menlo Park

## Exhibit C - Strategy Tables

### Infrastructure Mitigation Strategies

2009-2010 Strategy Number	2005 Original Strategy Number	Specific Mitigation Strategy	Applicable Hazards	Existing Program	Existing Program, underfunded	Very High - Unofficial Program	On Plan Adoption, no funding needed	High - Actively Looking for Funding	Moderate	Under Study	Not Applicable, or Not Cost Effective	Not Yet Considered	Responsible Agency or Department (Required if Existing Program, Existing Program under funded, Very High, High, or Under Study)	Orphaned or Resorator # (If existing program), Estimated Cost and Possible Funding Agency (if high priority), Estimated Date of Completion (if study), WHY if not same as regional priority, OR Other
Priority (CHECK ONLY ONE)														
a-1	a-1	Assess the vulnerability of critical facilities owned by infrastructure operators subject to damage in natural disasters or security threats, including fuel tanks and facilities owned outside of the Bay Area that can impact service delivery within the region. Note - Infrastructure agencies, departments, and districts are those that operate transportation and utility facilities and networks.	EQ LS WF FL SEC	X									Public Works	Project In Progress. Water System Upgrade. Install back-up emergency water supply for EOC. \$10,000.
a-2	a-2	If a dam owner, comply with State of California and federal requirements to assess the vulnerability of dams to damage from earthquakes, seiches, landslides, liquefaction, or security threats.	EQ LS WF FL SEC						X					
a-3	a-3	Encourage the cooperation of utility system providers and cities, counties, and special districts, and PG&E to develop strong and effective mitigation strategies for infrastructure systems and facilities.	EQ LS WF FL DR SEC									X		
a-4	a-4	Retrofit or replace critical lifeline infrastructure facilities and/or their backup facilities that are shown to be vulnerable to damage in natural disasters.	EQ LS WF FL SEC	X									Public Works	Project In Progress. Replace Sharon Heights Pump Station w/new pumps and seismic installation valves. \$1.5 mil.
a-5	a-5	Support and encourage efforts of other (lifeline infrastructure) agencies as they plan for and arrange financing for seismic retrofits and other disaster mitigation strategies. (For example, a city might pass a resolution in support of a transit agency's retrofit program.)	EQ LS WF FL DR SEC									X		

### Infrastructure Mitigation Strategies

2009-2010 Strategy Number	2005 Original Strategy Number	Specific Mitigation Strategy	Applicable Hazards	Existing Program	Existing Program, underfunded	Very High - Unofficial Program - Becomes Official on Plan Adoption, no funding needed	High - Actively Looking for Funding	Moderate	Under Study	Not Applicable, Not Appropriate, or Not Cost Effective	Not Yet Considered	Responsible Agency (Required if Existing Program, Existing Program under funded, Very High, High, or Under Study)	Continuation of Responder #1 (existing program), Estimated Cost and Possible Funding Agency (if high priority), Estimated Date of Completion (if study), WHY if not same as regional priority, OR Other
a-6	a-6	Develop a plan for speeding the repair and functional restoration of water and wastewater systems through stockpiling of shoring materials, temporary pumps, surface pipelines, portable hydrants, and other supplies, such as those available through the Water/Wastewater Agency Response Network (WARN). Communicate that plan to local governments and critical facility operators.	EQ LS WF FL DR SEC	X								Public Works	Project in Progress. Purchase additional pumps and water system bypass hoses. \$50,000.
a-7	a-7	Engage in, support, and/or encourage research by others (such as USGS, universities, or Pacific Earthquake Engineering Research Center-PEER) on measures to further strengthen transportation, water, sewer, and power systems so that they are less vulnerable to damage in disasters.	EQ LS WF FL DR SEC								X		
a-8	a-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.	EQ LS WF FL SEC	X								Public Works	
a-9	a-9	(REWORDED) Ensure that critical intersection traffic lights function following loss of power by installing battery back-ups, emergency generators, or lights powered by alternative energy sources such as solar. Proper functioning of these lights is essential for rapid evacuation, such as with hazmat releases resulting from natural disasters.	EQ LS WF FL SEC	X								Public Works	
a-10	a-10	Develop unused or new pedestrian rights-of-way as walkways to serve as additional evacuation routes (such as fire roads in park lands).	EQ LS WF FL SEC						X				
a-11	a-11	Minimize the likelihood that power interruptions will adversely impact lifeline utility systems or critical facilities by ensuring that they have adequate back-up power.	EQ LS WF FL SEC								X		

**Infrastructure Mitigation Strategies**

2009-2010 Strategy Number	2005 Original Strategy Number	Specific Mitigation Strategy	Applicable Hazards	Existing Program	Existing Program, underfunded	Very High - Unofficial Program - Becomes Official on Plan Adoption, no funding needed	High - Actively Looking for Funding	Moderate	Under Study	Not Applicable, or Not Cost Effective	Not Yet Considered	Responsible Agency (Required if Existing Program, Existing funded, Very High, High, or Under Study)	Continuation of Responder # (if existing program), Estimated Cost and Possible Funding Agency (if high priority), Estimated Date of Completion (if study), WHY if not same as regional priority, OR Other
a-12	a-12	Encourage replacing above ground electric and phone wires and other structures with underground facilities, and use the planning-approval process to ensure that all new phone and electrical utility lines are installed underground.	EQ LS WF FL SEC	X								Community Development	Zoning Ordinance chapter 16.76.
a-13	a-13	If you own a dam, coordinate with the State Division of Safety of Dams to ensure an adequate timeline for the maintenance and inspection of dams, as required of dam owners by State law, and communicate this information to local governments and the public.	EQ LS WF FL SEC					X					
a-14	a-14	Encourage communication between State Emergency Management Agency (CalEMA), FEMA, and utilities related to emergencies occurring outside of the Bay Area that can affect service delivery in the region.	EQ LS WF FL DR SEC								X		
a-15	a-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.	EQ LS WF FL SEC								X		
a-16	new	Recognize that heat emergencies produce the need for non-medical transport of people to cooling centers by ensuring that (1) transit operators have plans for non-medical transport of people during and after such emergencies including the use of paratransit and (2) cities, counties, and transit agencies have developed ways to communicate the plan to the public.	Heat								X		
a-17	a-16	Effectively utilize the Regional Transportation Management Center (TMC) in Oakland, 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. RESPONSIBLE AGENCY: MTC only.	EQ LS WF FL SEC								X		



### Infrastructure Mitigation Strategies

2009-2010 Strategy Number	2005 Original Strategy Number	Specific Mitigation Strategy	Applicable Hazards	Existing Program	Existing Program, underfunded	Very High - Unofficial Program - Becomes Official on Plan Adoption, no funding needed	High - Actively Looking for Funding	Moderate	Under Study	Not Applicable, or Not Cost Effective	Not Yet Considered	Responsible Agency (Required if Existing Program, Existing Program under funded, Very High, High, or Under Consideration)	Continuation of Responder # (if existing program), Estimated Cost and Possible Funding Agency (if high priority), Estimated Date of Completion (if study), WHY if not same as regional priority, OR Other Considerations
a-18	new	Develop (with the participation of paratransit providers, emergency responders, and public health professionals) plans and procedures for paratransit system response and recovery from disasters.	EQ LS WF FL Heat SEC								X		
a-19	new	Coordinate with other critical infrastructure facilities to establish plans for delivery of water and wastewater treatment chemicals.	EQ LS WF FL SEC								X		
a-20	new	Establish plans for delivery of fuel to critical infrastructure providers.	EQ LS WF FL SEC								X		
a-21	new	As an infrastructure operator, designate a back-up Emergency Operations Center with redundant communications systems.	EQ LS WF FL SEC								X		
a-22	new	Monitor scientific studies of the Sacramento-San Joaquin Delta and policy decisions related to the long-term disaster resistance of that Delta system to ensure that decisions are made based on comprehensive analysis and in a scientifically-defensible manner. Levee failure due to earthquakes, flooding, and climate change (including sea level rise and more frequent and more severe flooding) are all of concern. The long-term health of the Delta area is critical to the Bay Area's water supply, is essential for the San Francisco Bay and estuary's environmental health, provides recreation opportunities for Bay Area residents, and provides the long-term sustainability of Delta communities. While only part of the Delta is within the nine Bay Area counties covered by this multi-jurisdictional LHIMP, the Delta is tied to the infrastructure, water supply, and economy of the Bay Area.	EQ FL								X		
INFR - b	Earthquakes												
b-1	b-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.	EQ	X								Public Works	

### Infrastructure Mitigation Strategies

2009-2010 Strategy Number	2005 Original Strategy Number	Specific Mitigation Strategy	Applicable Hazards	Existing Program	Existing Program, underfunded	Very High - Unofficial Program - Becomes Official on Plan Adoption, no funding needed	High - Actively Looking for Funding	Moderate	Under Study	Not Applicable, or Not Cost Effective	Not Yet Considered	Responsible Agency (Required if Existing Program, Existing funded, Very High, High, or Under Consideration)	Orphaned or Reservoir # (if existing program), Estimated Cost and Possible Funding Agency (if high priority), Estimated Date of Completion (if study), WHY if not same as regional priority, OR Other
b-2	b-2	Establish a higher priority for funding seismic retrofit of existing transportation and infrastructure systems (such as BART) than for expansion of those systems.	EQ								X		
b-3	b-3	Include "areas subject to high ground shaking, earthquake-induced ground failure, and surface fault rupture" in the list of criteria used for determining a replacement schedule for pipelines (along with importance, age, type of construction material, size, condition, and maintenance or repair history).	EQ					X					
b-4	b-4	Install specially-engineered pipelines in areas subject to faulting, liquefaction, earthquake-induced landsliding, or other earthquake hazard.	EQ								X		
b-5	b-5	Replace or retrofit water-retention structures that are determined to be structurally deficient, including levees, dams, reservoirs and tanks.	EQ	X								Public Works	Completed with roof replacement projects. Reservoir evaluation.
b-6	b-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).	EQ	X								Public Works	Hoses are in stock
b-7	b-7	Install earthquake-resistant connections when pipes enter and exit bridges and work with bridge owners to encourage retrofit of these structures.	EQ						X				
b-8	b-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.	EQ	X								Structure: Building Dept. Infrastructure: Public Works	
b-9	b-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.	EQ								X		
b-10	b-10	Develop a water-based transportation "system" 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.	EQ							X			
INFR - c - Wildfire													

### Infrastructure Mitigation Strategies

2009-2010 Strategy Number	2005 Original Strategy Number	Specific Mitigation Strategy	Applicable Hazards	Existing Program	Existing Program, underfunded	Very High - Unofficial Program - Becomes Official on Plan Adoption, no funding needed	High - Actively Looking for Funding	Moderate	Under Study	Not Applicable, or Not Cost Effective	Not Yet Considered	Responsible Agency (Required if Existing Program, Existing funded, Very High, High, or Under Study)	Estimate of Responder # (if existing program), Estimated Cost and Possible Funding Agency (if high priority), Estimated Date of Completion (if study), WHY if not same as regional priority, OR Other
c-1	c-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.	WF	X								Public Works	
c-2	c-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 (including wildfire threat areas and in wildland-urban-interface areas).	WF								X		
c-3	c-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.	WF						X				
c-4	c-4	For new development, ensure all dead-end segments of public roads in high hazard areas have at least a "T" intersection turn-around sufficient for typical wildland fire equipment.	WF						X				
c-5	c-5	For new development, enforce minimum road width of 20 feet with an additional 10-foot clearance on each shoulder on all driveways and road segments greater than 50 feet in length in wildfire hazard areas.	WF						X				
c-6	c-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.	WF						X				
c-7	c-7	Ensure adequate fire equipment road or fire road access to developed and open space areas.	WF						X				
c-8	c-8	Maintain fire roads and/or public right-of-way roads and keep them passable at all times.	WF						X				
INFR - d - Flooding													
d-1	d-1	Conduct a watershed analysis of runoff and drainage systems to predict areas of insufficient capacity in the storm drain and natural creek system.	FL	X								Public Works	
d-2	d-2	Develop procedures for performing a watershed analysis to examine the impact of development on flooding potential downstream, including communities outside of the jurisdiction of proposed projects.	FL	X								Public Works	

### Infrastructure Mitigation Strategies

2009-2010 Strategy Number	2005 Original Strategy Number	Specific Mitigation Strategy	Applicable Hazards	Existing Program	Existing Program, underfunded	Very High - Unofficial Program - Becomes Official on Plan Adoption, no funding needed	High - Actively Looking for Funding	Moderate	Under Study	Not Applicable, or Not Cost Effective	Not Yet Considered	Responsible Agency or Department (Required if Existing Program, Existing funded, Very High, High, or Under Consideration)	Estimate of Reservoir # (if existing program), Estimated Cost and Possible Funding Agency (if high priority), Estimated Date of Completion (if study), WHY if not same as regional priority, OR Other
d-3	d-3	Conduct a watershed analysis at least once every ten years unless there is a major development in the watershed or a major change in the Land Use Element of the General Plan of the cities or counties within the watershed.	FL								X		
d-4	d-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).	FL	X								Public Works	
d-5	d-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.	FL	X								Public Works	Secured funding for clearing storm drains
d-6	d-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. (This strategy has the secondary benefit of addressing fuel, chemical, and cleaning product issues.)	FL	X								Public Works	
d-7	d-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.	FL	X								Public Works	
d-8	d-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 conform with the Regional Water Quality Control Board's Best Management Practices.	FL								X		
d-9	d-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, or whatever regulatory agencies allow (3) stream bed depth management using dredging, and (4) removal of out-of-date coffer dams in rivers and tributary streams.	FL	X								Public Works	
d-10	d-10	Use reservoir sediment or reed removal as one way to increase storage for both flood control and water supply.	FL							X			

**Infrastructure Mitigation Strategies**

Strategy Number 2009-2010	Strategy Number 2005 Original	Specific Mitigation Strategy	Applicable Hazards	Existing Program	Existing Program, underfunded	Very High - Unofficial Program - Becomes Official on Plan Adoption, no funding needed	High - Actively Looking for Funding	Moderate	Under Study	Not Applicable, or Not Cost Effective	Not Yet Considered	Responsible Agency (Required if Existing Program, Existing funded, Very High, High, or Under Consideration)	Continuation of Responder # (if existing program), Estimated Cost and Possible Funding Agency (if high priority), Estimated Date of Completion (if study), WHY if not same as regional priority, OR Other
d-11	d-11	Identify critical locally-owned bridges affected by flooding and either elevate them to increase stream flow and maintain critical ingress and egress routes or modify the channel to achieve equivalent objectives.	FL	X								Public Works	
d-12	d-12	Provide or support the 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.	FL								X		
d-13	d-13	Ensure that utility systems in new developments are constructed in ways that reduce or eliminate flood damage.	FL								X		
d-14	d-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 increase plant security.	FL						X				
d-15	d-15	Work cooperatively with water agencies, flood control districts, Caltrans, and local transportation agencies to determine appropriate performance criteria for watershed analysis.	FL								X		
d-16	d-16	Work for better cooperation among the patchwork of agencies managing flood control issues.	FL	X								Public Works	
d-17	d-17	Improve monitoring of creek and watercourse flows to predict potential for flooding downstream by working cooperatively with land owners and the cities and counties in the watershed.	FL								X		
d-18	new	Using criteria developed by EPA for asset management, inventory existing assets, the condition of those assets, and improvements needed to protect and maintain those assets. Capture this information in a Geographic Information System (GIS) and use it to select locations for creek monitoring gauges.	FL								X		
INFR - e - Landslides													
e-1	e-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.	LS								X		

### Infrastructure Mitigation Strategies

Strategy Number	2009-2010 Strategy Number	2005 Original Strategy Number	Specific Mitigation Strategy	Applicable Hazards	Existing Program	Existing Program, underfunded	Very High - Unofficial Program - Becomes Official on Plan Adoption, no funding needed	High - Actively Looking for Funding	Moderate	Under Study	Not Applicable, or Not Cost Effective	Not Yet Considered	Responsible Agency (Required if Existing Program, Existing funded, Very High, High, or Under Consideration)	Continuation or Resumption # (if existing program), Estimated Cost and Possible Funding Agency (if high priority), Estimated Date of Completion (if study), WHY if not same as regional priority, OR Other Considerations
e-2	e-2	e-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.	LS								X		
f-1	f-1	f-1	<b>INFR - f - Building Reoccupancy</b> Ensure that critical buildings owned or leased by special districts or private utility companies participate in a program similar to San Francisco's Building Occupancy Resumption Program (BORP). The BORP program permits owners of buildings to hire qualified engineers to create facility-specific post-disaster inspection plans and allows these engineers to become automatically deputized as City/County inspectors for these buildings in the event of an earthquake or other disaster. This program allows rapid reoccupancy of the buildings. Note - A qualified (deleted structural) engineer is a California licensed engineer with relevant experience.	EQ LS WF FL SEC								X		
g-1	g-1	g-1	<b>INFR - g - Public Education</b> Provide materials to the public related to planning for power outages.	EQ LS WF FL SEC									Police Dept.	Brochure, Manual
g-2	g-2	g-2	Provide materials to the public related to family and personal planning for delays due to traffic or road closures, or due to transit system disruption caused by disasters.	EQ LS WF FL SEC									Police Dept.	
g-3	g-3	g-3	Provide materials to the public related to coping with reductions in water supply or contamination of that supply BEYOND regulatory notification requirements.	EQ LS WF FL DR SEC									Police Dept.	

### Infrastructure Mitigation Strategies

Strategy Number	2009-2010	2005 Original	Strategy Number	Specific Mitigation Strategy	Applicable Hazards	Existing Program	Existing Program, underfunded	Very High - Unofficial Program - Becomes Official on Plan Adoption, no funding needed	High - Actively Looking for Funding	Moderate	Under Study	Not Applicable, Not Appropriate, or Not Cost Effective	Not Yet Considered	Responsible Agency (Required if Existing Program, Existing funded, Very High, High, or Under Consideration)	Continuation or Resumption of (if existing program), Estimated Cost and Possible Funding Agency (if high priority), Estimated Date of Completion (if study), WHY if not same as regional priority, OR Other
g-4	g-4	g-4		Provide materials to the public related to coping with disrupted storm drains, sewage lines, and wastewater treatment (such as that developed by ABAG's Sewer Smart Program).	EQ LS WF FL DR SEC	X								Police Dept.	
g-5	g-5	g-5		Facilitate and/or coordinate the distribution of emergency preparedness or mitigation materials that are prepared by others, such as by making the use of the internet or other electronic means, or placing materials on community access channels or in city or utility newsletters, as appropriate.	EQ LS WF FL DR SEC	X								Police Dept.	
g-6	new			Sponsor the formation and training of Community Emergency Response Teams (CERT) for the employees of your agency. [Note – these programs go by a variety of names in various cities and areas.]	EQ LS WF FL DR SEC								X		
g-7	new			Develop and distribute culturally appropriate materials related to disaster mitigation and preparedness, such as those on the <a href="http://www.preparenow.org">http://www.preparenow.org</a> website related to infrastructure issues.	EQ LS WF FL DR SEC								X		

### Health Mitigation Strategies

HEAL - a - Hospitals and Other Critical Health Care Facilities (including those facilities licensed by OSHPD, as well as water agencies, public & private hospitals as noted).		Priority (CHECK ONLY ONE)										Response Agency or Department (Required if Existing Program, Existing Program under funded, Very High High, or Under High)	Orphanance or Resonance # (Existing program), Estimated Cost and Possible Funding Agency (if high priority), Estimated Date of Completion (if study). WHY if not same as regional priority, CD, Other, Community
Strategy Number	Specific Mitigation Strategy	Applicable Hazards	Existing Program	Existing Program, underfunded	Very High - Unofficial Program - Becomes Official on Plan Adoption, no funding needed	High - Actively Looking for Funding	Moderate	Under Study	Not Applicable, or Not Appropriate, or Not Cost Effective	Not Yet Considered			
2009-2010 Strategy Number													
a-1	Work to ensure that cities, counties, and county health departments, and hospital operators coordinate with each other (and that hospitals cooperate with the California Office of Statewide Health Planning and Development - OSHPD) to comply with current state law that mandates that critical facilities are structurally sound and have nonstructural systems designed to remain functional following disasters by 2013. In particular, this coordination should include understanding any problems with obtaining needed funding. RESPONSIBLE AGENCIES: Cities, counties, county health departments, and hospitals	EQ LS WF FL SEC							X				
a-2	Encourage hospitals in your community to work with 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. RESPONSIBLE AGENCIES: Cities, counties, county health departments, and hospitals	EQ LS WF FL SEC							X				
a-3	Ensure health care facilities are adequately prepared to care for victims with respiratory problems related to smoke and/or particulate matter inhalation. RESPONSIBLE AGENCIES: Cities, counties, county health departments, and hospitals	EQ WF SEC							X				
a-4	Ensure these health care facilities have the capacity to shut off outside air and be self-contained. RESPONSIBLE AGENCIES: Cities, counties, county health departments, and hospitals	EQ WF SEC										X	



## Health Mitigation Strategies

Strategy Number	Specific Mitigation Strategy	Applicable Hazards	Existing Program	Existing Program, underfunded	Very High - Unofficial Program - Becomes Official on Plan Adoption, no funding needed	High - Actively Looking for Funding	Moderate	Under Study	Not Applicable, or Not Cost Effective	Not Yet Considered	Responsible Agency or Department (Required if Existing Program, Existing Program under funded, Very High, High, or Under Study)	Priority or Responder # (if existing program), Estimated Cost and Possible Funding Agency (if high priority), Estimated Date of Completion (if study), WHY if not same as regional priority, <small>CR, Other, Community</small>
2009-2010 a-5	Ensure that hospitals and other major health care facilities have auxiliary water and power sources. RESPONSIBLE AGENCIES: Cities, counties, county health departments, water suppliers, and hospitals	EQ LS WF FL SEC								X		
a-6	Work to ensure that county health departments work with health care facilities to institute isolation capacity should a need for them arise following a communicable disease epidemic. Isolation capacity varies from a section of the hospital for most communicable diseases to the entire hospital for a major pandemic flu. RESPONSIBLE AGENCIES: Cities, counties, county health departments, and hospitals	EQ WF FL SEC						X				
a-7	Develop printed materials, utilize existing materials (such as developed by FEMA, the American Red Cross, and others, including non-profit organizations), 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. RESPONSIBLE AGENCIES: Cities, counties, county health departments, and hospitals	EQ LS WF FL SEC						X				
HEAL - b -	<b>Ancillary Health-Related Facilities (including medical offices, pharmacies, free-standing or specialty clinics, etc.)</b>											
b-1	Identify these ancillary facilities in your community. These facilities are not regulated by OSHPD in the same way as hospitals. RESPONSIBLE AGENCIES: Cities, counties, and county health departments	EQ LS WF FL SEC						X				
b-2	Encourage these facility operators to develop disaster mitigation plans. RESPONSIBLE AGENCIES: Cities, counties, and county health departments	EQ LS WF FL SEC								X		
b-3	Encourage these facility operators to create, maintain, and/or continue partnerships with local governments to develop response and business continuity plans for recovery. RESPONSIBLE AGENCIES: Cities, counties, and county health departments	EQ LS WF FL SEC						X				
HEAL - c -	<b>Coordination Initiatives</b>											
c-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. RESPONSIBLE AGENCIES: County Health Departments	FLU SEC						X				

## Health Mitigation Strategies

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2009-2010	c-2	Ensure that you know the Metropolitan Medical Response System (MMRS) cities in your area. Fremont, Oakland, San Francisco, and San Jose (plus Sacramento and Stockton) are the MMRS cities in or near the Bay Area. MMRS cities are provided with additional federal funds for organizing, equipping, and training groups of local fire, rescue, medical, and other emergency management personnel to respond to a mass casualty event. (The coordination among public health, medical, emergency management, coroner, EMS, fire, and law enforcement is a model for all cities and counties.) RESPONSIBLE AGENCIES: Cities, counties, county health departments, and hospitals	EQ LS WF FL SEC							X			
c-3	c-3	Know that 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. Teams in or near the Bay Area are headquartered in the cities of Santa Clara and Sacramento. RESPONSIBLE AGENCIES: Cities, counties, county health departments, and hospitals	EQ LS WF FL SEC							X			
c-4	c-4	Plan for hazmat related-issues due to a natural or technological disaster. Hazmat teams should utilize the State of California Department of Health Services laboratory in Richmond for confirmation of biological agents and Lawrence Livermore National Laboratory or Sandia (both in Livermore) for confirmation of radiological agents. RESPONSIBLE AGENCIES: Cities, counties, county health departments, and hospitals.	EQ WF FL SEC							X			
c-5	d-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 (at the source, in processing facilities, in distribution centers, and in grocery stores). RESPONSIBLE AGENCIES: County environmental health departments	FL SEC							X			

### Health Mitigation Strategies

2009-2010 Strategy Number	2005 Original Strategy Number	Specific Mitigation Strategy	Applicable Hazards	Existing Program	Existing Program, underfunded	Very High - Unofficial Program - Becomes Official on Plan Adoption, no funding needed	High - Actively Looking for Funding	Moderate	Under Study	Not Applicable, or Not Appropriate, or Not Cost Effective	Not Yet Considered	Responsible Agency or Department (Required if Existing Program, Existing Program under funded, Very High, High, or Under Study)	Priority or Responder # (if existing program), Estimated Cost and Possible Funding Agency (if high priority), Estimated Date of Completion (if study), WHY if not same as regional priority, or Other Comments
g-3	new	Ensure mental health continuity of operations and disaster planning is coordinated among county departments, (including Public Health and Emergency Services), private sector mental health organizations, professional associations, and national and community-based non-profit agencies involved in supporting community mental health programs. First, such planning should ensure that the capability exists to provide both immediate on-site mental health support at facilities such as evacuation centers, emergency shelters, and local assistance centers, as well as to coordinate on-going mental health support during the long-term recovery process. Second, this planning should ensure that mental health providers, in collaboration with the county agencies responsible for providing public information, are prepared to provide consistent post-disaster stress and other mental health guidance to the public impacted by the disaster.	EQ LS WF FL SEC							X			
deleted	d-2	(duplicate information to c-2)											
deleted	d-3	(duplicate information to c-3)											
deleted	d-4	(duplicate information to c-4)											

### Housing Mitigation Strategies

HSNG - a - Multi-Hazard		Priority (CHECK ONLY ONE)										Response Agency or Department (Required if Existing Program, Existing Program under High, or Under Study)	Orphaned or Resonant # of existing program), Estimated Cost and Possible Funding Agency (if high priority), Estimated Date of Completion (if study), WHY if not same as regional priority, OR Other Comments		
Strategy Number	Specific Mitigation Strategy	Applicable Hazards	Existing Program	Existing Program, underfunded	Very High - Unofficial Program - Becomes Official on Plan Adoption, no funding needed	High - Actively Looking for Funding	Moderate	Under Study	Not Applicable, or Not Cost Effective	Not Yet Considered					
2009-2010															
a-1	Assist in ensuring adequate hazard disclosure by working with real estate agents to improve enforcement of real estate disclosure requirements for residential properties with regard to seven official natural hazard zones: 1) Special Flood Hazard Areas (designated by FEMA), 2) Areas of Potential Flooding from dam failure inundation, 3) Very High Fire Hazard Severity Zones, 4) Wildland Fire Zones, 5) Earthquake Fault Zones (designated under the Alquist-Priolo Earthquake Fault Zoning Act), and the 6) Liquefaction and Landslide Hazard Zones (designated under the Seismic Hazard Mapping Act).	EQ LS WF FL SEC	Existing Program												
a-2	Create incentives for private owners of historic or architecturally significant residential buildings to undertake mitigation to levels that will minimize the likelihood that these buildings will need to be demolished after a disaster, particularly if those alterations conform to the federal Secretary of the Interior's <i>Guidelines for Rehabilitation</i> .	EQ LS WF FL SEC											Community Development	Historical Building Code	
a-3	Develop a plan for short-term sheltering of residents of your community in conjunction with the American Red Cross.	EQ LS WF FL SEC													Public Works
a-4	Develop a plan for interim housing for those displaced by working with the Regional Catastrophic Planning Grant Program (CPGP) that funded this effort in 2009. (Estimated completion is 2011.)	EQ LS WF FL SEC													Police Dept.

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2009-2010	HSNG - B -	Single-Family Homes Vulnerable to Earthquakes											
b-1	b-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 Plan Set A developed by a committee representing the East Bay-Peninsula-Monterey Chapters of the International Code Council (ICC), California Building Officials (CALBO), the Structural Engineers Association of Northern California (SEANOC), the Northern California Chapter of the Earthquake Engineering Research Institute (EERI-NC), and ABAG's Earthquake Program.	EQ	X								Community Development	ICC
b-2	b-2	Require engineered plan sets for seismic retrofitting of heavy two-story homes with living areas over garages, as well as for split level homes (that is, homes not covered by Plan Set A), until standard plan sets and construction details become available.	EQ	X								Community Development	
b-3	b-3	Require engineered plan sets for seismic retrofitting of homes on steep hillsides (because these homes are not covered by Plan Set A).	EQ	X								Community Development	
b-4	b-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, including application of Plan Set A.	EQ							X			
b-5	b-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 or additional classes that might be offered by the CALBO Training Institute) on retrofitting of single-family homes.	EQ							X			
b-6	b-6	Conduct demonstration projects on common existing housing types demonstrating structural and nonstructural mitigation techniques as community models for earthquake mitigation.	EQ							X			
b-7	b-7	Provide retrofit classes or workshops for homeowners in your community, or help promote utilization of subregional workshops in the South Bay, East Bay, Peninsula, and North Bay as such workshops become available through outreach using existing community education programs.	EQ							X			
b-8	b-8	Establish tool-lending libraries with common tools needed for retrofitting for use by homeowners with appropriate training.	EQ							X			

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b-9	b-9	(reworded) Provide financial incentives to owners of single-family homes to retrofit if those retrofits comply with Plan Set A or IEBC 2006 in addition to that provided by existing State law that makes such retrofits exempt from increases in property taxes.	EQ								X		
<b>HSNG - c - Soft-Story Multifamily Residential Structures Vulnerable to Earthquakes</b>													
c-1	c-1	Require engineered plan sets for voluntary or mandatory soft-story seismic retrofits by private owners until a standard plan set and construction details become available.	EQ	X								Community Development	
c-2	c-2	Adopt the 2009 (changed date) International Existing Building Code or the latest applicable standard for the design of voluntary or mandatory soft-story building retrofits for use in city/county building department regulations. In addition, allow use of changes to that standard recommended by SEAOC for the 2012 IEBC.	EQ	X								Community Development	Adopted the 2010 California Existing Building Code, Title 24 Part 10. Adopted 1997 UBC in 2003
c-3	c-3	Work to educate building owners, local government staff, engineers, and contractors on privately-owned soft-story retrofit procedures and incentives using materials such as those developed by ABAG and the City of San Jose (see <a href="http://quake.abag.ca.gov/eqhouse.html">http://quake.abag.ca.gov/eqhouse.html</a> ).	EQ								X		
c-4	c-4	Conduct an inventory of privately-owned existing or suspected soft-story residential structures as a first step in establishing voluntary or mandatory programs for retrofitting these buildings.	EQ								X		
c-5	c-5	Use the soft-story inventory to require private owners to inform all existing tenants (and prospective tenants prior to signing a lease agreement) that they may live in this type of building.	EQ								X		
c-6	c-6	Use the soft-story inventory to require private owners to inform all existing and prospective tenants that they may need to be prepared to live elsewhere following an earthquake if the building has not been retrofitted.	EQ								X		
c-7	c-7	Investigate and adopt appropriate financial, procedural, and land use incentives (such as parking waivers) for private owners of soft-story buildings to facilitate retrofit such as those described by ABAG (see <a href="http://quake.abag.ca.gov/fixit">http://quake.abag.ca.gov/fixit</a> ).	EQ								X		
c-8	c-8	(reworded) Explore development of State regulations or legislation to require or encourage private owners of soft-story structures to strengthen them.	EQ								X		

### Housing Mitigation Strategies

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c-9	c-9	Provide technical assistance in seismically strengthening privately-owned soft-story structures.	EQ	X								Community Development	
d-1	d-1	<b>HSNG - d - Unreinforced Masonry Housing Stock</b> Continue to actively implement existing State law that requires cities and counties to maintain lists of the addresses of unreinforced masonry buildings and inform private property owners that they own this type of hazardous structure.	EQ	X								Community Development	
d-2	d-2	Accelerate retrofitting of privately-owned unreinforced masonry structures that have not been retrofitted, for example, by (a) actively working with owners to obtain structural analyses of their buildings, (b) helping owners obtain retrofit funding, (c) adopting a mandatory versus voluntary retrofit program, and/or (d) applying penalties to owners who show inadequate efforts to upgrade these buildings.	EQ								X		
d-3	d-3	Require private owners to inform all existing tenants (and prospective tenants prior to signing a lease agreement) that they live in an unreinforced masonry building and the standard to which it may have been retrofitted.	EQ								X		
d-4	d-4	As required by State law, require private owners to inform all existing tenants that they may need to be prepared to live elsewhere following an earthquake even if the building has been retrofitted, because it has probably been retrofitted to a life-safety standard, not to a standard that will allow occupancy following major earthquakes.	EQ								X		

## Housing Mitigation Strategies

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2009-2010	e-1	<p>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).</p> <p>Inventory non-ductile concrete, tilt-up concrete (such as converted lofts), and other privately-owned potentially structurally vulnerable residential buildings.</p> <p>Adopt the 2009 International Existing Building Code or the latest applicable standard for the design of voluntary or mandatory retrofit of privately-owned seismically vulnerable buildings.</p> <p>Adopt one or more of the following strategies as incentives to encourage retrofit of privately-owned seismically vulnerable residential buildings:</p> <p>(a) waivers or reductions of permit fees, (b) below-market loans, (c) local tax breaks, (d) grants to cover the cost of retrofitting or of a structural analysis, (e) land use (such as parking requirement waivers) and procedural incentives, or (f) technical assistance.</p>	EQ	Existing Program	Existing Program, Underfunded	Very High - Unofficial Program - Becomes Official	High - Actively Looking for Funding	Moderate	Under Study	Not Applicable, or Not Cost Effective	Not Yet Considered			
	e-2		EQ							X				
	e-3		EQ	X									Community Development	Adopted the 2010 California Existing Building Code, Title 24 Part 10. Adopted 1997 UBC in 2003
	e-4		EQ									X		
	f-1	<p>Continue to require that all new housing be constructed in compliance with (deleted "structural") requirements of the most recently adopted version of the <i>California Building Code</i>.</p> <p>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.</p>	EQ	X								Community Development	Local Amendments adopted in 2003 that include more stringent requirements than Calif. Bldg. Code	
	f-2		EQ	X									Community Development	
	g-1	<p>Increase efforts to reduce hazards in existing private development in wildland-urban-interface fire-threatened communities or in areas exposed to high-to-extreme fire threat through improving engineering design and vegetation management for mitigation, appropriate code enforcement, and public education on defensible space mitigation strategies.</p> <p>Tie public education on defensible space and a comprehensive defensible space ordinance to a field program of enforcement.</p>	WF							X		Community Development	New mapping since 2004 established that Menlo Park does not have area designated as wildland-urban-interface.	
	g-2		WF									X		



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g-3	g-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 <a href="http://osfm.fire.ca.gov/structural.html">http://osfm.fire.ca.gov/structural.html</a> .	WF	Existing Program				Moderate	Under Study	Not Applicable, or Not Cost Effective	Not Yet Considered	Community Development	New mapping since 2004 established that Menlo Park does not have area designated as wildland-urban-interface.
g-4	g-4	Create or identify "model" properties showing defensible space and structural survivability in neighborhoods that are wildland-urban-interface fire-threatened communities or in areas exposed to high-to-extreme fire threat.	WF							X	X		
g-5	g-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.	WF							X		Community Development	New mapping since 2004 established that Menlo Park does not have area designated as wildland-urban-interface.
g-6	g-6	Adopt and amend as needed updated versions of the <i>California Building and Fire Codes</i> so that optimal fire-protection standards are used in construction and renovation projects of private buildings.	WF									Community Development	Adopted 2010 California Building Code. The Menlo Park Fire Protection District adopts and enforces the fire code.
g-7	g-7	Create a mechanism to enforce provisions of the <i>California Building and Fire Codes</i> and other local codes that require the installation of smoke detectors and fire-extinguishing systems on existing residential buildings by making installation a condition of (a) finalizing a permit for any work valued at over a fixed amount and/or (b) on any building over 75 feet in height, and/or (b) as a condition for the transfer of property.	WF									Community Development (with the exception of transfer of property.)	The installation of smoke detectors and fire-extinguishing systems are mandated when required by the 2010 California Building and Residential Codes. The City does not have an ordinance mandating the installation of smoke detectors and fire-extinguishing systems at the transfer of property.
g-8	g-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.	WF								X		

## Housing Mitigation Strategies

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g-9	g-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.	WF	X								Public Works	Goats allowed in certain areas around property to help with weed control
g-10	g-11	Establish special funding mechanisms (such as Fire Hazard Abatement Districts or regional bond funding) to fund reduction in fire risk of existing properties through vegetation management that includes reduction of fuel loads, use of defensible space, and fuel breaks.	WF							X			
g-11	g-12	Work with residents in rural-residential areas to ensure adequate plans are developed for appropriate access and evacuation in wildland-urban-interface fire-threatened communities or in areas exposed to high-to-extreme fire threat. For example, in some areas, additional roads can be created, and in other areas, the communities will need to focus on early warning and evacuation because additional roads are not feasible.	WF							X		Community Development	New mapping since 2004 established that Menlo Park does not have area designated as wildland-urban-interface.
g-12	g-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.	WF					X					
g-13	g-14	Require fire sprinklers in all new or substantially remodeled multifamily housing, regardless of distance from a fire station.	WF					X					
g-14	g-15	Require sprinklers in all mixed use development to protect residential uses from fires started in non-residential areas.	WF					X					
g-15	g-16	Compile a list of privately-owned 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.	WF							X			
g-16	g-17	Conduct periodic fire-safety inspections of all multi-family buildings, as required by State law.	WF							X			

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g-17	g-18	Ensure that city/county-initiated fire-preventive vegetation-management techniques and practices for creek sides and high-slope areas do not contribute to the landslide and erosion hazard. For example, vegetation in these sensitive areas could be thinned, rather than removed, or replanted with less flammable materials. When thinning, the non-native species should be removed first. Other options would be to use structural mitigation, rather than vegetation management in the most sensitive areas.	WF LS								X		
g-18	g-19	Create a mechanism to require the bracing of water heaters and flexible couplings on gas appliances, and/or (as specified under "b. Single-family homes vulnerable to earthquakes" above) the bolting of homes to their foundations and strengthening of cripple walls to reduce fire ignitions due to earthquakes.	EQ WF	X								Community Development	Continuing to work with other agencies to manage fire risk, but do not require shut-off valves be installed; valves tend to shut off gas too quickly with little provocation which requires several days for PG&E to come to property and restore gas service.
g-19	g-20	Work with the State Fire Marshall, the California Seismic Safety Commission, Pacific Earthquake Engineering Research Center (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 <a href="http://www.seismic.ca.gov/pub/CSSC_2002-03_Natural%20Gas%20Safety.pdf">http://www.seismic.ca.gov/pub/CSSC_2002-03_Natural%20Gas%20Safety.pdf</a> . Also note - any valves that are installed may need to have both excess flow and seismic triggers ("hybrid" valves).	EQ WF								X		
g-20	new	Work with insurance companies to create a public/private partnership to give a discount on fire insurance premiums to "Forester Certified" Fire Wise landscaping and fire-resistant building materials on private property.	WF										
h-1	h-1	<b>HSNG - h - Flooding</b> To reduce flood risk, thereby reducing the cost of flood insurance to private property owners, work to qualify for the highest-feasible rating under the Community Rating System of the National Flood Insurance Program.	FL										
h-2	h-2	Balance the housing needs of residents against the risk from potential flood-related hazards.	FL	X								Community Development	

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h-3	h-3	Ensure that new private development pays its fair share of improvements to the storm drainage system necessary to accommodate increased flows from the development, or does not increase runoff by draining water to pervious areas or detention facilities.	FL	X								Public Works	
h-4	h-4	Provide sandbags and plastic sheeting to residents in anticipation of rainstorms, and deliver those materials to vulnerable populations upon request.	FL	X								Public Works	
h-5	h-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.	FL	X								Public Works	
h-6	h-6	Apply floodplain management regulations for private development in the floodplain and floodway.	FL	X								Community Development	
h-7	h-7	Ensure that new subdivisions are designed to reduce or eliminate flood damage by requiring lots and rights-of-way be laid out for the provision of approved sewer and drainage facilities, providing on-site detention facilities whenever practicable.	FL	X								Public Works	
h-8	h-8	Encourage home and apartment owners to participate in home elevation programs within flood hazard areas.	FL								X		
h-9	h-9	As funding opportunities become available, encourage home and apartment owners to participate in acquisition and relocation programs for areas within floodways.	FL								X		
h-10	h-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.	FL								X		

## Housing Mitigation Strategies

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2009-2010	i-1			Existing Program	Existing Program, underfunded	Very High - Unofficial Program - Becomes Official on Plan Adoption, no funding needed	High - Actively Looking for Funding	Moderate	Under Study	Not Applicable, or Not Appropriate, or Not Cost Effective	Not Yet Considered		
HSNG - i-1	i-1	<p><b>LS</b></p> <p><b>Landslides and Erosion</b></p> <p>Increase efforts to reduce landslides and erosion in existing and future development by improving appropriate code enforcement and use of applicable standards for private property, such as those appearing in the <i>California Building Code</i>, <i>California Geological Survey Special Report 117 - Guidelines for Evaluating and Mitigating Seismic Hazards in California</i>, <i>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</i>, and the <i>California Board for Geologists and Geophysicists Guidelines for Engineering Geologic Reports</i>. 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.</p>	LS	Existing Program	Existing Program, underfunded	Very High - Unofficial Program - Becomes Official on Plan Adoption, no funding needed	High - Actively Looking for Funding	Moderate	Under Study	Not Applicable, or Not Appropriate, or Not Cost Effective	Not Yet Considered	Community Development	
2009-2010	i-2												
HSNG - i-2	i-2	<p><b>LS</b></p> <p>Increase efforts to reduce landslides and erosion in existing and future private development through continuing education of design professionals on mitigation strategies.</p>	LS										

### Housing Mitigation Strategies

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j-1	j-1 same as econ 5	<b>HSNG - j - Building Reoccupancy</b> Develop and enforce a repair and reconstruction ordinance to ensure that damaged buildings are repaired in an appropriate and timely manner and retrofitted concurrently. This repair and reconstruction ordinance should apply to all public and private buildings, and also apply to repair of all damage, regardless of cause. See <a href="http://quake.abag.ca.gov/recovery/info-repair-ord.html">http://quake.abag.ca.gov/recovery/info-repair-ord.html</a> .	EQ LS WF FL SEC								X		
j-2	new same as econ 6	Establish preservation-sensitive measures for the repair and reoccupancy of historically significant privately-owned structures, including requirements for temporary shoring or stabilization where needed, arrangements for consulting with preservationists, and expedited permit procedures for suitable repair or rebuilding of historically or architecturally valuable structures.	EQ LS WF FL SEC	X								Community Development	
k-1	k-1	<b>HSNG - k - Public Education</b> Provide information to residents of your community on the availability of interactive hazard maps showing your community on ABAG's web site.	EQ LS WF FL SEC	X								Public Works	Project In Progress. Internet based warning system to update residents on flood levels of San Francisco Creek. \$25,000.
k-2	k-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.	EQ LS WF FL SEC	X								Police Dept.	
k-3	k-3	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.	EQ LS WF FL SEC								X		
k-4	k-4	Develop a public education campaign on the cost, risk, and benefits of earthquake, flood, and other hazard insurance as compared to mitigation.	EQ LS WF FL SEC								X		

## Housing Mitigation Strategies

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k-5	k-5	Use disaster anniversaries, such as April (the 1906 earthquake), September (9/11), and October (Loma Prieta earthquake and Oakland Hills fire), to remind the public of safety and security mitigation activities.	EQ LS WF FL SEC	Existing Program								Police Dept.	
k-6	k-6	Sponsor the formation and training of Community Emergency Response Teams (CERT) for residents in your community. [Note – these programs go by a variety of names in various cities and areas.]	EQ LS WF FL SEC									Fire Dept.	
k-7	k-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.	FL						X				
k-8	k-8	Institute the neighborhood watch block captain and team programs outlined in the Citizen Corps program guide.	EQ LS WF FL SEC								X	Police Dept.	
k-9	k-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.	WF								X		
k-10	k-10	Train homeowners to locate and shut off gas valves if they smell or hear gas leaking.	EQ LS WF FL SEC								X		
k-11	k-12	Develop a program to provide at-cost NOAA weather radios to residents of flood hazard areas that request them, with priority to neighborhood watch captains and others trained in their use.	FL								X		
k-12	k-13	Make use of the materials on the ABAG web site at <a href="http://quake.abag.ca.gov/fixit">http://quake.abag.ca.gov/fixit</a> 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.)	EQ			X						Public Works	Link to ABAG web-site
k-13	k-14	Develop a "Maintain-a-Drain" campaign, similar to that of the City of Oakland, encouraging private businesses and residents to keep storm drains in their neighborhood free of debris.	FL								X	Public Works	

### Housing Mitigation Strategies

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k-14	k-15	Encourage the formation of a community- and neighborhood-based approach to wildfire education and action through local Fire Safe Councils and the <i>Fire Wise Program</i> . This effort is important because grant funds are currently available to offset costs of specific council-supported projects.	WF						X				
k-15	k-16	Inform shoreline-property owners of the possible long-term economic threat posed by rising sea levels.	FL								X		
k-16	k-17	Distribute appropriate materials related to disaster mitigation and preparedness to residents. Appropriate materials are (1) culturally appropriate and (2) suitable for special needs populations. For example, such materials are available on the <a href="http://www.preparenow.org">http://www.preparenow.org</a> website and from non-governmental organizations that work with these communities on an on-going basis.	EQ LS WF FL SEC					X				Public Works	available - will be added to web-site
deleted	g-10	DELETED - REPLACED BY DISCUSSION OF REVERSE 911 in GOVT c-14.											
deleted	k-11												



## Economy Mitigation Strategies

Strategy Number		Specific Mitigation Strategy	Applicable Hazards	Priority (CHECK ONLY ONE)								Responsible Agency or Department (Required if Existing Program, Existing Program under funded, Very High, High, or Under Study)	Funding for High - Actively Looking for	Under Study	Not Applicable, or Not Appropriate, or Not Cost Effective	Not Yet Considered	Orphaned or Resurrection # (if existing program), Estimated Cost and Possible Funding Agency (if high priority), Estimated Date of Completion (if study), <a href="http://www.abag.org">WWW.ABAG.ORG</a>
2009-2010 Strategy Number	2005 Original Strategy Number			Existing Program	Existing Program, underfunded	Very High - Unofficial Program - Becomes Official, no funding needed	High - Actively Looking for	Moderate	Under Study	Not Applicable, or Not Appropriate, or Not Cost Effective	Not Yet Considered						
a-1	a-1	Assist in ensuring adequate hazard disclosure by working with real estate agents to improve enforcement of real estate disclosure requirements for commercial and industrial properties with regard to seven official natural hazard zones: 1) Special Flood Hazard Areas (designated by FEMA), 2) Areas of Potential Flooding from dam failure inundation, 3) Very High Fire Hazard Severity Zones, 4) Wildland Fire Zones, 5) Earthquake Fault Zones (designated under the Alquist-Priolo Earthquake Fault Zoning Act), and the 6) Liquefaction and Landslide Hazard Zones (designated under the Seismic Hazard Mapping Act).	EQ LS WF FL SEC	Existing Program	Existing Program, underfunded	Very High - Unofficial Program - Becomes Official, no funding needed	High - Actively Looking for	Moderate	Under Study	Not Applicable, or Not Appropriate, or Not Cost Effective	Not Yet Considered						
a-2	a-2	Create incentives for private owners of historic or architecturally significant commercial and industrial buildings to undertake mitigation to levels that will minimize the likelihood that these buildings will need to be demolished after a disaster, particularly if those alterations conform to the federal Secretary of the Interior's <i>Guidelines for Rehabilitation</i> .	EQ LS WF FL SEC														Community Development
<b>ECON - b</b>	<b>b-1</b>	<b>Soft-Story Commercial Buildings Vulnerable to Earthquakes</b>	EQ														Community Development
b-1	b-1	Require engineered plan sets for voluntary or mandatory soft-story seismic retrofits by private owners until a standard plan set and construction details become available.	EQ														Community Development
b-2	b-2	Adopt the 2009 (changed date) International Existing Building Code or the latest applicable standard for the design of voluntary or mandatory soft-story building retrofits for use in city/county building department regulations. In addition, allow use of changes to that standard recommended by SEAOC for the 2012 IEBC.	EQ														Community Development
b-3	b-3	Work to educate building owners, local government staff, engineers, and contractors on privately-owned soft-story retrofit procedures and incentives using materials such as those developed by ABAG and the City of San Jose (see <a href="http://quake.abag.ca.gov/eqhouse.html">http://quake.abag.ca.gov/eqhouse.html</a> .)	EQ														Community Development
b-4	b-4	Conduct an inventory of privately-owned existing or suspected soft-story commercial or industrial structures as a first step in establishing voluntary or mandatory programs for retrofitting these buildings.	EQ														Community Development

## Economy Mitigation Strategies

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b-5	b-5	Use the soft-story inventory to require private owners to inform all existing tenants (and prospective tenants prior to signing a lease agreement) that they may work in this type of building.	EQ	Existing Program							X		
b-6	b-6	Use the soft-story inventory to require private owners to inform all existing and prospective tenants that they may need to be prepared to work elsewhere following an earthquake if the building has not been retrofitted.	EQ								X		
b-7	b-7	Investigate and adopt appropriate financial, procedural, and land use incentives (such as parking waivers) for private owners of soft-story buildings to facilitate retrofit such as those described by ABAG (see <a href="http://quake.abag.ca.gov/fixit/">http://quake.abag.ca.gov/fixit/</a> ).	EQ								X		
b-8	b-8	(reworded) Explore development of State regulations or legislation to require or encourage private owners of soft-story structures to strengthen them.	EQ								X		
b-9	b-9	Provide technical assistance in seismically strengthening privately-owned soft-story structures.	EQ	X								Community Development	

## Economy Mitigation Strategies

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c-1	c-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 private property owners that they own this type of hazardous structure.	EQ	X								Community Development	
c-2	c-2	Accelerate retrofitting of privately-owned unreinforced masonry structures that have not been retrofitted, for example, by (a) actively working with owners to obtain structural analyses of their buildings, (b) helping owners obtain retrofit funding, (c) adopting a mandatory (rather than voluntary) retrofit program, and/or (d) applying penalties to owners who show inadequate efforts to upgrade these buildings.	EQ								X		
c-3	c-3	Require private owners to inform all existing tenants (and prospective tenants prior to signing a lease agreement) that they work in an unreinforced masonry building and the standard to which it may have been retrofitted.	EQ								X		
c-4	c-4	As required by State law, require private owners to inform all existing tenants that they may need to be prepared to work elsewhere following an earthquake even if the building has been retrofitted, because it has probably been retrofitted to a life-safety standard, not to a standard that will allow occupancy following major earthquakes.	EQ								X		
<b>ECON - d - Privately-Owned Structurally Vulnerable Buildings</b>													
d-1	d-1	Inventory non-ductile concrete, tilt-up concrete, and other privately-owned structurally vulnerable buildings.	EQ							X			
d-2	d-2	Adopt the 2009 International Existing Building Code or the latest applicable standard for the design of voluntary or mandatory retrofit of privately-owned seismically vulnerable buildings.	EQ	X								Community Development	Adopted the 2010 California Building Code
d-3	d-3	Adopt one or more of the following strategies as incentives to encourage retrofitting of privately-owned seismically vulnerable commercial and industrial buildings: (a) waivers or reductions of permit fees, (b) below-market loans, (c) local tax breaks, (d) grants to cover the cost of retrofitting or of a structural analysis, (e) land use (such as parking requirement waivers) and procedural incentives, or (f) technical assistance.	EQ								X		
<b>ECON - e - Wildfire and Structural Fires</b>													

## Economy Mitigation Strategies

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e-1	e-1	Increase efforts to reduce hazards in existing private development in wildland-urban-interface fire-threatened communities or in areas exposed to high-to-extreme fire threat through improving engineering design and vegetation management for mitigation, appropriate code enforcement, and public education on defensible space mitigation strategies.	WF	Existing Program						X		Community Development	No longer applicable; new mapping since 2004 established that Menlo Park does not have area designated as wildland-urban-interface.
e-2	new	Tie public education on defensible space and a comprehensive defensible space ordinance to a field program of enforcement.	WF								X		
e-3	e-2	Require that new privately-owned business and office buildings in high fire hazard areas be constructed of fire-resistant building materials and incorporate fire-resistant design features (such as minimal use of eaves, internal corners, and open first floors) to increase structural survivability and reduce ignitability.	WF							X		Community Development	No longer applicable; new mapping since 2004 established that Menlo Park does not have area designated as wildland-urban-interface.
e-4	e-3	Adopt and amend as needed updated versions of the <i>California Building and Fire Codes</i> so that optimal fire-protection standards are used in construction and renovation projects of private buildings.	WF							X		Community Development	No longer applicable; new mapping since 2004 established that Menlo Park does not have area designated as wildland-urban-interface.
e-5	e-4	Create a mechanism to enforce provisions of the <i>California Building and Fire Codes</i> and other local codes that require the installation of smoke detectors and fire-extinguishing systems on existing privately-owned buildings by making installation a condition of (a) finalizing a permit for any work valued at over a fixed amount and/or (b) on any building over 75 feet in height, and/or (b) as a condition for the transfer of property.	WF									Community Development	Adopted 2010 California Building Codes; Menlo Park Fire Protection District adopts and enforces Fire Code.
e-6	e-5	(reworded to more closely match the HSNB strategy) 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.	WF							X			
e-7	e-6	Establish special funding mechanisms (such as Fire Hazard Abatement Districts or regional bond funding) to fund reduction in fire risk of existing properties through vegetation management that includes reduction of fuel loads, use of defensible space, and fuel breaks.	WF							X		Community Development	No longer applicable; new mapping since 2004 established that Menlo Park does not have area designated as wildland-urban-interface.

## Economy Mitigation Strategies

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e-8	e-7	Establish special funding mechanisms (such as Fire Hazard Abatement Districts or regional bond funding) to fund fire-safety inspections of private properties, roving firefighter patrols on high fire-hazard days, and public education efforts.	WF						X				
e-9	e-8	Compile a list of privately-owned high-rise and high-occupancy buildings that are deemed, due to their age or construction materials, to be particularly susceptible to fire hazards, and determine an expeditious timeline for the fire-safety inspection of all such structures.	WF								X		
e-10	e-9	Conduct periodic fire-safety inspections of all privately-owned commercial and industrial buildings.	WF								X		
e-11	e-10	Work with the State Fire Marshall, the California Seismic Safety Commission, Pacific Earthquake Engineering Research Center (PEER), and other experts to identify and manage gas-related fire risks of privately-owned 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 <a href="http://www.seismic.ca.gov/pub/CSSC_2002-03_Natural%20Gas%20Safety.pdf">http://www.seismic.ca.gov/pub/CSSC_2002-03_Natural%20Gas%20Safety.pdf</a> . Also note - any values that are installed may need to have both	EQ WF	X									Continuing to work with other agencies to manage fire risk, but do not require shut-off valves be installed; valves tend to shut off gas too quickly with little provocation which requires several days for PG&E to come to property and restore gas service.
e-12	e-11	Ensure that city/county-initiated fire-preventive vegetation-management techniques and practices for creek sides and high-slope areas do not contribute to the landslide and erosion hazard.	WF								X	Community Development	
e-13	e-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 on private property.	WF								X		
<b>ECON - f - Flooding</b>													
f-1	f-1	To reduce flood risk, thereby reducing the cost of flood insurance to private property owners, work to qualify for the highest-feasible rating under the Community Rating System of the National Flood Insurance Program.	FL								X		
f-2	f-2	Balance the needs for private commercial and industrial development against the risk from potential flood-related hazards.	FL	X								Community Development	

## Economy Mitigation Strategies

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f-3	f-3	Ensure that new private development pays its fair share of improvements to the storm drainage system necessary to accommodate increased flows from the development, or does not increase runoff by draining water to pervious areas or detention facilities.	FL								X		
f-4	f-4	Provide sandbags and plastic sheeting to private businesses in anticipation of rainstorms, and deliver those materials to vulnerable populations upon request.	FL								X		
f-5	f-5	Provide information to private business on locations for obtaining sandbags and deliver those sandbags to those various locations throughout a city and/or county.	FL								X		
f-6	f-6	Apply floodplain management regulations for private development in the floodplain and floodway.	FL								X		
f-7	f-7	Encourage private business owners to participate in building elevation programs within flood hazard areas.	FL	X								Community Development	
f-8	f-8	As funding becomes available, encourage private business owners to participate in acquisition and relocation programs for areas within floodways.	FL								X		
f-9	f-9	Require an annual inspection of approved flood-proofed privately-owned 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 <i>Flood Emergency Operation Plan and Inspection &amp; Maintenance Plan</i> .	FL								X		

**Economy Mitigation Strategies**

2009-2010 Strategy Number	2005 Original Strategy Number	Specific Mitigation Strategy	Applicable Hazards	Existing Program	Existing Program, underfunded	Very High - Unofficial Program - Becomes Official on Plan Adoption, no funding needed	High - Actively Looking for Funding	Moderate	Under Study	Not Applicable, or Not Cost Effective	Not Yet Considered	Responsible Agency or Department (Required if Existing Program, Existing Program under funded, 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), <a href="http://WWW.FACILITYMANAGEMENT.ORG">WWW.FACILITYMANAGEMENT.ORG</a>
g-1	g-1	<b>ECON - g - Landslides and Erosion</b> Increase efforts to reduce landslides and erosion in existing and future development by improving appropriate code enforcement and use of applicable standards for private property, such as those appearing in the <i>California Building Code</i> , California Geological Survey Special Report 117 – <i>Guidelines for Evaluating and Mitigating Seismic Hazards in California</i> , American Society of Civil Engineers (ASCE) report <i>Recommended Procedures for Implementation of DMG Special Publication 117: Guidelines for Analyzing and Mitigating Landslide Hazards in California</i> , and the California Board for Geologists and Geophysicists <i>Guidelines for Engineering Geologic Reports</i> . 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.	LS	Existing Program	Existing Program, underfunded	Very High - Unofficial Program - Becomes Official on Plan Adoption, no funding needed	High - Actively Looking for Funding	Moderate	Under Study	Not Applicable, or Not Cost Effective	Not Yet Considered		
g-2	g-2	Increase efforts to reduce landslides and erosion in existing and future private development through continuing education of design professionals on mitigation strategies.	LS								X		
h-1	h-1	<b>ECON - h - New Construction and Earthquakes</b> Continue to require that all new privately-owned commercial and industrial buildings be constructed in compliance with (deleted "structural") requirements of the most recently adopted version of the <i>California Building Code</i> .	EQ	X								Community Development	Local Amendments adopted in 2003 that include more stringent requirements than the Calif. Bldg. Code
h-2	h-2	Conduct appropriate employee training and support continued education to ensure enforcement of construction standards for private development.	EQ	X								Community Development	
h-3	h-3	Work with private building owners to help them recognize that many strategies that increase earthquake resistance also decrease damage in an explosion. In addition, recognize that ventilation systems can be designed to contain airborne biological agents.	EQ SEC	X								Community Development	

## Economy Mitigation Strategies

2009-2010 Strategy Number	2005 Original Strategy Number	Specific Mitigation Strategy	Applicable Hazards	Existing Program	Existing Program, underfunded	Very High - Unofficial Program-Becomes Official on Plan Adoption, no funding needed	High - Actively Looking for Funding	Moderate	Under Study	Not Applicable, or Not Cost Effective	Not Yet Considered	Responsible Agency or Department (Required if Existing Program, Existing Program under funded, 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), <a href="http://www.ci.santaclarita.ca.us">http://www.ci.santaclarita.ca.us</a>
i-1	ECON - i-1	<b>Building Reoccupancy</b> Institute a program to encourage owners of private buildings to participate in a program similar to San Francisco's Building Occupancy Resumption Program (BORP). This program permits owners of private buildings to hire qualified structural engineers to create building-specific post-disaster inspection plans and allows these engineers to become automatically deputized as City/County inspectors for these buildings in the event of an earthquake or other disaster.	EQ LS WF FL SEC								X		
i-2		Actively notify private 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.	EQ LS WF FL SEC								X		
i-3		Actively notify owners of <i>educational facility</i> 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.	EQ LS WF FL SEC								X		
i-4		Allow private building owners to participate in a BORP-type program as described above, but not actively encourage them to do so.	EQ LS WF FL SEC								X		
i-5		Develop and enforce a repair and reconstruction ordinance to ensure that damaged buildings are repaired in an appropriate and timely manner and retrofitted concurrently. This repair and reconstruction ordinance should apply to all public and private buildings, and also apply to repair of all damage, regardless of cause. See <a href="http://quake.abag.ca.gov/recovery/info-repair-ord.html">http://quake.abag.ca.gov/recovery/info-repair-ord.html</a> .	EQ LS WF FL SEC								X		
i-6		Establish preservation-sensitive measures for the repair and reoccupancy of historically significant privately-owned structures, including requirements for temporary shoring or stabilization where needed, arrangements for consulting with preservationists, and expedited permit procedures for suitable repair or rebuilding of historically or architecturally valuable structures.	EQ LS WF FL SEC									Community Development	
ECON - j -		Public Education											



## Economy Mitigation Strategies

Strategy Number	Strategy Number	Specific Mitigation Strategy	Applicable Hazards	Existing Program	Existing Program, underfunded	Very High - Unofficial Program - Becomes Official on Plan Adoption, no funding needed.	High - Actively Looking for Funding	Moderate	Under Study	Not Applicable, or Not Cost Effective	Not Yet Considered	Responsible Agency or Department (Required if Existing Program, Existing Program under funded, Very High, High, or Under Study)	Orphanance or Resoration # (if existing program), Estimated Cost and Possible Funding Agency (if high priority), Estimated Date of Completion (if study), <a href="http://bit.ly/16oct2009">http://bit.ly/16oct2009</a>
j-1	2009-2010	Provide information to private business owners and their employees on the availability of interactive hazard maps on ABAG's web site.	EQ LS WF FL SEC	Existing Program								Public Works	Link to ABAG hazard maps added to Public Works website.
j-2		Develop printed materials, utilize existing materials (such as developed by FEMA and the American Red Cross), conduct workshops, and/or provide outreach encouraging private businesses' employees to have family disaster plans that include drop-cover-hold earthquake drills, fire and storm evacuation procedures, and shelter-in-place emergency guidelines.	EQ LS WF FL SEC	Existing Program								Police Dept.	
j-3		Develop and print materials, conduct workshops, and provide outreach to Bay Area private businesses focusing on business continuity planning.	EQ LS WF FL SEC								X		
j-4		Inform Bay Area private business owners of mitigation activities, including elevation of appliances above expected flood levels, use of fire-resistant roofing and defensible space in wildland-urban-interface fire-threatened communities or in areas exposed to high-to-extreme fire threat, structural retrofitting techniques for older buildings, and use of intelligent grading practices through workshops, publications, and media announcements and events.	WF FL								X		
j-5		Sponsor the formation and training of Community Emergency Response Teams (CERT) training for other than your own employees through partnerships with local private businesses. [Note – these programs go by a variety of names in various cities and areas.]	EQ LS WF FL SEC	Existing Program								Fire Dept.	
j-6		Assist private businesses in the development of defensible space through the use of, for example, "tool libraries" for weed abatement tools, roadside collection and/or chipping services (for brush, weeds, and tree branches) in wildland-urban-interface fire-threatened communities or in areas exposed to high-to-extreme fire threat.	WF								X		
j-7		Make use of the materials developed by others (such as found on ABAG's web site at <a href="http://quake.abag.ca.gov/business">http://quake.abag.ca.gov/business</a> ) to increase mitigation activities related to earthquakes by groups other than your own agency. ABAG plans to continue to improve the quality of those materials over time.	EQ	Existing Program								Public Works	Link to ABAG hazard maps added to Public Works Emergencies web page.

## Economy Mitigation Strategies

2009-2010 Strategy Number	2005 Original Strategy Number	Specific Mitigation Strategy	Applicable Hazards	Existing Program	Existing Program, underfunded	Very High - Unofficial Program - Becomes Official on Plan Adoption, no funding needed	High - Actively Looking for Funding	Moderate	Under Study	Not Applicable, or Not Cost Effective	Not Yet Considered	Responsible Agency or Department (Required if Existing Program, Existing Program under funded, 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), <a href="http://www.ci.oakland.ca.us">WWW.CI.OAKLAND.CA.US</a>
j-8	j-8	Develop a "Maintain-a-Drain" campaign, similar to that of the City of Oakland, encouraging private businesses and residents to keep storm drains in their neighborhood free of debris.	FL								X		
j-9	j-9	Encourage the formation of a community- and neighborhood-based approach to wildfire education and action through local Fire Safe Councils and the <i>Fire Wise Program</i> . This effort is important because grant funds are currently available to offset costs of specific council-supported projects.	WF							X		Fire Dept.	
j-10	j-10	Encourage private 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.	SEC EQ								X		
j-11	j-11	Encourage joint meetings of security and operations personnel at major private employers to develop innovative ways for these personnel to work together to increase safety and security.	SEC EQ								X		
j-12	j-12	Inform private shoreline-property owners of the possible long-term economic threat posed by rising sea levels.	FL								X		
j-13	j-13	Distribute appropriate materials related to disaster mitigation and preparedness to private business owners. Appropriate materials are (1) culturally appropriate and (2) suitable for special needs populations. For example, such materials are available on the <a href="http://www.preparenow.org">http://www.preparenow.org</a> website and from non-governmental organizations that work with these communities on an on-going basis.	EQ LS WF FL SEC										Link to ready.gov included on Public Works Emergencies web page.

**Government Mitigation Strategies**

2009-2010 Strategy Number	2005 Original Strategy Number	Specific Mitigation Strategy	Applicable Hazards	Priority (CHECK ONLY ONE)								Existing Program	Existing Program, underfunded	Very High - Unofficial Program - Becomes Official on Plan Adoption, no funding needed	High - Actively Looking for Funding	Moderate	Under Study	Not Applicable, or Not Appropriate, or Not Cost Effective	Not Yet Considered	Responsible Agency or Department (Required if Existing Program, Existing Program underfunded, Very High, High, or Under Study)	Funds needed are approximately \$100,000. - \$500,000.	
				EQ	LS	WF	FL	SEC														
a-1	a-1	Assess the vulnerability of critical facilities (such as city halls, fire stations, operations and communications headquarters, community service centers, seaports, and airports) to damage in natural disasters and make recommendations for appropriate mitigation.	EQ LS WF FL	<input checked="" type="checkbox"/>																		
a-2	a-2	Retrofit or replace critical facilities that are shown to be vulnerable to damage in natural disasters.	EQ LS WF FL SEC	<input checked="" type="checkbox"/>																		
a-3	a-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.	EQ																			
a-4	a-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. Such contents and equipment includes computers and servers, phones, files, and other tools used by staff to conduct daily business.	EQ LS WF FL SEC																			
a-5	a-5	Encourage joint meetings of security and operations personnel at critical facilities to develop innovative ways for these personnel to work together to increase safety and security.	EQ LS WF FL SEC	<input checked="" type="checkbox"/>																		
a-6	a-6	When installing micro and/or surveillance cameras around critical public assets tied to web-based software, and developing a surveillance protocol to monitor these cameras, investigate the possibility of using the cameras for the secondary purpose of post-disaster damage assessment.	EQ LS WF FL SEC	<input checked="" type="checkbox"/>																		





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c-3	new	Offer CERT/NERT-type training to your employees.	EQ LS WF FL SEC	Existing Program							X		
c-4	b-5 (a)	Periodically assess the need for new or relocated fire or police stations and other emergency facilities.	EQ LS WF FL SEC	X								Public Works	
c-5	b-5 (b)	Periodically assess the need for changes in staffing levels, as well as for additional or updated supplies, equipment, technologies, and in-service training classes.	EQ LS WF FL SEC	X								City Admin	
c-6	b-6	Ensure that fire, police, and other emergency personnel have adequate radios, breathing apparatuses, protective gear, and other equipment to respond to a major disaster.	EQ LS WF FL SEC	X								Police Dept.	
c-7	b-7	Participate in developing and maintaining a system of interoperable communications for first responders from cities, counties, special districts, state, and federal agencies.	EQ LS WF FL SEC						X			Police Dept.	
c-8	b-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.	EQ LS WF FL SEC	X								Police Dept.	
c-9	b-9	Purchase command vehicles for use as mobile command/EOC vehicles if current vehicles are unsuitable or inadequate.	EQ LS WF FL SEC	X								Police Dept.	
c-10	b-10	Maintain the local government's emergency operations center in a fully functional state of readiness.	EQ LS WF FL SEC	X								Police Dept.	

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c-11	b-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.	EQ LS WF FL SEC	X								Police Dept.	
c-12	b-12	Maintain and update as necessary the local government's Standardized Emergency Management System (SEMS) Plan and the National Incident Management System (NIMS) Plan, and submit an appropriate NIMSCAST report.	EQ LS WF FL SEC	X								Police Dept.	
c-13	b-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.	EQ LS WF FL SEC	X								Police Dept.	
c-14	b-14 & b-22	Install alert and warning systems for rapid evacuation or shelter-in-place. Such systems include outdoor sirens and/or reverse-911 calling systems.	EQ LS WF FL SEC	X								Police Dept.	
c-15	b-15	Conduct periodic tests of the alerting and warning system. (deleted some wording)	EQ LS WF FL SEC	X								Police Dept.	
c-16	b-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.	EQ LS WF FL SEC	X								Police Dept.	
c-17	b-17	Monitor weather during times of high fire risk using, for example, weather stations tied into police and fire dispatch centers.	WF	X								Public Works	
												Police Dept.	





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d-1	c-1	Promote information sharing among overlapping and neighboring local governments, including cities, counties, and social districts as well as utilities.	EQ LS WF FL SEC	X								City Admin	
d-2	c-2	Recognize that emergency services is more than the coordination of police and fire response; it also includes planning activities with providers of water, food, energy, transportation, financial, information, and public health services.	EQ LS WF FL SEC	X								City Admin	
d-3	c-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 capital improvement programs for most effectively reducing the threat of flooding. Work toward making this process more formal to insure that flooding is considered at existing joint-agency meetings.	FL	X								Public Works	
d-4	c-4	As new flood-control projects are completed, request that FEMA revise its flood-insurance rate maps and digital Geographic Information System (GIS) data to reflect flood risks as accurately as possible.	FL	X								Public Works	
d-5	c-5	Participate in FEMA's National Flood Insurance Program.	FL	X								Public Works	
d-6	c-6	Participate in multi-agency efforts to mitigate fire threat, such as the Hills Emergency Forum (in the East Bay), various Fire Safe Council programs, and city-utility task forces. Such participation increases a jurisdiction's competitiveness in obtaining grants.	WF	X								Police	
d-7	c-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.	EQ LS WF FL SEC	X								Police	

**Government Mitigation Strategies**

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d-8 2009-2010	c-8 2005 Original	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.	EQ LS	X								City Admin	
d-9	c-9	Conduct and/or promote attendance at local or regional hazard conferences and workshops for elected officials and staff to educate them on the critical need for programs in mitigating earthquakes, wildfires, flood, and landslides.	EQ LS WF FL SEC								X	City Admin	
d-10	c-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.	EQ LS WF FL SEC	X									
e-1	e-1	<b>GOVT - e - Take a Lead in Loss and Risk Assessment Activities</b> Work with the cities, counties, and special districts in the Bay Area to encourage them to adopt a Local Hazard Mitigation Plan and to assist them in integrating it into their overall planning process. <b>RESPONSIBILITY:</b> ABAG only; all others are "not applicable."	EQ LS WF FL DR TS SEC Flu Ag Heat							X			
e-2	e-2	Improve the risk assessment and loss estimation work in the <i>Taming Natural Disasters</i> report and multi-jurisdictional plan related to natural disasters. <b>RESPONSIBILITY:</b> ABAG only; all others are "not applicable."	EQ LS WF FL DR TS Flu Ag Heat							X			

## Education Mitigation Strategies

Specific Mitigation Strategy		Applicable Hazards	Existing Program	Existing Program, underfunded	Very High - Unofficial Program-Becomes Official on Plan Adoption, no funding needed	High - Actively Looking for Funding	Moderate	Under Study	Not Applicable, Not Appropriate, or Not Cost Effective	Not Yet Considered	Responsible Agency or Department (Required if Existing Program, Existing Program under funded, Very High, High, or Under Study)	Ordinance or Resolution # (if existing program), Possible Funding Agency (if high priority), Estimated Date of Completion (if study), WHY if not same as regional priority, OR Other Comments
Priority (CHECK ONLY ONE)												
2009-2010 Strategy Number	2005 Original Strategy Number	Specific Mitigation Strategy	EQ LS WF FL SEC	Existing Program								
a-1	a-1	<b>EDUC - a - Focus on Critical Facilities (...Owned by School Districts)</b> Assess the vulnerability of critical public education facilities to damage in natural disasters and make recommendations for appropriate mitigation.	EQ LS WF FL SEC						X			
a-2	a-2	Retrofit or replace critical public education facilities that are shown to be vulnerable to damage in natural disasters.	EQ LS WF FL SEC						X			
a-3	a-3	Conduct comprehensive programs to identify and mitigate problems with facility contents, architectural components, and equipment that will prevent critical public education buildings from being functional after major disasters.	EQ LS WF FL SEC						X			
a-4	a-4	As a secondary focus, assess the vulnerability of non-critical educational facilities (that is, those that do not house students) 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.	EQ LS WF FL SEC						X			
a-5	new	Assess the vulnerability of critical private education, pre-school, and day care facilities to damage in natural disasters and make recommendations for appropriate mitigation.	EQ LS WF FL SEC							X		
a-6	a-5	(Major Reworking) Work with CalEMA and the Division of the State Architect to ensure that there will be an adequate group of Safety Assessment Program (SAP) inspectors trained and deployed by CalEMA to schools for post-disaster inspection. In addition, if a school district is uncomfortable with delays in inspection due to too few SAP inspectors available in catastrophic disasters, formalized arrangements can also be created with those inspectors certified by the Division of the State Architect as construction inspectors to report to the district, assess damage, and determine if the buildings can be reoccupied.	EQ LS WF FL SEC						X			
<b>EDUC - b - Use of Educational Facilities as Emergency Shelters</b>												

## Education Mitigation Strategies

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b-1	b-1	Work cooperatively with the American Red Cross, cities, counties, and non-profits to set up memoranda of understanding for use of education facilities as emergency shelters following disasters.	EQ LS WF FL SEC								X		
b-2	b-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.	EQ LS WF FL SEC								X		
b-3	b-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.	EQ LS WF FL SEC								X		
<b>EDUC - c - Actions Related to Disaster Preparedness and Recovery Planning</b>													
c-1	c-1 new	Encourage employees of schools to have family disaster plans and conduct mitigation activities in their own homes.	EQ LS WF FL SEC						X				
c-2	c-2	Develop plans, in conjunction with fire jurisdictions, for evacuation or sheltering in place of school children during periods of high fire danger, thereby recognizing that overloading of streets near schools by parents attempting to pick up their children during these periods can restrict access by fire personnel and equipment.	EQ LS WF FL SEC							X			
c-3	c-3	Offer the 20-hour basic CERT training to teachers and after-school personnel.	EQ LS WF FL SEC							X			
c-4	c-4	Offer the 20-hour basic Student Emergency Response Training (SERT, rather than CERT) training to middle school and/or high school students as a part of the basic science or civics curriculum, as an after school club, or as a way to earn public service hours.	EQ LS WF FL SEC							X			
c-5	c-5	Offer the 20-hour basic CERT training course through the Adult School system and/or through the Community College system (either using instructors with teaching credentials or by making facilities available for classes not run by school personnel themselves).	EQ LS WF FL SEC							X			

## Education Mitigation Strategies

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c-6	c-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.	EQ LS WF FL SEC								X		
c-7	new	Develop a continuity of operations and disaster recovery plan using models such as that developed by the University of California Berkeley. (The American Red Cross has a role in promoting this activity, as well, in schools that they plan to use as shelters.)	EQ LS WF FL SEC								X		
<b>EDUC - d- Actions Related to Schools as Conduits for Information to Families About Emergencies</b>													
d-1	c-1	Utilize the unique ability of schools 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, particularly if coordinated with cities, counties, the American Red Cross and others.	EQ LS WF FL SEC									Police Dept.	Printing costs of Manuals
d-2	c-7	Develop and distribute culturally appropriate materials related to disaster mitigation and preparedness, such as those on the <a href="http://www.prepatenow.org">http://www.prepatenow.org</a> website.	EQ LS WF FL SEC						X				

## Environment Mitigation Strategies

2009-2010 Strategy Number		2005 Original Strategy Number		Specific Mitigation Strategy	Applicable Hazards	Priority (CHECK ONLY ONE)								Responsible Agency or Department (Required if Existing Program, Existing Program under funded, Very High, High, or Under Study)	Orphanance or Resurrection # (if existing program), Estimated Cost and Possible Funding Agency (if high priority), Estimated Date of Completion (if study), <small>UNAV if not complete</small>				
a-1	a-2	a-1	a-2			Existing Program	Existing Program, underfunded	Very High	Unofficial Program - Becomes Official	on Plan Adoption, no funding needed	High - Actively Looking for Funding	Moderate	Under Study			Not Applicable, or Not Appropriate, or Not Cost Effective	Not Yet Considered		
a-1	a-1	ENVI - a - Environmental Sustainability and Pollution Reduction	a-1	Continue to enforce State-mandated requirements, such as the <i>California Environmental Quality Act</i> , to ensure that mitigation activities for hazards, such as seismic retrofits and vegetation clearance programs for fire threat, are conducted in a way that reduces environmental degradation such as air quality impacts, noise during construction, and loss of sensitive habitats and species, while respecting the community value of historic preservation.	EQ LS WF FL DR SEC	X													
a-2	a-2		a-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.	EQ WF FL SEC									X					
a-3	a-3		a-3	Continue to enforce and/or comply with State-mandated requirements, such as the <i>California Environmental Quality Act</i> 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.	LS WF FL DR SEC	X													Community Development
a-4	a-4		a-4	Develop and implement a comprehensive program for watershed management optimizing ecosystem health with water yield to balance water supply, flooding, fire, and erosion concerns.	LS WF FL DR SEC									X					
a-5	a-5		a-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, mitigates wildfires and maintains the viability of living rivers.	LS WF FL DR									X					
a-6	a-8		a-8	Comply with applicable performance standards of any <i>National Pollutant Discharge Elimination System</i> municipal stormwater permit that seeks to manage increases in stormwater run-off flows from new development and redevelopment construction projects.	FL	X													Public Works

**Environment Mitigation Strategies**

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a-7	a-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.	LS FL	X										Public Works	
a-8	a-10	Explore ways to require that hazardous materials stored in the flood zone be elevated or otherwise protected from flood waters.	FL							X				Community Development	To discuss with Public Works and Fire District as a condition of Use Permits
a-9	a-11	Enforce and/or comply with the hazardous materials requirements of the State of California Certified Unified Program Agency (CUPA).	EQ LS WF FL SEC								X				
a-10	a-12	Provide information on hazardous waste disposal and/or drop off locations.	EQ LS WF FL SEC	X										Public Works	
a-11	new	When remodeling existing government and infrastructure buildings and facilities, remove asbestos to speed up clean up of buildings so that they can be reoccupied more quickly.	EQ LS WF FL SEC									X			
a-12	a-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). This program could include vegetation removal, thinning, or replacement in hazard areas where there is a direct threat to structures.	WF FL	X										Public Works	Watershed Council
a-13	a-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 conform with the Regional Water Quality Control Board's Best Management Practices.	FL	X										Public Works	
ENV - b-1	ENV - b-1	<b>Climate Change</b> Stay informed of scientific information compiled by regional and state sources on the subject of rising sea levels and global warming, especially on additional actions that local governments can take to mitigate this hazard including special design and engineering of government-owned facilities in low-lying areas, such as wastewater treatment plants, ports, and airports.	LS WF FL DR												
b-2	new	Inventory global warming emissions in your own local government's operations and in the community, set reduction targets and create an action plan.	LS WF FL DR	X										Public Works	

## Environment Mitigation Strategies

2009-2010 Strategy Number	2005 Original Strategy Number	Specific Mitigation Strategy	Applicable Hazards	Existing Program	Existing Program, underfunded	Very High Priority, unofficial Program-Becomes Official, no funding needed	High - Actively Looking for Funding	Moderate	Under Study	Not Applicable, or Not Appropriate, or Not Cost Effective	Not Yet Considered	Responsible Agency or Department (Required if Existing Program under funded, Very High, High, or Under Study)	Orphaned or Resurrection # (if existing program), Estimated Cost and Possible Funding Agency (if high priority), Estimated Date of Completion (if study), <a href="mailto:WMAV.if@aol.com">WMAV.if@aol.com</a>
q-2009-2010	q-2005	Adopt and enforce land-use policies that reduce sprawl, preserve open space, and create compact, walkable urban communities.	LS WF FL DR								X		
b-4	new	Promote transportation options such as bicycle trails, commute trip reduction programs, incentives for car pooling and public transit.	LS WF FL DR	X								Public Works	
b-5	new	Increase the use of clean, alternative energy by, for example, investing in "green tags", advocating for the development of renewable energy resources, recovering landfill methane for energy production, and supporting the use of waste to energy technology.	LS WF FL DR								X		
b-6	new	Make energy efficiency a priority through building code improvements, retrofitting city facilities with energy efficient lighting and urging employees to conserve energy and save money.	LS WF FL DR								X		
b-7	new	Purchase only Energy Star equipment and appliances for local government use.	LS WF FL DR								X		
b-8	new	Practice and promote sustainable building practices using the U.S. Green Building Council's LEED program or a similar system.	LS WF FL DR	X								Public Works	
b-9	new	Increase the average fuel efficiency of municipal fleet vehicles; reduce the number of vehicles; launch an employee education program including anti-idling messages; convert diesel vehicles to bio-diesel.	LS WF FL DR								X		
b-10	new	Evaluate opportunities to increase pump efficiency in water and wastewater systems; recover wastewater treatment methane for energy production.	LS WF FL DR								X		
b-11	new	Increase recycling rates in local government operations and in the community.	LS WF FL DR									Public Works	
b-12	new	Maintain healthy urban forests; promote tree planting to increase shading and to absorb CO2.	LS WF FL DR	X								Public Works	
b-13	new	Help educate the public, schools, other jurisdictions, professional associations, business and industry about reducing global warming pollution.	LS WF FL DR								X		
ENVI - c - Agricultural and Aquaculture Resilience													



Environment Mitigation Strategies

2009-2010 Strategy Number	2005 Original Strategy Number	Specific Mitigation Strategy	Applicable Hazards	Existing Program	Existing Program, underfunded	Very High - Unofficial Program - Becomes Official on Plan Adoption, no funding needed	High - Actively Looking for Funding	Moderate	Under Study	Not Applicable, or Not Appropriate, or Not Cost Effective	Not Yet Considered	Responsible Agency or Department (Required if Existing Program, Existing Program under funded, Very High, High, or Under Study)	Grantance or Resourton # (if existing program), Estimated Cost and Possible Funding Agency (if high priority), Estimated Date of Completion (if study), <a href="mailto:WMAV.if@aol.com">WMAV.if@aol.com</a>
c-1	b-1	Maintain a variety of crops in rural areas of the region to increase agricultural diversity and crop resiliency. RESPONSIBLE AGENCIES: County Offices of the Agricultural Commissioner.	Ag DR SEC	Existing Program						X			
c-2	b-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. RESPONSIBLE AGENCIES: County Offices of the Agricultural Commissioner.	Ag DR SEC							X			
c-3	b-4	Encourage livestock operators to develop an early-warning system to detect animals with communicable diseases (due to natural causes or bioterrorism). RESPONSIBLE AGENCIES: County Health Department and Office of the County Agricultural Commissioner.	Ag Flu SEC							X			
deleted	b-3	(deleted since not a disaster-related strategy)											

Land Use Mitigation Strategies

2009-2010 Strategy Number		Specific Mitigation Strategy	Applicable Hazards	Priority (CHECK ONLY ONE)								Responsible Agency or Department (Required if Existing Program, Existing Program under funded, 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), WHY if not same as regional priority, OR Other Comments
2009-2010 Strategy Number	2005 Original Strategy Number			Existing Program	Existing Program, underfunded	Program-Becomes Official on Plan Adoption, no funding needed	High - Actively Looking for Funding	Moderate	Under Study	Not Applicable, Not Appropriate, or Not Cost Effective	Not Yet Considered		
a-1	a-1	<b>LAND - a - Earthquake Hazard Studies for New Private Developments</b> 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.)	EQ	X								Community Development	
a-2	a-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.	EQ	X								Community Development	
a-3	a-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.	EQ	X								Community Development	
a-4	new	Ensure that development proposed near faults with a history of complex surface rupture (multiple traces, warping, thrusting, etc.) has larger setbacks than the minimum fifty feet.	EQ						X				
a-5	new	Consider imposing requirements similar to the Alquist-Priolo Earthquake Fault Zoning Act for structures without human occupancy if these buildings are still essential for the economic recovery of the community or region.	EQ						X				
a-6	a-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.	EQ	X								Community Development	
a-7	a-5	Support and/or facilitate efforts by the California Geological Survey to complete the earthquake-induced landslide and liquefaction mapping for the Bay Area.	EQ	X								Community Development	

**Land Use Mitigation Strategies**

2009-2010 Strategy Number	2005 Original Strategy Number	Specific Mitigation Strategy	Applicable Hazards	Existing Program	Existing Program, Underfunded	Program-Becomes Official on Plan Adoption, no funding needed	High - Actively Looking for Funding	Moderate	Under Study	Not Applicable, Not Effective	Not Yet Considered	Responsible Agency or Department (Required if Existing Program, Existing Program under funded, 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), WHY if not same as regional priority, OR Other Comments
a-8	a-6	Require that local government reviews of geologic and engineering studies are conducted by appropriately trained and credentialed personnel.	EQ	X								Community Development	The City has been mapped.
b-1	b-1	<b>LAND - b - Wildland and Structural Fires</b> Review new development proposals to ensure that they incorporate required and appropriate fire-mitigation measures, including adequate provisions for occupant evacuation and access by emergency response personnel and equipment.	WF	X								Community Development	Ongoing by the Fire District.
b-2	b-2	Develop a clear legislative and regulatory framework at both the state and local levels to manage the wildland-urban-interface consistent with <i>Fire Wise</i> and sustainable community principles.	WF						X				
c-1	c-1	<b>LAND - c - Flooding</b> 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.	FL	X								Community Development	
c-2	c-2	Incorporate FEMA guidelines and suggested activities into local government plans and procedures for managing flood hazards.	FL	X								Community Development	
c-3	c-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).	FL	X								Community Development	
c-4	c-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 <i>National Flood Insurance Program</i> .	FL	X								Community Development	
c-5	new	Encourage new development near floodways to incorporate a buffer zone or setback from that floodway to allow for changes in stormwater flows in the watershed over time.	FL								X		
c-6	new	For purposes of creating an improved hazard mitigation plan for the region as a whole, ABAG, and Bay Area cities and counties, jointly request geographically defined repetitive flooding loss data from FEMA for their own jurisdictions.	FL								X		

**Land Use Mitigation Strategies**

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d-1	d-1	<p><b>LAND - d - Landslides and Erosion</b>                      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.</p>	LS	X								Community Development			
			LS	X									Community Development		
			LS	X										Community Development	
			LS	X										Community Development	
			LS	X								X		Community Development	
d-5	d-5	<p>Establish requirements in zoning ordinances to address hillside development constraints, especially in areas of existing landslides.</p>	LS												
			WF								X				
e-1	e-1	<p><b>LAND - e - Hillside - Multi-Hazard</b>                      For new development, require a buffer zone between residential properties and landslide or wildfire hazard areas.</p>	LS												
			WF								X				
e-2	e-2	<p>Discourage, add additional mitigation strategies, or prevent new construction or major remodels on slopes greater than a set percentage, such as 15%, due to landslide or wildfire hazard concerns.</p>	LS												
			WF								X				
f-1	f-1	<p><b>LAND - f - Smart Growth to Revitalize Urban Areas and Promote Sustainability</b>                      Prioritize retrofit of infrastructure that serves urban areas (or urban services areas) over constructing new infrastructure to serve outlying areas.</p>	EQ												
			LS								X				
f-2	f-2	<p>Work to retrofit homes in older urban neighborhoods to provide safe housing close to job centers.</p>	EQ												
			LS								X				

### Land Use Mitigation Strategies

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f-3	f-3	Work to retrofit older downtown areas and redevelopment districts to protect architectural diversity and promote disaster-resistance.	EQ LS WF FL SEC								X		
f-4	f-4	Work with non-profits and through other mechanisms to protect as open space those areas susceptible to extreme hazards (such as through land acquisition, zoning, and designation as priority conservation areas).	EQ LS WF FL SEC								X		
f-5	f-5	Strive to provide and preserve existing buffers between development and existing users of large amounts of hazardous materials, such as major industry, due to the potential for catastrophic releases or fires due to an earthquake, accident, or terrorism. (Flooding might also result in release or spread of these materials; however, it is unlikely.) In areas where buffers do not exist or cannot be created, provide alternative mitigation.	EQ LS WF FL SEC								X		
LAND - g - Hazard Abatement Districts													
g-1 new		Use hazard abatement districts as a funding mechanism to ensure that mitigation strategies are implemented and enforced over time.	EQ LS WF FL								X		