



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

City of Burlingame



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Introduction

The City of Burlingame is a moderately-sized city in San Mateo County, California comprised of approximately 2,970 urban acres. The City has a population of approximately 28,601 people. Located on the San Francisco Bay peninsula, the city has experienced its share of disasters including the Loma Prieta earthquake in 1989. Last year, the City's budget was \$86,759,558. The City employs 196 people. City services include police, fire, water and sewer. The fire services are supplied by a separate fire district. A map of the City's jurisdictional boundary is provided in Exhibit A.

Major government facilities include one main library, one neighborhood library, City Hall, a water treatment plant, two fire stations, a police station, a major Parks and Recreation center, sixteen City parks, and the Burlingame Corporation Facility.

The Regional Planning Process

In 2005 the City of Burlingame participated in ABAG workshops which resulted in the development of the Regional Plan. The Plan was formally adopted by the Burlingame City Council in October 2006. Representatives from the City of Burlingame participated in a variety of ABAG workshops, conferences, and meetings, including:

- A Sewer Smart summit meeting held on October 9, 2008
- County/City Workshops on 5/12/09, 5/26/09, and 6/4/09
- A regional meeting during which Building Officials reviewed draft priorities and attempted to reach consensus on priorities for mitigation on 7/1/09
- A City meeting to discuss floodplain management issues on 11/5/09

For more information on these meetings and for rosters of attendees, please see Appendix A and H in the ABAG Multi-Jurisdictional Local Hazard Mitigation Plan 2010 (MJ-LHMP). In addition, the City of Burlingame has provided written and oral comments on the multi-jurisdictional plan and provided information on facilities that are defined as "critical" to ABAG.

The Local Planning Process

Representatives from multiple City departments met on a regular basis to identify and prioritize appropriate mitigation strategies. Personnel involved in these meetings included senior and mid-management staff from the Finance Department, Planning Division, Building Division, Engineering Division, Fire Department, and Emergency Services personnel.



At the first meeting, general priorities and appropriate departments were identified. Representatives from City departments were chosen based on their knowledge of City infrastructure and their ability to make key decisions regarding that infrastructure. Each department representative brought the perspectives of their individual departments along with infrastructure and budget priorities. Subsequent meetings identified mitigation strategies, prioritized said strategies, and reviewed preliminary budgets and potential funding sources for strategies designated as “High” priority for City-owned-and-operated facilities.

No formal meeting agendas, minutes, or sign-in sheet were prepared during this part of the process. City staff met in a collaborative approach to identify and review the various elements of the process.

Process for Updating Plan Sections

City staff began the update process by reviewing the 2005 Plan. Staff then researched City records in order to provide new information on hazards and susceptibility within the City. The updates include new data regarding recent occurrences of natural hazards as well as updated information on risk assessment with new data provided by ABAG.

Incorporating Other Plans into the Annex

Existing plans, studies, reports, and technical information	Method of incorporation into the City of Burlingame annex
General Plan, Health and Safety Element	Hazards Assessment Mitigation Strategies
Capital Improvement Plan	Mitigation Strategies
Flood Plain Improvement Plan	Hazards Assessment Mitigation Strategies
Emergency Response Plan	Hazards Assessment Mitigation Strategies

Public Meetings

August 28, 2009 – Invitation for Public Input posted on the City of Burlingame website
 September 14, 2009 – Public meeting of the Planning Commission

Opportunity for public comments on the DRAFT mitigation strategies was provided at a public meeting of the Planning Commission at Burlingame City Hall and advertised on the City of Burlingame website. The Planning Commission meeting was cited in an article of the San Mateo



County Times on September 8, 2009. The draft mitigation strategies were also published on the City of Burlingame website for public viewing. No public comments were received from either the meeting or the internet posting. Copies of the internet posting, as well as other information relative to the public meetings, are included as **Exhibit A** to the City of Burlingame 2010 Annex.

Public meetings and outreach, via our website, were instrumental in seeking comment regarding the 2010 Plan. Future updates of the plan could include coordination with neighboring cities in a public outreach effort. This may also allow all cities to make the process more interesting and therefore elicit greater public comment.

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

Hazards Assessment

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

The City of Burlingame has reviewed the hazards identified and ranked the hazards based on past disasters and expected future impacts. The Public Works Director, Assistant Public Works Director, Chief Building Official, and Fire Marshal concluded that earthquakes (particularly shaking), flooding (including dam failure), wildfire, and landslides (including unstable earth) pose a significant risk for potential loss.

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

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



Past Occurrences of Disasters (natural and human-induced)

The City of Burlingame has experienced a number of different disasters over the last 50 years, including earthquakes, floods, droughts, wildfires, energy shortages, landslides, and severe storms. The Loma Prieta Earthquake of 1989 is an example of the kind of large scale disaster which can strike the Bay Area. It killed 63 persons, injured 3,757, and displaced over 12,000 persons. With over 20,000 homes and businesses damaged and over 1,100 destroyed, this quake caused approximately \$6 Billion in damage.

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

In addition to the declared disasters noted in Appendix D, significant incidents in San Mateo County that impacted the City of Burlingame and prompted the opening of our Emergency Operations Center in the last several years include:

1. 10/17/1989: Loma Preita Earthquake
2. 10/28-29/1990: Presidential Visit – George H. Bush
3. 09/11/2001: Terrorist attack World Trade Center resulting in the closure of San Francisco Airport. Coordination of road closure in and out of the airport property with neighboring Law Enforcement and assist with relocation of “stranded” passenger who were driven to the hotels in Burlingame
4. 11/07-8/2002: Winter storms
5. 12/16/2002: Winter storm
6. 06/07/2003: Presidential visit – George W. Bush
7. 01/01/2004: Winter Storm
8. 12/30-31/2005: Winter Storms
9. 02/27/2006: Winter Storms
10. 01/04/2008: Winter Storms
11. 01/30/2008: Presidential visit – George W. Bush
12. 09/09/2010: San Bruno Fire/Explosion (we didn’t open Burlingame’s EOC, however, numerous Burlingame staff worked at the event for a week afterwards in various capacities – EOC Overhead Team members, Incident Command Post overhead team members, Staffing the Local Assistance Center (LAC) at the Burlingame Recreation Center, Building Inspectors, etc.

These events caused disruption of electrical service, impacted traffic flow, caused road closures, resulted in minor landslides, caused some local flooding, and / or necessitated the allocation of staff to other jurisdictions as well as a reduction in available staff due to local emergency response.



Risk Assessment

Urban Land Exposure

The City of Burlingame examined the hazard exposure of the City of Burlingame urban land based on information in ABAG's website at

<http://quake.abag.ca.gov/mitigation/pickdbh2.html>

The "2005 Existing Land Use with 2009 Mapping" file was used for this evaluation (in the existing plan, the file used was "Existing Land Use in 2000").

In general, the hazard exposure of the City of Burlingame is not increasing over time. The city has few tall buildings and strong construction activity translates into greater compliance with newer building codes and therefore, infrastructure and buildings that are safer. The City of Burlingame actually reduced the acres of urban land in the 100 year flood zone over the last 5 years due to changes in the new FEMA flood maps. The following table describes the exposure of urban land within the City to the various hazards.

Exposure (acres of urban land)			
Hazard	Plan Year 2005	Plan Year 2010	Change
<i>Total Acres of Urban Land</i>	2,970	2,840	(130)
Earthquake Faulting (within CGS zone)	0	0	0
Earthquake Shaking (within highest two shaking categories)	2,706	2,699	(7)
Earthquake-Induced Landslides (within CGS study zone)	0	0	0
Liquefaction (within moderate, high, or very high liquefaction susceptibility)	1,213	1,310	97
Flooding (within 100 year floodplain)	1,548	1,574	26
Flooding (within 500 year floodplain)	211	204	(7)
Landslides (within areas of existing landslides)	719	719	0
Wildfire (subject to high, very high, or extreme wildfire threat)	9	4	(5)
Wildland Urban Interface Fire Threat	1,063	1,051	(12)
Dam Inundation (within inundation zone)	324	324	0
Sea Level Rise		-	
Tsunamis (within inundation area)		-	
Drought	-	-	-



Infrastructure Exposure

The City of Burlingame also examined the hazard exposure of infrastructure within the jurisdiction based on the information on ABAG's website at <http://quake.abag.ca.gov/mitigation/pickdbh2.html>. Of the 2,840 miles of roadway in the City of Burlingame the following are exposed to the various hazards analyzed.

Exposure (miles of infrastructure)						
Hazard	Roadway		Transit		Rail	
	Plan Year 2005	Plan Year 2010	Plan Year 2005	Plan Year 2010	Plan Year 2005	Plan Year 2010
<i>Total Miles of Infrastructure</i>	91	96	0	3	3	3
Earthquake Shaking (within highest two shaking categories)	89	91	0	3	3	3
Liquefaction Susceptibility (within moderate, high, or very high liquefaction susceptibility)	36	44	0	2	0	3
Liquefaction Hazard (within CGS study zone)	0	0	0	0	0	0
Earthquake-Induced Landslides (within CGS study zone)	0	0	0	0	0	0
Earthquake Faulting (within CGS zone)	0	0	0	0	0	0
Flooding (within 100 year floodplain)	54	53	0	3	3	3
Flooding (within 500 year floodplain)	3	4	0	0	0	0
Landslides (within areas of existing landslides)	22	23	0	0	0	0
Wildfires (subject to high, very high, or extreme wildfire threat)	0	0	0	0	0	0
Wildland-Urban Interface Fire Threat	33	35	0	0	0	0
Dam Inundation (within inundation zone)	10	11	0	0	0	0
Sea Level Rise	-					
Tsunamis	-					
Drought	-					



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

Finally, the City of Burlingame examined the hazard exposure of critical health care facilities and schools located within the City of Burlingame, and City-owned buildings based on the information on ABAG’s website at <http://quake.abag.ca.gov/mitigation/pickcrit2010.html>. The City of Burlingame provided a list of the critical facilities it owns to ABAG. ABAG provided a detailed assessment of the hazard exposure of each of its facilities. The following number of facilities is exposed to the various hazards analyzed.

Exposure (number of facility types)								
Hazard	Hospitals		Schools		Locally owned critical facilities		Locally owned bridges and interchanges	
	Plan Year 2005	Plan Year 2010	Plan Year 2005	Plan Year 2010	Plan Year 2005	Plan Year 2010	Plan Year 2005	Plan Year 2010
<i>Total Number of Facilities</i>	2	2	11	13	69	128	10	5
Earthquake Shaking (within highest two shaking categories)	2	2	11	13	69	110	10	5
Liquefaction Susceptibility (within moderate, high, or very high liquefaction susceptibility)	0	2	3	3	38	99	3	2
Liquefaction Hazard (within CGS study zone)	0	0	0	0	0	0	0	0
Earthquake-Induced Landslides (within CGS study zone)	0	2	0	13	0	128	0	5
Earthquake Faulting (within CGS zone)	0	0	0	0	0	0	0	0
Flooding (within 100 year floodplain)	2	2	8	6	25	81	6	3
Flooding (within 500 year floodplain)	1	0	0	1	10	10	2	1
Landslides (within areas of existing landslides)	2	2	11	13	69	128	6	5
Wildfires (subject to high, very high, or extreme wildfire threat)	2	0	11	0	69	0	6	0
Wildland-Urban Interface Fire Threat	0	0	7	7	20	20	3	2
Dam Inundation	0	0	0	0	4	4	1	1
Sea Level Rise (exposed to 16in sea level rise)	2	0	11	1	69	11	6	1



Sea Level Rise (exposed to 55in sea level rise)	-	0	-	0	-	23	-	1
Tsunami (within inundation area)	2	0	11	0	69	14	6	0
Drought	-	-	-	-	-	-	-	-

Repetitive Loss Properties

There are two repetitive loss properties in the City of Burlingame based on the information at <http://quake.abag.ca.gov/mitigation/pickflood.html>. In 2004 the City of Burlingame had no repetitive loss property that was outside the flood plain.

The two repetitive loss properties were located at:

1669 Old Bayshore Highway, Burlingame, California, 94010

1625 /1635 Adrian Road, Burlingame, California, 94010

The NFIP Repetitive Loss update worksheets as well as the Repetitive Flood Loss Data sheet are included as Exhibit D in this Annex.

Other risks

The City of Burlingame is unable to identify any risks or vulnerabilities that differ from the rest of the nine-county planning area.

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

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

National Flood Insurance Program

The City of Burlingame has participated in the National Flood Insurance Program since 1981. The City is a participant with the FEMA office in Oakland, California. The City has updated the Municipal Regional Stormwater Plan and is currently working on CRS program certification. The City is a CRS member and is currently classified as 10. In addition to using FEMA maps City staff uses the City permit-tracking software to track properties located within the floodplain.



City staff also uses information provided by project surveyors, geotechnical engineers, and architects as well as site inspections to assess the flood risk on parcels within the City. There are no known issues with community participation in the program. There are no known obstacles for effective implementation of the NFIP. The City is working with FEMA to update the CRS classification. The City may be able to remove some parcels from the flood zone when work currently in progress under the stormwater improvement plan is completed. Actions taken under the NFIP (c-2 and c-4) include the process of adopting the FEMA elevation certification process as part of the City plan review process.

Mitigation Goals and Objectives

The goal of the ABAG Multi-jurisdictional 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 Burlingame in designing its mitigation program.

In addition, the City has the specific objective of reducing the number of public and private buildings within the City that are vulnerable to the effects of earthquakes and to increase the number of public/private buildings protected from flooding, wildfire, etc.

Mitigation Activities and Priorities

Evaluation of Progress from 2005 Plan

In 2005, mitigation actions and priorities were identified although in the 2005 Plan projects were not identified as clearly as they are in this plan. The attached list indicates each of the strategies identified, along with the responsible party, action taken, and the current status of progress. The following projects were completed by the Public Works Department, Fire Department, Building Division, and Planning Division:

- Adopted new Building and Fire Codes. On October 18, 2010 the Burlingame City Council adopted the latest editions of the 2010 California Building and Fire Codes. The City will begin enforcing these codes on January 1, 2011. (HSG f-1; INFR b-8; HSG e-3; ECON d-2)
- The City of Burlingame currently participates in CERT training. (HSG k-7; INFR g-6)
- The citizens of the City of Burlingame passed a Storm Drain Measure which created dedicated funding for upgrades to the City sewer system. (INFR a-7)
- Completed seismic upgrade of the Mills water tank (INFR a-7; INFR b-5)
- Seismic evaluation of the auditorium at the Parks and Recreation Center (INFR a-7; GOVT a-9)



- Upgraded the Trousdale pump station (ENV a-6)
- Updated the existing floodplain maps (ECON f-6)
- Updated the wastewater collection system as described in the Master Plan (ENV a-6)
- Videotaped 25 miles of City sewer mains to identify structural defects (INFR a-4)
- Constructed a Stormwater / Rainwater garden at one of the City's main parking lots to filter pollutants prior to entering the eco system (ENV a-7)
- Adopted the 2010 California Green Building Code with local amendments (ENV b-8)
- Hired a Green Building Specialist to implement the new Green Building Code (ENV b-8)

Future Mitigation Actions and Priorities

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

These draft priorities were submitted to the City of Burlingame City Council 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. The following projects are anticipated to be performed by the Public Works Department:

- Construction has begun on a new 1,500,000 gallon retention basin at the sewage treatment plant; completion scheduled for August 2011 (INFR a-4)
- Upgraded the Mitten pump station (INFR a-4)
- The City continues to participate in planning for the new freeway interchange at Broadway (INFR b-1)
- Worked with the San Francisco Public Utilities Commission in planning for the seismic upgrade of the Hetch Hetchy water line through the City of Burlingame (INFR a-19; INFR b-5)
- Evaluation continues on the Hillview reservoir to allow for increase in capacity that will allow the procurement of adequate storage for emergencies (INFR a-4)
- Project to reconstruct old water and sewer lines on Burlingame Avenue; part of the annual pipeline replacement project (INFR a-19)



During the discussion and implementation of future plans City departments can nominate projects that they believe will provide the greatest benefit when considering available funding. The City intends on using this same approach in the review, preparation, and implementation of future Plans.

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 County's priority to find additional funding to sustain these on-going programs over time.

- Inform residents of comprehensive mitigation activities (HSG-k-3);
- Use disaster anniversaries to remind the public of mitigation activities (HSG-k-5);
- Train homeowners to shut off gas valves (HSG-k-10);
- Vulnerability assessments of City facilities and infrastructure (GOVT-a-1);
- Non-structural mitigation for building contents (GOVT-a-4);
- Development of interoperable communications for first responders from cities, counties, special districts, state, and federal agencies. (GOVT-c-7);
- Participation in general mutual-aid agreements and agreements with adjoining jurisdictions for cooperative response to fires, floods, earthquakes, and other disasters (GOVT-c-13);
- Participation in FEMA's National Flood Insurance Program (GOVT-d-5)
- Sponsor the formation and training of Community Emergency Response Teams (CERT) through partnerships with local businesses (GOVT-c-3, ECON-j-5, HWNG-k-6);
- Incorporate FEMA guidelines and suggested activities into local government plans and procedures for managing flood hazards (LAND-c-2);
- Increase efforts to reduce landslides and erosion in existing and future development through continuing education of design professionals on mitigation strategies (HSNG-i-2, ECON-g-2);
- 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 (INFR-d-6, INFR-d-7)
- Continue the Wildland Urban Interface mitigation and education program that is an on-going program. (HSNG-g-1)

| Incorporation into Existing Planning Mechanisms

The City has several planning mechanisms which include:



- ◆ General plan safety element
- ◆ Capital Improvements Plan
- ◆ City of Burlingame Climate Action Plan

<http://www.burlingame.org/index.aspx?page=1374>

The City has a Safety Element in its General Plan that includes a discussion of fire, earthquake, flooding, and landslide hazards. 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.

The research accomplished and information provided in this annex will be used to assess the purchase of new equipment, train staff, upgrade infrastructure, and review the City's CIP in order to reduce property damage and create a more disaster-resistant region.

Plan Update Process

As required by the Disaster Mitigation Act of 2000, the City of Burlingame 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 of Burlingame 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 Department of Public Works 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. Once a year City staff will review the Plan with a vision toward future improvements of City infrastructure, potential revenue sources, and improvements in the Plan. 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.

Mitigation Plan Point of Contact

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Title: Chief Building Official

Mailing Address: 501 Primrose Road, Burlingame, CA 94010

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Alternate Point of Contact

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Exhibit A - Jurisdiction Boundary Map



Exhibit B - Public Meeting Announcements



Exhibit C - City of Burlingame Regional Mitigation Strategies



Exhibit D - Repetitive Loss Properties in the City of Burlingame