

2012 Local Hazard Mitigation Plan Annex

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Introduction

- The City of San Bruno, incorporated on December 23, 1914, is located on the San Francisco Peninsula 12 miles south of San Francisco, 14 miles north of Redwood City, the San Mateo County seat, and immediately adjacent to the San Francisco International Airport. The total land area of San Bruno is 6.4 square miles. The elevation of the city is 16 feet, however, San Bruno is hilly. The population is 41,000 with an operating budget of \$70 million employing 236 personnel.
- The City of San Bruno has experienced its share of disasters, which include the Loma Prieta Earthquake of 1989, the winter storms of 1998, which caused landslides in the areas of Madison and Glenview. In 2010 the gas transmission pipeline explosion and resulting fires resulted in the death of eight residents and destroyed 38 homes.
- Major Government facilities include the San Bruno Park and Recreation Center, the City Hall complex, which contains City Administration and the City Library, two fire stations, a water treatment and corporation yard as well as a joint BART police station. San Bruno is also home to BART, Caltrain, and Samtrans.

The Regional Planning Process

The City of San Bruno participated in the ABAG workshops in 2005, which developed the original regional plan. The San Bruno City Council formally approved that plan in March of 2007. The City of San Bruno recently participated in various ABAG workshops, conferences, and meetings, including:

- Sewer Smart Summit 10-09-2008
- Critical Facilities Data 05-08-2009
- Strategies Workshop 09-29-2009
- City/County Workshops various dates

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 San Bruno 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

- Connie Jackson, City Manager, directed staff to form an internal team to undertake the review of The City of San Bruno's 2012 Local Hazard Mitigation Plan (LHMP) Annex.
- Aaron Aknin, Community Development provided input regarding the changes in the city and future development.
- Klara Fabry, Public Works Director, provided input on city facilities, including buildings, roads, public infrastructure, and other facilities potentially impacted by hazards.
- Dennis Haag, Fire Chief, provided input on fire and emergency response issues, including radio interoperability and the operation of the City's Emergency Operating Center.
- Neil Telford, Police Chief, provided input on police department response procedures for a natural disaster.
- Gary Lapori, Building Official, provided information concerning building and community development issues.

The representatives from the above City of San Bruno departments met on several occasions to identify and prioritize appropriate mitigation strategies.

At the first meeting, general priorities and appropriate departments were identified. 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 sheets 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.

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



Existing plans, studies, reports, and technical information	Method of incorporation into the jurisdiction annex
City of San Bruno General Plan, Health and	Hazards Assessment and priority
Safety Element	mitigation actions
Capital Improvements Plan	Priority mitigation actions and
	programs
City of San Bruno Emergency Response Plan	Priority mitigation actions and
	programs

Process for Updating Plan Sections

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

Public Meetings

The opportunity for public comments on the DRAFT mitigation strategies was provided at a public meeting at The City of San Bruno, September 23, 2009 and advertised on The City of San Bruno website. The draft mitigation strategies were also published on The City of San Bruno website for public viewing. No public comments were received from either the meeting or the Internet posting. A copy of the Internet posting is included as **Exhibit A** to the City of San Bruno 2012 Annex.

Public meetings and outreach, via our website, were attempted to gather comments regarding the 2012 Annex. 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 San Bruno City Council will adopt the plan in a public meeting via an official resolution. This resolution will be sent to FEMA for final approval. The mitigation strategies will become an implementation appendix of the Safety Element of The City of San Bruno General Plan.



Plan for Updating Plan Sections

- Planning Process:
- Risk Assessment: The area was reviewed by LHMP group and new maps were updated along with a high-pressure gas line assessment.
- Mitigation Strategy: Strategies were reviewed by LHMP group and changes or updates were implemented. The community was allowed input at a community meeting and feedback via Web-site.
- Plan Maintenance: City held a community meeting and allowed input via Web page announcement.

Hazards Assessment

The ABAG Multi-Jurisdictional Local Hazard Mitigation Plan (LHMP), 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 San Bruno has reviewed the hazards identified and ranked the hazards based on past disasters and expected future impacts. The conclusion for San Bruno is that an earthquake (particularly shaking) poses the most significant risk for potential loss.

The City of San Bruno does not face any natural disasters not listed in the ABAG multi-jurisdictional plan and a new hazard has been identified by the City of San Bruno since the original development of this plan in 2005. Additional hazard identified by the City of San Bruno: High-Pressure Gas Pipelines.

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



Past Occurrences of Disasters (natural and human-induced)

The City of San Bruno has experienced a number of different disasters over the last 50 years, including the natural gas explosion of 2010, numerous earthquakes, flooding, landslides, and severe storms. The City's resources were taxed along with those of the county as a 30 inch high-pressure gas line exploded and the resulting fire caused significant damage to the Glenview neighborhood which resulted in the death of eight, injuring another 60, and destroying 38 homes.

The Loma Prieta Earthquake of 1989 is another example of the kind of large-scale disaster, that can strike the Peninsula. It killed 63 people, injured 3,757, and displaced over 12,000 people. With over 20,000 homes and businesses damaged and over 1,100 destroyed, this quake caused approximately \$6 billion of damage.

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

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

- Weather, Summer Heat and Winter Cold. During weather extremes San Mateo County OES monitors situation with cities that are affected.
- February 27, 2010 Chile Earthquake/Tsunami. State EOC activated. San Mateo County EOC monitored situation.
- San Bruno Fire/Explosion this disaster was a significant event for the City and particularly the Glenview neighborhood. The explosion and resulting fire caused eight deaths, injured 60, and destroyed 38 homes.

Risk Assessment

Urban Land Exposure

The City of San Bruno examined the hazard exposure of the City of San Bruno 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 San Bruno is status quo. The City of San Bruno's urban land showed a minimal increase in the acres of urban land in the 100 year flood zone over the last 5 years due to changes in the new FEMA flood maps. The following table described the exposure of urban land within the City of San Bruno to the various hazards.

Exposure (acres of urban land)							
Hazard	2005	2010	Change				
Total Acres of Urban Land	3,417	3,469	52				
Earthquake Faulting (within CGS zone)	363	322	(41)				
Earthquake Shaking (within highest two shaking categories) ¹	3,536	3,559	(23)				
Earthquake-Induced Landslides (within CGS study zone)	0	0	0				
Liquefaction (within moderate, high, or very high liquefaction susceptibility	133	126	(7)				
Flooding (within 100 year floodplain)	0	2	2				
Flooding (within 500 year floodplain)	1	2	1				
Landslides (within areas of existing landslides)	1,720	1,723	3				
Wildfire (subject to high, very high, or extreme wildfire threat) ²	83	59	(24)				
Wildland-Urban Interface Fire Threat	2,340	2,281	(59)				
Dam Inundation (within inundation zone)	0	0	0				
Tsunamis ³ (within inundation area) not applicable							
Drought ⁴	-	_					

Infrastructure Exposure

The City of San Bruno also examined the hazard exposure of infrastructure within the jurisdiction based on the information on ABAG's website at

¹ In large part because the San Andreas fault systems run through the County.

² The decrease is due to better and more accurate mapping.

³ Tsunami evacuation planning maps were not available inside the San Francisco Bay in 2005. This map became available in December 2009. Acres of exposed land are not an appropriate analysis for this hazard. It should be noted that this map is not a hazard map and should be used for evacuation planning purposes only. The inundation line represents the highest inundation at any particular location from a suite of tsunami sources. It is not representative of any single tsunami.

⁴ The entire City of Millbrae has limited drought potential.



<u>http://quake.abag.ca.gov/mitigation/pickdbh2.html</u>. Of the 1040 miles of roadway in the City of San Bruno the following is exposed to the various hazards analyzed.

Exposure (miles of infrastructure)							
Hazard	Road	dway	Transit		Rail		
пагаги	2005	2010	2005	2010	2005	2010	
Total Miles of Infrastructure	1042	1040			1	2	
Earthquake Shaking (within highest	1042	1040			1	2	
two shaking categories)							
Liquefaction Susceptibility (within	33	25			1	2	
moderate, high, or very high							
liquefaction susceptibility							
Liquefaction Hazard (within CGS	0	0			0	0	
study zone) ⁵							
Earthquake-Induced Landslides	0	0			0	0	
(within CGS study zone) ¹							
Earthquake Faulting (within CGS	152	136			0	0	
zone)							
Flooding (within 100 year floodplain)	0	1			0	0	
Flooding (within 500 year floodplain)	0	0			0	0	
Landslides (within areas of existing	504	511					
landslides)							
Wildfires (subject to high, very high,	22	28			0	0	
or extreme wildfire threat)							
Wildland-Urban Interface Fire Threat	719	720			1	2	
Dam Inundation (within inundation	0	0			0	0	
zone)							
Tsunamis ⁶			not ap	plicable			
Drought ⁷	not applicable						

⁵ 565 acres not yet evaluated by CGS.

⁶ Tsunami evacuation planning maps were not available inside the San Francisco Bay in 2005. This map became available in December 2009. Miles of exposed infrastructure is not an appropriate analysis for this hazard. It should be noted that this map is not a hazard map and should be used for evacuation planning purposes only. The inundation line represents the highest inundation at any particular location from a suite of tsunami sources. It is not representative of any single tsunami.

⁷ Drought is not a hazard for roadways.



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

Finally, the City of San Bruno examined the hazard exposure of critical health care facilities and schools located within The City of San Bruno and City owned buildings based on the information on ABAG's website at http://quake.abag.ca.gov/mitigation/pickcrit.html. The City of San Bruno 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.

	LAPOS	uic (iic		1 1acill	ty types			
Hazard	Hospitals		Schools		Locally owned bridges and interchanges		Locally owned critical facilities	
	2005	2010	2005	2010	2005	2010	2005	2010
Total Number of Facilities	0	0	16	16	2	2	7	5
Earthquake Shaking (within highest two shaking categories)	0	0	16	16	2	2	7	5
Liquefaction Susceptibility (within moderate, high, or very high liquefaction susceptibility	0	0	9	2			0	0
Liquefaction Hazard (within CGS study zone) ⁸	0	0	0	0	0	0	0	0
Earthquake-Induced Landslides (within CGS study zone) ⁹	0	0	7	7	0	0	0	0
Earthquake Faulting (within CGS zone)	0	0	7	7	0	0	0	0
Flooding (within 100 year floodplain)	0	0	0	0	0	0	0	0

⁸ Four Long-term care critical facilities have not been evaluated by CGS for this hazard



Flooding (within 500 year floodplain)	0	0	0	0	0	0	0	0
Landslides (within areas of existing landslides)	0	0	149	135	0	0	2	2
Wildfires (subject to high, very high, or extreme wildfire threat)	0	0	0	1	0	0	0	0
Wildland-Urban Interface Fire Threat	0	0	249	246	0	0	1	0
Dam Inundation	0	0	0	0	0	0	0	0
Tsunamis ¹⁰ (within inundation area)	-	-	-	-	-	-	-	-
Drought ¹¹	-	-	-	-	-	-	-	-

¹⁰ Tsunami evacuation planning maps were not available inside the San Francisco Bay in 2005. This map became available in December 2009. It should be noted that this map is not a hazard map and should be used for evacuation planning purposes only. The inundation line represents the highest inundation at any particular location from a suite of tsunami sources. It is not representative of any single tsunami.

¹¹ Drought will not affect locally owned facilities directly.

Repetitive Loss Properties

There are no repetitive loss properties in the City of San Bruno based on the information at

http://quake.abag.ca.gov/mitigation/pickflood.html (Information obtained from ABAG is available at

http://quake.abag.ca.gov/mitigation/pickflood.html.)

Other risks

At the present time, there are no known risks or vulnerabilities that differ from the rest of the planning area (9 counties).

The City of San Bruno 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 City of San Bruno.

The City of San Bruno 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

FEMA classifies San Bruno (community ID 060326) as an unmapped area, and property owners are not required by federal regulation to purchase flood insurance.

Mitigation Goals

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

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 responsible party, action taken, and current status of progress. The Public Works Department, the Fire Department as well as the Building and Planning Divisions completed the following projects.

- Adopted new Building and Fire Codes. On January 25, 2011 the San Bruno City Council adopted the latest edition of the 2010 California Building and Fire Codes with local amendments. The city began enforcing these codes on January 1, 2011. (HSG F-1; HSG e-3; ECON d-2)
- In 2010, the Fire Department requested and received from the gas utility more detailed information on transmission line location, pipe size, and pressure of the lines. Also, additional training and public education requests have been made to the utility provider.
- The City of San Bruno currently participates in CERT training. (HSG k-7; INFR g-6)
- In 2009, the City completed a slope stabilization project at Rosewood Drive and Madison Avenue. The cost of the project was \$390,000. The work stabilized the hillside that showed previous signs of earth movement. (INFR e-1).



- In 2010, the City completed a slope stabilization project at Crestmoor Canyon immediately adjacent to the intersection of Earl Avenue and Glenview Drive. The cost of the project was \$247,000. The work stabilized the hillside and improved the erosion control after the PG&E transmission pipeline and explosion. (INFR e-1)
- In 2011, the City completed the Crestmoor Canyon retaining wall reconstruction project. The cost for the construction was \$660,000. Reconstruction of retaining walls supporting certain homes on Glenview and Claremont Drives. (INFR e-1).
- The County of San Mateo has implemented an erosion control program a few years ago, and the City of San Bruno is working with the County on this from a building and public works perspective. This is to try to prevent construction erosion entering into the City storm drain. (INFRA d-5)

Future Mitigation Actions and Priorities

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

These draft priorities were submitted to the City Manager's Office for review. The draft priorities will be provided to the City Council for adoption pending approval of this Local Hazard Mitigation Plan (LHMP) by FEMA.

The City Planning Team also prioritized specific mitigation tasks for the next five years. This list includes implementation process, funding strategy, and approximate time frame.

 Since the utility provider is a proprietary operation and the City has little control of the operation, the City of San Bruno





- is taking an active role in Federal, State, and Local legislative actions to improve regulatory and safety procedures related to gas pipeline operations.
- The City of San Bruno will replace its number three-water tank on Glenview Drive and Ridgeway Avenue, which is in need of significant seismic retrofit. The two million gallon concrete will be completed in 2012 at a cost of 1.25 to 2.0 million. (INFRA a-1)
- The City of San Bruno's pump-station number four on Skyline Boulevard and College Drive will be reconstructed. The reconstruction of the water pump station that serves residents in San Bruno's upper elevations will cost 1.5 to 2 million and is scheduled for completion in 2013. (INFRA a-1)
- The City of San Bruno worked with the San Francisco Public Utilities Commission in planning for the seismic upgrade of the Hetch Hetchy water line through the City of San Bruno. (INFRA a-7; INFRA b-5)
- The City of San Bruno will be installing pressure-regulating stations on four water turnouts with the SFPUC water system. The cost of the project is projected to be 400,000 to 800,000 and be completed in 2013. (INFR b-5)
- The City of San Bruno will look at replacement of other City water tanks or seismically retrofit those tanks. The cost of the project would be four million and is scheduled for completion in 2016. (INFRA a-4)

On-Going Mitigation Strategy Programs

The City of San Bruno 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.

- Vulnerability assessments of critical facilities and infrastructure (GOVT-a-1):
- Non-structural mitigation for building contents (GOVT-a-4);
- Retrofit or replace critical facilities that are shown to be vulnerable to damage in natural disasters (GOVT-a-2);



- Establish a framework and process for pre-event planning for post-event recovery that specifies roles, priorities and responsibilities of various departments within in the local government organization, and that outlines a structure and process for police-making involving elected officials and appointed advisory committees; (GOVT-b-1)
- Prepare a basic Recovery Plan that outlines the major issues and tasks that are likely to be key elements of community recovery, as well as integrate this planning into response planning. (GOVTb-2)
- Development of a plan for short-term and intermediate-term sheltering of impacted residence. (GOVT-b-4);
- Maintain the local government's emergency operations center in a fully functional state of readiness. (GOVT-b-10);
- Maintain and update as necessary the local government's Standardized Emergency Management System Plan. (GOVT-b-12)
- Encourage the cooperation of the utility system providers and cities, counties, and other special districts to develop strong and effective mitigation strategies for infrastructure systems and facilities. (INFR-a-3)
- Work for better cooperation among the patchwork of agencies managing flood control issues. (INFR-b-16)
- Include "areas subject to ground failure" in the list of criteria used to determining a replacement schedule (along with importance, age, type of construction material, size, condition, and maintenance or repair history) for pipelines. (INFR-f-1)
- Provide materials to the public related to coping with reductions in water supply or contamination of the supply. (INFR-g-3)
- Develop printed materials, utilize existing materials (such as developed by FEMA and the American Red Cross), conduct workshops, and/or provide outreach encouraging employees of these critical health care facilities to have family disaster plans and conduct mitigation activities in their own homes (HEAL-a-7);
- Sponsor the formation and training of Community Emergency Response Teams (CERT) through partnerships with local businesses (HSNG-j-6, ECON-j-5);
- Encourage regulatory agencies to work collaboratively with safety professionals to develop creative mitigation strategies that effectively balance environmental and safety needs, particularly



- to meet critical wildfire, flood, and earthquake safety levels. (ENVI-a-2);
- Increase efforts to reduce landslides and erosion in existing and future development through continuing education of design professionals on mitigation strategies (LAND-d-4);

Incorporation into Existing Planning Mechanisms

The City of San Bruno has several planning mechanisms which

- ♦ General Plan safety Element
- ◆ Capital Improvement Plan

The City of San Bruno has a Safety Element in its General Plan that includes a discussion of fire, earthquake, flooding, and landslide hazards. This plan was adopted as an implementation appendix to the Safety Element. In addition, the City of San Bruno enforces the requirements of the California Environmental Quality Act (CEQA), which, since 1988, requires mitigation for identified natural hazards. The City of San Bruno 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 by the Disaster Mitigation Act of 2000, the City of San Bruno 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 San Bruno will ensure that monitoring of this annex will occur. The plan will be monitored on an on-going basis. However, the major disasters affecting the City of San Bruno, 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 of San Bruno 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 of San Bruno's Emergency Coordinator (Fire Chief or Designee) will contact ABAG four years after this plan is approved to ensure that ABAG plans to undertake the plan update process. If so, the City again plans to participate in the multijurisdictional plan. If ABAG is unwilling or unable to act as the lead agency in the multijurisdictional effort, other agencies will be contacted, including the San Mateo 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.



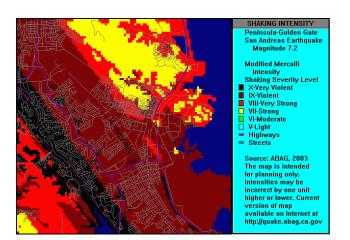
Exhibit A - Public Meeting Announcements

Public Notice

2005 Local Hazard Mitigation Plan

Update

You are invited to a Public Participation Session to provide comments on the update of the multi-jurisdictional 2005 Local Hazard Mitigation Plan for the City of San Bruno.



Wednesday, September 23rd, 2009 6:00 p.m. until 7:00 p.m.





Sister City Conference Room #115

San Bruno City Hall

567 El Camino Real

San Bruno, CA 94066