

**SAN FRANCISCO GENERAL PLAN
COMMUNITY SAFETY ELEMENT**
San Francisco Planning Department

INTRODUCTION

The purpose of the Community Safety Element is to reduce future loss of life, injuries, property loss, environmental damage, and social and economic disruption from natural or technological disasters. There are several assumptions behind this Element:

- Creating a greater public awareness of the hazards and risks that face San Francisco will result in an informed commitment by public agencies, private organizations and individuals to prepare for future disasters.
- Development and implementation of programs to increase safety and economic resilience, mitigate risk, increase preparedness and respond to emergencies are the responsibility of many different agencies. Cooperation among City and County agencies, Bay Area Communities, federal and state agencies, community-based organizations, and the private sector is essential for these programs to be effective.
- New policies and programs must be developed and funding vehicles identified that will minimize risks from natural hazards and expedite the recovery process.
- Existing hazardous structures have the greatest potential for loss of life extended economic interruption and other serious impacts as a result of an earthquake. The City should continue to explore ways to reduce these risks.

The Community Safety Element focuses on seismic hazards, because the greatest risks to life and property in San Francisco result directly from the ground shaking and ground failure associated with large earthquakes. Other hazards common in other California communities are less likely to occur in San Francisco, and when they do occur are most likely to be associated with an earthquake. If San Francisco undertakes programs to reduce the ground failure, inundation, landslides, hazardous materials releases and fire that are quite likely to accompany a major earthquake, and if it has developed effective emergency response and reconstruction plans, it will be well prepared to cope with these hazards, or other catastrophes that threaten public safety, property, or the environment when they occur alone.

However, other hazards, particularly man-made hazards, pose threats to the City's health and welfare, and must be considered here in terms of hazard mitigation, preparedness, response and recovery.

Relationship to Other Plans and Programs

While the portion of the Community Safety Element contained here establishes policies to guide the City's actions in preparation for and response to a major disaster, a more detailed plan is needed to coordinate efforts to implement these actions, and to guide the long-term recovery of the City, its residents, and its economy after a major disaster. Thus the Community Safety Element also incorporates two other components, currently under development, which further direct City agencies in implementation of emergency planning and response initiatives and in post-disaster reconstruction. These components will be adopted as supporting documents when they are complete. The Implementation Program sets forth specific steps towards realizing the goals of the Community Safety Element, by describing current and proposed planning and mitigation projects to carry out its Objectives and Policies, and provides a realistic timeline for implementation. The Recovery and Rebuilding Vision/ Plan is a community-developed document

that makes clear the community's vision for how our City - its physical infrastructure, transportation systems, and neighborhoods - will be rebuilt in the case of a major disaster or catastrophe. While the Community Safety Element establishes policies to guide the longer-term reconstruction of the City, a more detailed plan is needed to coordinate efforts to guide the long-term recovery of the City, its residents, and its economy after a major disaster.

The Community Safety Element, and its related components described above, contains broader policies to reduce impacts, occurring over a longer time frame, that will need to be carried out by the Planning Commission and other City agencies. The City also maintains several policy documents and response plans that provide more immediate direction to specific agencies in the case of disaster. These include:

Emergency Operations Plan

The City maintains an Emergency Operations Plan which was updated in 2005 by the Department of Emergency Management. The Emergency Operations Plan implements many of the emergency response policies of this Community Safety Element.

The Emergency Operations Plan provides for a coordinated response to disaster by describing specific responses to be undertaken by the emergency response agencies, and other supporting City departments. The Emergency Operations Plan is divided into three parts. Part 1 of the EOP provides an overview of the emergency management system at the policy and operations levels, and is intended to educate the City's agencies about emergency operations in San Francisco. Part 2 of the EOP (*under development at the time of drafting*) consists of detailed and restricted information that will be used by Emergency Command Center personnel in response actions; and is intended for internal and authorized emergency management staff. The third part of the EOP (*under development at the time of drafting*) is a set of functional and hazard-specific annexes that provide additional detailed response, resource and recovery information on specific areas of response, such as Care and Shelter, Evacuation and Volunteer Management. Examples of hazard-specific annexes are Earthquake, Oil Spill and National Security Emergency.

Hazard Mitigation Plan

Another related plan is the Hazard Mitigation Plan, required by federal law as a condition of receiving hazard mitigation grants after a declared disaster. The City prepared a Hazard Mitigation Plan after the 1989 Loma Prieta earthquake. It was developed by an inter-departmental team coordinated by the Chief Administrative Officer, and adopted by the Board of Supervisors in 1990. It contained background information similar to the Community Safety Element, and a list of earthquake mitigation projects proposed by City departments. The Hazard Mitigation Plan was updated to include the projects proposed to reduce hazards from high wind and storms, such as occurred during the winter of 1995-1996, which was a declared disaster in San Francisco. That update is expected to cover the declared disasters of the January 1997 storms.

Seismic Hazards Mapping Act

In 1990, the California Legislature enacted the Seismic Hazards Mapping Act (SHMA). As a result, the Department of Conservation, California Geological Survey (CGS) (formerly known as the California Division of Mines and Geology) published a report entitled "Seismic Hazard Zone Report for the City and County of San Francisco, California" in 2000 and the Seismic Hazard Zones map for the City and County of San Francisco in 2001. The Seismic Hazard Zones (SHZ) map is included in this Element, and shows the areas with potential liquefaction and earthquake-induced landslides.

The City must take the information contained in the maps into account when preparing the Community Safety Element, or when adopting or revising land use ordinances. When development projects are proposed within the SHZs, the project sponsor is required to conduct a site investigation and prepare a seismic hazard report assessing the nature and severity of the hazard, and suggesting appropriate geotechnical measures and structural design features. When approving any project in a SHZ, the City will use the information and recommendations included in the report to achieve a reasonable protection of public safety.

Citywide Earthquake Response Plan

The Citywide Earthquake Response Plan, released in draft form in 2006, is designed to support the Emergency Operations Plan (EOP), by providing considerations for a response to a major earthquake in the Bay Area that has a significant effect on the City of San Francisco. While the EOP focuses on preparedness and mitigation, this Response Plan is primarily focused on response and short-term recovery operations. The Response Plan provides direct response strategies for all of the City's agencies in various functions that must be performed in the wake of a major earthquake. Also, for a comprehensive analysis of the potential impact of a range of earthquake magnitudes on the City, and their cumulative effects on our population and built environment, see Appendix A: Hazard Analysis of the Catastrophic Earthquake Response Plan.

Regional Emergency Coordination Plan

The San Francisco Office of Emergency Services is the lead agency to develop a Regional Emergency Coordination Plan (RECP), which is focused on the responsibilities and procedures between California's Coastal Region Office of Emergency Services (OES) and the counties. The plan will enhance coordination in governance, fire response, law enforcement, and industry across municipalities in the region; and will facilitate the flow of mutual aid. The RECP is intended to reflect existing plans and interagency agreements, and to address any gaps or inconsistencies between the existing plans. The RECP entails a Baseline Plan and nine subsidiary elements, including the Transportation Coordination and Recovery Plan (TCRP). The plan is expected to be complete in 2007. The plan is expected to be completed in 2007.

Programs

The City of San Francisco has developed several local programs to address hazard mitigation, reduce losses, and deal with post-disaster reconstruction issues. These include:

Community Action Plan for Seismic Safety (CAPSS), 2000

In 2000, DBI initiated the Community Action Plan for Seismic Safety (CAPSS), an ongoing program of studies initiated by the Department of Building Inspection in 2000 to address the seismic vulnerability of San Francisco's privately owned buildings.

CAPSS is divided into three phases: Its first phase involved preliminary evaluations of seismic risks and public meetings to gain input on ways to reduce that risk. The second phase of the CAPSS study will include several components. One will be a vulnerability assessment to identify the City's most at-risk private buildings. Another component will formulate guidelines and criteria for the evaluation of, and subsequent repair or demolition of, buildings that are significantly damaged by earthquakes. A third element will be identification of other seismic hazard mitigation programs that should be developed. The CAPSS study is intended to be completed by February 2009. The results of the study could lead to re-evaluation of the City's

Emergency Operations Plan as well as implementation of various seismic hazard reduction programs.

72hours.org

72hours.org is a public service campaign providing information to residents on how to prepare for emergencies such as earthquakes, fires, severe storms, power outages and acts of terrorism. The program includes a series of public service announcements and an emergency preparedness website developed and maintained by the Department of Emergency Management. The website offers step-by-step instructions on how to make a family emergency plan, build a disaster kit, and get training before a disaster occurs.

Building Occupancy Resumption Program (BORP), 1996

The usual building inspection and posting program, instituted after a damaging earthquake, is organized to allow volunteer inspectors to post buildings that need to be reviewed by qualified structural engineers before they can be reoccupied. The BORP, coordinated by the Department of Building Inspection, is an emergency inspection program designed to facilitate rapid decisions regarding reoccupancy by eliminating the step by volunteer inspectors. The program provides pre-certification for private emergency inspection by qualified Structural Engineers who are retained by the building owner to evaluate and post buildings on behalf of the City. Building owners must request participation in this program prior to an earthquake, or other disaster, sponsor a pre-earthquake evaluation of their building, and meet the program requirements for setting specific criteria for posting. This program allows knowledgeable, pre-approved engineers to inspect and definitively post a building immediately without the need for another level of inspection. The City does not charge a fee for participation in this program.

Neighborhood Emergency Response Team (NERT), 1989

The Neighborhood Emergency Response Team Training Program was developed by the San Francisco Fire Department after the residential response to the 1989 earthquake. The program provides training in disaster and emergency response to neighborhood groups and residents, and prepares them to be members of an emergency response team. The 20-hour training program is taught by professional firefighters. There is no cost for neighborhood training under this program.

Coordinated Assistance Network, 2007

San Francisco's Coordinated Assistance Network (SF CAN) brings together the American Red Cross Bay Area Chapter, the Catholic Charities CYO, the Golden State Division of the Salvation Army, SF CARD, the San Francisco Department of Emergency Management, the United Way of the Bay Area and the Volunteer Center to streamline the response and recovery activities of San Francisco's community-based organizations and improve services to victims of disaster. The collaborative's efforts will establish a collaborative outreach program that will team nonprofits with public sector first-responders to streamline response and recovery efforts. San Francisco is one of six pilot cities chosen to participate in the national CAN initiative, which is working to create a national database to track disaster survivors

Unreinforced Masonry Building Ordinance, 1992

An unreinforced masonry bearing wall building (UMB) is a building or structure having at least one unreinforced masonry (typically brick) bearing wall. UMBs have a strong likelihood of structural failure in the event of earthquakes, either by the collapse of walls or the entire building. The City's 1992 UMB Ordinance required the City to notify all owners of UMBs, subsequently

required property owners of UMBs with buildings of five or more units to identify and file the "hazard class" of each particular UMB, and finally required all UMBs to be seismically upgraded. As of February 2006, all UMB's were required to be in full compliance with the Ordinance. As of December 2006, 266 buildings had not met the requirements of the Ordinance. 239 of these buildings had obtained building permits for strengthening. The Department of Building Inspection, which is charged with oversight and enforcement of the program, is pursuing abatement proceedings for remaining 27 buildings.

Unreinforced Masonry Building Loan Program, 1992

The Seismic Safety Retrofit Bond and Loan Program, also known as the UMB Loan Program, was authorized by San Francisco voters in 1992, authorizing \$350 million in bonds for loans to owners of UMBs. 10%, or \$35 million, was to be available for each year of the 10 year program. Of each \$35 million allocation, \$20 million was to be available for private, "market rate" housing, while the remaining \$15 million (each year) provided (SPUR) funding for low-interest loans to buildings containing affordable housing, with the borrower agreeing to ensure that the retrofitted units remain affordable to and occupied by low-income persons. The program is administered under the Department of Building Inspection by the UMB Seismic Safety Loan Program Administrator and a Loan Committee established by the Board of Supervisors. As this program was intended to support the UMB Ordinance, which sunset in February 2006, it is largely completed. Approximately \$330 million remains in the program.

Soft Story Wood-Frame Seismic Hazard Reduction Program, 2007

"Soft-story" buildings are wood-frame buildings with open fronts, usually large openings on the ground floor such as multiple garage doors or large storefront windows. Because of the lack of lateral in the first story, these buildings are at high risk for partial or total collapse in an earthquake. Particularly hazardous are corner buildings, where two sides of the building exhibit open fronts. Under the Department of Building Inspection's Soft Story Wood-Frame Seismic Hazard Reduction Program, an inventory of these buildings will be conducted and their owners notified. In phase two of the program, DBI expects to require mandatory strengthening of soft-story wood-frame residential buildings of three or more stories and 5 or more residential units built before 1973.

There are also several civic organizations addressing the issue of seismic mitigation, preparation and recovery:

Community Disaster Plan, 2006

The Community Disaster Plan is a pilot project designed to empower communities in the development of their own emergency response plans tailored to neighborhood needs. This Plan extends beyond the NERT program and outlines strategies for devising a local response to disaster that complements the City and County of San Francisco's larger Emergency Operations Plan. Work thus far on the project recommends that neighborhood organizations form an Emergency Preparedness Committee to coordinate neighborhood disaster preparedness efforts; identify local resources such as recreation centers, congregations and neighborhood associations that can help support implementation of the plan; and set forth how residents can work together to each other in the 72-hours post disaster. A partnership with the Department of Public Health will also coordinate services at the community level so that medical and mental health services will be available immediately after a major disaster. The pilot plan is being developed for District 5, as a cooperative program led by the Office of Emergency Services and Homeland Security, with the

Board of Supervisors, the Mayor's Office, and SF 5 Together, a coalition of neighborhood organizations in District 5, but its findings could be applicable to entire districts, neighborhoods, and even apartment complexes.

Bay Area Preparedness Initiative, 2007

The Bay Area Preparedness Initiative (BAPI), is a comprehensive program sponsored by the Fritz Institute, a non-profit organization that works in partnership with governments, non-profit organizations and corporations around the world to innovate solutions and facilitate the adoption of best practices for rapid and effective disaster response and recovery, to develop solutions that effectively partner nonprofit and faith based groups with uniformed first responders and government towards disaster preparedness. The program will focus initially on a major research effort to assess the vulnerability of San Francisco's most at-risk populations and the response capacity of the local community, including nonprofit and faith-based organizations, to serve them. The Initiative's research will lead to recommendations to government and philanthropic leaders about how best to support and ensure the response capacity of these groups.

San Francisco Community Agencies Responding to Disasters (CARD), 1994

SFCARD works with human service agencies serving vulnerable populations in San Francisco to ensure business continuity after a disaster. They provide extensive disaster preparedness training to support the capacity of local agencies and the vulnerable populations that they serve. In partnership with HELPLINK and the Volunteer Center, SFCARD is working a creating a Disaster Database to assist Health and Human Service agencies before, during, and after a disaster.

Neighborhood Empowerment Network (www.empowersf.org), 2007

The City held the first of an annual program of neighborhood summits in September 2007, to offer residents a "one stop shop" for people who want make their neighborhood a better place to live. The first summit featured information on resources and programs designed to improve Public Safety and Disaster Preparedness from a local level. It also launched the "Neighborhood Empowerment Network", a partnership of city agencies, local nonprofits and committed community leaders intended to provide local community groups with information on the resources and programs that can help achieve neighborhood goals, with a particular focus on becoming better prepared for natural disasters

- PEER Tall Buildings Initiative, 2007
- The City of San Francisco, like many other west coast cities, is undergoing a boom in the construction of tall buildings. While tall buildings are not inherently higher risk than any other modern buildings, given the high concentrations of these buildings, their special demands on City services, and their unique earthquake response characteristics, special procedures may be required to ensure tall buildings meet the safety objectives of current building codes. The Pacific Earthquake Engineering Research Center, with sponsorship from the *organizations within* Los Angeles and San Francisco, is engaging experts in the design of tall buildings to develop performance-based seismic design procedures for tall buildings. The initiative is working to develop guidelines that can provide supplementary guidance for high design and performance of tall buildings.

Natural Hazards in San Francisco

The greatest risks to life and property in San Francisco result directly from the ground shaking and ground failure associated with large earthquakes. Many of the other hazards San Francisco

faces, such as urban fires, transportation disruption, communication or technical failures, and ground failure are often associated with an earthquake. Other, less common, natural hazards include flooding due to a tsunami, seiche or reservoir failure, which may occur as a result of an earthquake. Another risk category consists of disasters due to human activity, such as environmental disasters such from the release of hazardous materials, including oil spills, socially motivated catastrophes from civil disturbances and terrorism, and might even include large-scale road accidents, incidents on commercial aircraft or other large scale mechanical failure.

Currently, San Francisco has not been identified as an area subject to flooding of natural waterways. However, the National Flood Insurance Program, which designates flood-prone areas, is currently re-mapping communities along the San Francisco Bay, including San Francisco, and it is expected that areas of the City will be mapped with Special Flood Hazard Areas, including portions of Mission Bay, Treasure Island, Hunters Point Shipyard and Candlestick Point, as well a significant portions of the Port. This aping, and subsequent identification of areas at risk of flooding is expected to be finalized in July 2008.

The section immediately following contains a brief review of the City's earthquake vulnerability and the risks associated with earthquakes: ground shaking and ground failures such as settlement, liquefaction and landslides. The subsequent section discusses inundation hazards such as tsunami and flooding. Human-caused disasters, such as terrorist activity, transportation disruptions or collisions, building collapses, and hazardous material spills or explosions are not discussed at length in this section, However, the mitigation, preparedness and response policies contained later in this Element apply to these kinds of disasters as well.

Please refer to the City's Emergency Operations Plan for more detail on disaster threats faced by the City of San Francisco. The Local Hazard Mitigation Plan currently under development will provide further analyses of these hazards, as well as include specific hazard mitigation plans to address them.

Earthquakes

Earthquakes have always occurred in the San Francisco area and will continue to occur in the future. There is a historical record of damaging earthquakes dating as far back as 1808. Although few magnitude 6 or greater earthquakes occurred between 1906 and the late 1970s, many scientists believe that higher frequency of earthquakes since 1979 may represent a return to the higher rates of activity recorded before 1906.

The great 1906 earthquake and the fire that it caused resulted in about 3,000 deaths. The worst building damage occurred on "made land": artificially filled areas created on former marshes, streams and bay. Wood-frame buildings in the South of Market area and brick buildings downtown were especially heavily damaged. Large ground displacements in the filled ground along the Bay damaged utilities. Damage to the gas generating and distribution system resulted in explosions and exacerbated the spread of fire. Breaks in the underground water pipes resulted in a loss of fire fighting capability. More than 28,000 buildings within a four square mile area were destroyed over a period of three days. About 100,000 people were left homeless. Refugee camps in parks and other open spaces continued for many months. A 1908 estimate of private property damage in the fire zone was \$1 billion. Some of the municipal bonds that financed the rebuilding of public facilities were not paid off until the 1980s.

The October 17, 1989 Loma Prieta earthquake occurred on the San Andreas fault about 60 miles (100 km) southeast of San Francisco. Sixty-two people were killed, including eleven in San Francisco. Forty-two of these fatalities occurred because of failures of bridges and freeways. Most of the remaining deaths resulted from the collapse of buildings in Santa Cruz and San

Francisco. The total damage to private and public facilities throughout the region is estimated at more than \$6 billion. Again, the damage was not evenly distributed through the city. Much of the severe damage occurred in the same areas that suffered in 1906, those built on unengineered artificial fill in the Marina and South of Market districts. Many buildings severely damaged by the earthquake had structural weaknesses known to make them vulnerable to earthquake damage. They included "soft story" wood-framed buildings (with large openings and inadequate strength at the ground story) and unreinforced masonry buildings. Fire ignited in the Marina District did not spread beyond the immediate region, owing to efforts of San Francisco firefighters and benign wind conditions. About 130 buildings in San Francisco, containing more than 1,000 housing units, were destroyed or irreparably damaged. Many more could not be occupied for an extended length of time while repairs were carried out. Additional residents were displaced temporarily by a lack of utilities. The Red Cross provided overnight shelter for about 2,000 people on the night of the earthquake.

After the October 1989 Loma Prieta Earthquake, the National Earthquake Prediction Evaluation Council formed a Working Group of earthquake scientists to assess the probabilities of large earthquakes in the Bay Area. The Working Group assessed the likelihood of one or more major earthquakes (magnitude 7 or greater and capable of resulting in substantial damage) in the Bay Area between 1990 and 2020. They concluded that there is a 67% chance that one or more large earthquakes will occur somewhere in the Bay Area by the year 2020. This means that a major quake is twice as likely to occur as it is not to occur. Most of our existing structures and infrastructure, and most of the new buildings and public works now contemplated, will probably be in place when the expected earthquake happens.

San Francisco Geology and Seismicity

The San Andreas fault system is a complex network of faults that extends throughout the Bay area. (See Map 1.) While no known active faults exist in San Francisco, major earthquakes occurring on the faults surrounding the City have resulted in substantial damage within the City. Similar damaging earthquakes in the future are inevitable.

MAP 1 - Bay Area Earthquake Faults (USGS 2007)

Some of these faults are found beneath or close to the most heavily populated parts of the Bay Area. As a result, earthquakes on these faults could be much more damaging than the Loma Prieta earthquake, even if the magnitude is smaller. The Northridge earthquake of 1994 and the Kobe earthquake of 1995 illustrate how destructive earthquakes very close to urban areas can be. The Northridge earthquake, with a magnitude of 6.8 resulted in about 60 deaths and severe or total damage to about 3000 buildings. The Kobe earthquake had a magnitude of 6.8 and resulted in more than 5,000 deaths and the loss of about 60,000 buildings, including those destroyed by fire.

The location and movement of earthquake faults do not explain all of the earthquake risk. Even in locations that are relatively far from faults, soils can intensify ground shaking, or the ground may settle or slide. The parts of San Francisco that experienced the greatest damage in 1989 were not those closest to Loma Prieta, but those with soils that magnified ground shaking or liquefied. These were the same areas that experienced damage in 1906, though the epicenter of the 1906 earthquake was in a different direction.

The hills along the central spine of the San Francisco peninsula are composed of rock and soils that are less likely to magnify ground shaking, although they are sometimes vulnerable to landsliding during an earthquake. The soils most vulnerable during an earthquake are in low-lying and filled land along the Bay, in low-lying valleys and old creek beds, and to some extent, along the ocean. Those soils, as well as those at steep hillsides, are at the most serious risk during

earthquakes from ground shaking and ground failure such as earthquake liquefaction and landslides.

Ground Shaking

Most earthquake damage comes from ground shaking. Ground shaking occurs in all earthquakes. All of the Bay area and much of California are subject to some level of ground shaking hazard. The impacts of ground shaking will be quite widespread. The severity of ground shaking varies considerably over the impacted region depending on the size of the earthquake, the distance from the epicenter of the earthquake, the nature of the soil at the site, and the nature of the geologic material between the site and the fault.

Intensity impacts for the most probable earthquakes, an earthquake on the northern segment of the Hayward Fault and on the Northern California segment of the San Andreas Fault (essentially a repeat of the 1906 earthquake), are shown on maps below. A comparison of these maps shows that the intensities of ground shaking will vary considerably throughout the City during any given earthquake, and that the pattern of groundshaking is fairly consistent, reflecting the underlying soils. In general, sites with stronger soils will experience shaking of less intensity than those in low-lying areas and along the Bay, with Bay mud or other weaker soils. Some sites, particularly those with poor soils, will experience strong ground shaking in most earthquakes.

MAP 2 - Modeled Shaking Intensity Map for San Francisco Scenario: Northern Hayward Fault (ABAG 2003)

MAP 3 - Modeled Shaking Intensity Map for San Francisco Scenario: San Andreas Fault / 1989 Loma Prieta Earthquake (ABAG 2003)

Ground Failure, Liquefaction and Landslides

"Ground failure" means that the soil is weakened so that it no longer supports its own weight or the weight of structures. Ground failure can happen without earthquakes. For example, landsliding is a natural geological process. It is also likely to occur suddenly and catastrophically during earthquakes. The major types of ground failure associated with earthquakes are liquefaction, landslides, and settlement.

Liquefaction is the transformation of a confined layer of sandy water-saturated material into a liquid-like state because of earthquake shaking. When soil liquefies during an earthquake, structures no longer supported by the soil can tilt, sink or break apart. Underground utilities can be substantially damaged. Localities most susceptible to liquefaction are underlain by loose, water-saturated, granular sediment within 40 feet of ground surface, a condition which is widespread in San Francisco. This susceptibility is exacerbated by the high risk of ground shaking from nearby active faults. The combination of these factors constitutes a significant seismic hazard in the City and County of San Francisco.

A landslide is a movement of a mass of soil down a steep slope when the soil loses strength and can no longer support the weight of overlying soil or rocks. Landslides vary in size and rate of movement. They can occur slowly over time or suddenly. Areas susceptible to landslides are those where masses of soils are weakly supported because of natural erosion, changes in ground water or surface water patterns, or human activities such as undercutting. Landslides can be triggered by heavy rains, as occurred during the high wind and rainstorms of the winter of 1995-1996 and in early 1997. Earthquakes will trigger landslides in susceptible areas, as occurred in the Santa Cruz Mountains during the 1989 Loma Prieta earthquake. A large earthquake in San Francisco may cause movement of active slides and could trigger new slides similar to those that have already occurred under normal conditions.

The California Geological Survey (CGS) has prepared maps of areas of liquefaction potential, as required by the Seismic Hazard Mapping Act of 1990. The map and evaluation report summarizing seismic hazard zone findings for potentially liquefiable soils show that liquefaction zones exist south of Market Street, in the Mission District, and at Hunters Point; in areas of artificial fill along the waterfront, especially the Marina District and at Treasure Island; and along the beaches facing the ocean. Liquefiable soils are also generally found in filled areas along the Bay front and former Bay inlets, and in sandy low-lying areas along the ocean front and around Lake Merced. The analysis also demonstrates the locations of steep slopes and cliffs that are most susceptible to landsliding. These earthquake-induced landslide hazard zones make up about 3 percent of the land in San Francisco.

This Seismic Hazard Zone Map, shown as Map 4, illustrates the areas with liquefaction potential and those subject to earthquake induced landslides. This map must be used by the City when adopting land use plans and in its permitting processes. Development proposals within the Seismic Hazard Zones shown on the official maps must include a geotechnical investigation and must contain design and construction features that will mitigate the liquefaction hazard. The City's Department of Building Inspection uses these guidelines during independent building review of proposed projects.

MAP 4 - Seismic Hazard Zones for San Francisco (California Department of Conservation, Division of Mines and Geology, 2001)

Inundation Hazards

Tsunami

Tsunamis are large waves in the ocean generated by earthquakes, coastal or submarine landslides, or volcanoes. Damaging tsunamis are not common on the California coast. Most California tsunami are associated with distant earthquakes (most likely those in Alaska or South America), not with local earthquakes. Devastating tsunamis have not occurred in historic times in the Bay area. Because of the lack of reliable information about the kind of tsunami runups that have occurred in the prehistoric past, there is considerable uncertainty over the extent of tsunami runup that could occur. There is ongoing research into the potential tsunami run-up in California. Map 9 shows areas where tsunamis are thought to be possible.

MAP 5 - Tsunami Hazard Zones (Office of Emergency Services and Homeland Security, 2006)

Flooding

The National Flood Insurance Program designates flood prone areas. There are no areas currently identified as prone to surface flooding in San Francisco. However, the National Flood Insurance Program, which designates flood-prone areas, is currently re-mapping communities along the San Francisco Bay, including San Francisco, and it is expected that areas of the City will be mapped with Special Flood Hazard Areas, including portions of Mission Bay, Treasure Island, Hunters Point Shipyard and Candlestick Point, as well a significant portions of the Port. This mapping, and subsequent identification of areas at risk of flooding is expected to be finalized in July 2008.

Reservoir Failure

Dams and reservoirs which hold large volumes of water represent a potential hazard due to failure caused by ground shaking. The San Francisco Water Department owns above ground reservoirs and tanks within San Francisco. Their inundation areas are shown in Map 10. The San Francisco Water Department monitors its facilities and submits periodic reports to the California

Department of Water Resources, Division of Safety of Dams (DOSD), which regulates large dams.

MAP 6 – Dam Failure Inundation Areas (Office of Emergency Services and Homeland Security, 2006)

Impacts of Future Earthquakes

Earthquakes' most profound impacts are deaths and serious injuries. Deaths and injuries largely depend on the number of people in the area at the time, and the types of structures that they occupy. Although risk is related to much more than distance from the earthquake, it is interesting to note that about 1.26 million people live within 10 km of the likely epicenter of a magnitude 7 earthquake on the Northern segment of the Hayward fault. This is about 10 times the number of people at a similar distance from the epicenter of the Loma Prieta earthquake.

Since the 1906 earthquake, San Francisco has made strides in ways to avoid and reduce impacts of earthquakes and other disasters. Improvements in building and fire codes, modern construction techniques, and retrofits reduced vulnerability. However, the City's population has more than doubled, and the value of its buildings has increased significantly; these increases in population and appreciated building values result in heightened risk.

Most deaths and injuries will result from the failure of buildings and other structures. The number of casualties will be influenced by the time of day of the earthquake. At night more people are in relatively safe small wood-frame structures. During the day more people could be in more hazardous and higher occupancy buildings, on vulnerable bridges and freeways, or on streets subject to falling debris. In recent large earthquakes, buildings designed and constructed with current engineering techniques generally performed well. This means that they did not collapse or pose an unreasonable threat to the lives of occupants, although they may have suffered structural damage that is difficult, expensive or even impossible to repair.

The 1974 Community Safety Element specifically examined unreinforced masonry buildings (UMBs) because of their record of poor performance in earthquakes. Eight deaths during the Loma Prieta earthquake resulted from UMBs. In the Loma Prieta earthquake about 13% of all San Francisco UMBs were damaged to the extent that occupancy was limited, while about 2% of other San Francisco buildings were damaged. To date, most of the City's unreinforced masonry buildings have been upgraded via the 1992 UMB Ordinance. However, other hazardous building types remain. Most of San Francisco's private, noncommercial buildings are wood, and are highly susceptible to post-earthquake fire conflagration. Concrete frame structures with unreinforced masonry infill panels are also a concern, as they are prone to collapse during earthquakes. Non-ductile concrete structures often fail in large earthquakes. "Soft-story" buildings, wood-frame buildings with open fronts or other extensive wall openings are also at high risk for partial or total collapse.

A major earthquake will result in substantial damage to utility systems. It is likely that fires will break out, larger and in greater number than can be controlled by available professional fire fighters. There may be releases of hazardous materials.

In addition to these physical impacts, there will be social and economic impacts. Lost housing will result in the need for both temporary, short-term shelter and for permanent housing to replace that which is completely destroyed. People with limited English language facility or limited mobility may be at increased risk. Many businesses will be seriously disrupted. Valuable historic buildings will be lost.

The Earthquake Response Plan Enhancement, a part of the Emergency Operations Plan contains an analysis of the potential impact of several possible scenarios of earthquakes on the City of San Francisco. The mid-range scenario viewed by the analysis looked at magnitude 7.1 to 7.2 earthquakes on the Peninsula-Golden Gate segment of the San Andreas Fault. The analysis showed that under this scenario, injuries requiring basic or significant medical aid could range from 5300 to 8700, and life threatening casualties or deaths could encompass anywhere from 350 to 650 depending on the time of day and day of the week. The greatest numbers of casualties are likely to occur during the daytime, when the commuting population nearly doubles the total population, and in areas where the working population is greatest. In terms of building damage, as much as 25% of the City's private residential buildings could sustain complete economic loss under a mid-range scenario quake, from either the earthquake itself or from post-earthquake fires; and up to 23% percent of the City's stock of commercial and industrial buildings could be similarly destroyed by earthquake or related fires. In terms of social impacts and displacement, nearly 92,000 households, about 28% of the total, will require new housing, and over 56,000 people, 7 percent of San Francisco's total population, would need short-term shelter, with need greatest among the elderly and disabled populations.

OVERALL GOALS, OBJECTIVES AND POLICIES

One of the Priority Policies of the City's General Plan, with which all City actions are required to be consistent, is that the City achieve the greatest possible preparedness to protect against injury, loss of life, and economic impacts in an earthquake. The policies of the Community Safety Element are intended to direct all City actions to achieve this goal in the face of earthquakes and other natural and technological disasters, to reduce the social, cultural and economic dislocations of disasters, and to assist and encourage the rapid recovery from disaster should one occur. The Community Safety Element also sets forth the responsibilities of the many City departments who will need to implement these policies.

Objectives and Policies to advance this goal are classified into four general categories. They are:

- **Mitigation.** Hazard mitigation policies and programs are intended to diminish long-term risks to an appropriate level. Hazard mitigation activities, effectively carried out, reduce the need for response and recovery from disasters because they will reduce the amount of physical damage suffered.
- **Preparedness.** Preparedness anticipates the effects of a disaster and takes appropriate countermeasures in advance, such as issuing warnings, stockpiling supplies, or establishing evacuation routes. Preparedness programs educate and organize people to respond appropriately to disasters.
- **Response.** Response actions are those taken during an event and its immediate aftermath. Response programs are generally focused on those agencies with responsibility for providing emergency and other services to the public when a disaster occurs. The focus of response activities is saving lives and preventing injury, and reducing immediate property damage.
- **Recovery and Reconstruction.** Recovery encompasses the steps necessary to bring a community back to life – fundamentals such as housing, business resumption, and day-to-day services. Reconstruction happens over the long term after a major disaster. Both phases require that key decisions be made about short-term and long-term rebuilding, including the provision of housing for those displaced, resumption of services to homes and businesses, and the resumption of business and government functions.

Communication is an important aspect of all of these steps. Knowledge about natural disasters is continually growing, and in order to deal with disasters effectively, it is critical that the public, City agencies, and decision-makers be well informed. It is also important that information about events and activities in the City be available to other government agencies and researchers. The general public needs to know how they can mitigate against and be prepared for disaster. The City needs to facilitate effective and continued contact with the community; as well as among its various organizations and departments in order to be an effective responder. Also embedded in these stages is the need for improved and enhanced coordination. Improvements in coordination among City programs, and among others working to reduce the risks of disasters will result in more effective mitigation, preparedness, response and recovery efforts. Constant coordination with outside agencies including regional, state and federal bodies, will expand the City's network of support and the speed with which it responds in the case of a San Francisco disaster.

1. MITIGATION

OBJECTIVE 1

REDUCE STRUCTURAL AND NON-STRUCTURAL HAZARDS TO LIFE SAFETY AND MINIMIZE PROPERTY DAMAGE RESULTING FROM FUTURE DISASTERS.

Most earthquake-related deaths and injuries will result from the failure of buildings and other structures as a result of shaking or ground failure. Damage to structures results in substantial economic losses and severe social, cultural and economic dislocations. In addition to the characteristics of the earthquake and of the site, a structure's performance will depend on structural type, materials, design, and quality of construction and maintenance. The hazards posed by buildings and other structures can be reduced by assuring that new structures incorporate the latest engineering knowledge, by learning more about the risks posed by vulnerable structures and developing plans to reduce those risks, and by including a consideration of natural hazards in all land use, infrastructure, and public capital improvement planning.

POLICY 1.1

Continue to support and monitor research about the nature of seismic hazards in the Bay Area, including research on earthquake prediction and warning systems, and about earthquake resistant construction and the improved performance of structures.

Knowledge about geologic risks in the Bay Area is substantial, but always evolving. The City needs to keep informed, through the professional contacts of its staff, and through State and federal agencies like the California OES and the United States Geological Survey, about advances in the field. New information will be shared with the public and decision-makers.

Similarly, new techniques are continually developing in the seismic design of structures. The risks of damage to life and property can be reduced by these improved engineering practices. The City should continue to support the institutions, professional organizations and individuals who carry out research in structural safety.

IMPLEMENTATION 1.1

- The Department of Emergency Management will incorporate professional development and best practices research for staff concerning seismic hazards into its annual work program, and shall seek funding to support outside agency research.
- The Department of Building Inspection will incorporate professional development and best practices research for staff concerning seismic hazards into its annual work program.

POLICY 1.2

Research and maintain information about emerging hazards such as terrorism threats and communication failures.

Partially due to the recent events of September 11th, the South Indian Ocean Tsunamis, and Hurricane Katrina, this field of disaster research is growing in both scope and recognition. While research into disasters focused primarily on natural disasters, sticking close to the areas of science and environmental management, newer research strains extend into terrorism and cyber-failures, biological and chemical emergencies and other community-wide crises beyond natural hazards. They also encompass research components such as organizational response to disasters, the social ramifications of hazards and disasters, particularly the effects of large-scale terrorist attacks. The City's emergency management departments should keep abreast of evolutions in this field of research, particularly as new threats emerge and as new methods of mitigating those are developed. DEM should also continue its work with the San Francisco Citizen Corps Council, modeled after the national Citizen Corps program established after the September 11th terrorist attacks, which aim to elevate the level of networking, emergency training and outreach to the public.

IMPLEMENTATION 1.2

- The Department of Emergency Management, the San Francisco Police Department, the San Francisco Fire Department, and the Department of Technology and Information Services will continue to research best practices for emergency response and will train employees on how to implement those best practices.
- The Department of Emergency Management will continue to develop the San Francisco Citizen Corps Council in order to improve networking and emergency training for the general public.

Regulations for New Development

The State of California requires the use of the California Building Code, based on the model Uniform Building Code (UBC) prepared by the International Conference of Building Officials (ICBO). The International Building Code, prepared by the International Code Council, will become effective as the model building code for San Francisco on January 1, 2008. Buildings built to current code provisions are expected to resist damage from minor earthquakes, experience some non-structural damage from moderate earthquakes, and incur non-structural and some structural damage (but not collapse) in major earthquakes (Specially-regulated buildings such as hospitals are designed for better performance). The Code is continually updated as knowledge grows about how structures respond to earthquakes. Recent earthquakes in Northridge and Kobe have demonstrated that buildings that incorporate current engineering knowledge about earthquakes generally perform well in earthquakes.

Local governments are permitted to impose more restrictive standards than those in the State codes when this can be justified by local conditions such as seismicity, topography (for example hilly terrain), or climate. San Francisco adopts the California Building Code with modifications which concern the resistance to ground-shaking and hillside construction, as well as some long-standing local provisions. The San Francisco Building Code is adopted by the Board of Supervisors and implemented by the Department of Building Inspection (DBI), which reviews

building plans and inspects buildings under construction to ensure that the approved plans and codes are followed.

POLICY 1.3

Assure that new construction meets current structural and life safety standards.

The Department of Building Inspection and the Fire Department have ongoing responsibility for reviewing plans for proposed buildings and inspecting buildings under construction to ensure that they are built as shown on the approved plans and in accordance with applicable codes. This includes ongoing training for plan checkers and the involvement of professional structural and civil engineers with expertise in seismic engineering.

The engineering of complex or unusual structures requires more than the routine application of set rules. It often involves creativity and judgment in solving new design problems. Because there can be considerable independent judgment required, the involvement of more than one design professional can often shed new light on structural issues, or uncover overlooked problems.

IMPLEMENTATION 1.3

- The Department of Building Inspection and the Fire Department shall continue training for all plan check review staff.
- The Department of Building Inspection will recommend, and in some cases require, the involvement of “peer review” - independent reviewers from the private sector - in situations where advanced or unusual technologies are used. .

POLICY 1.4

Review and amend at regular intervals all relevant public codes to incorporate the most current knowledge of structural engineering regarding existing buildings.

The State of California mandates the local adoption of the California Building Code. Buildings built to these provisions are expected to resist damage from minor earthquakes, experience some non-structural damage from moderate earthquakes, and suffer some structural damage, but not collapse; from major earthquakes (specially-regulated buildings such as hospitals are designed for better performance.) The Code is updated as knowledge grows about how structures respond to earthquakes. Local governments may impose more restrictive standards than those in the State code. San Francisco adopts the State code with modifications that concern the resistance to ground-shaking and hillside construction, as well as other local equivalencies. San Francisco is about to adopt the International Building Code (IBC), which will make significant changes in both the structural and nonstructural seismic requirements for new buildings.

Chapter 34 of the San Francisco Building Code includes long-standing local provisions that supplement those of the state and model codes with regard to required upgrades of existing structures. These provisions must be updated and modified to be in coordination with the coming 2007 California Building Code. In addition, the City should consider provisions that explicitly endorse or adopt consensus standards for the seismic evaluation and retrofit of existing buildings. State amendments to the model code (for DSA-regulated structures) and related model code provisions (such as those in the International Existing Building Code) provide examples to follow.

Even with this new building code, however, the local code may, in time, lag behind technology advances. For example, recent advances in elevator safety make it possible for occupants to use elevators for escape and for firefighters to use them to ascend to fight fires, which could be critical for taller buildings. Recognizing that San Francisco is at high risk to fires due to seismic issues, the Fire Department is developing local code amendments that would make elevators in new high-rises more resistant to fire, smoke and water. The City should continue this practice of proactively reviewing and updating codes to incorporate the latest knowledge and standards of safety and seismic design.

IMPLEMENTATION 1.4

- The Department of Building Inspection will continue to regularly update the local code in addition to the changes encouraged by state and model codes.
- The Department of Building Inspection will continue to research and incorporate consensus standards for the seismic evaluation and retrofit of existing buildings.
- The Department of Building Inspection shall adopt and implement the International Building Code.
- The Department of Building Inspection, in conjunction with the Fire Department, should continue to update building codes as new technologies and best practices are developed. While national and state codes are relevant, particular attention should be paid to potential earthquake damage.
- The Department of Public Health should be incorporated into the review of the Building Code to ensure that public health and wellness are incorporated into the universal code.

POLICY 1.5

Support development of buildings code requirements that meet improved seismic performance, above and beyond building code requirements.

The design and construction methods used in buildings are critical to community safety. Current seismic codes ensure that new buildings are earthquake- and fire-resistant, and protect people inside buildings by preventing collapse and allowing for safe evacuation. However, current code requirements do not necessarily limit damage to a structure, or ensure its function post-earthquake. A number of factors support the idea that new buildings in San Francisco should be built for better seismic performance than the default level provided by the current building code. Among U.S. cities in areas of very high seismic hazard, San Francisco is unique because of its geography, urbanization, and reliance on public transportation. Damage to new buildings and developments can have magnified impacts that affect adjacent structures and the city's lifelines. But seismic improvements can often be provided with measures that increase building costs by no more than a few percent, if at all.

The Bay Area is fortunate to be home to many of the country's foremost experts in the structural and earthquake engineering professions. These professionals should be encouraged to design buildings to an "enhanced" level of seismic performance, and developers to finance these enhanced levels, by offering incentives such as priority processing. (similar to a LEED certification for sustainable design). Eventually the City could consider ways to formalize such "enhanced" design levels.

IMPLEMENTATION 1.5

- The Department of Building Inspection shall support “enhanced” design of high-rise structures, and should consider incentives to foster such high performance design.

POLICY 1.6

Consider site soils conditions when reviewing projects in areas subject to liquefaction or slope instability.

Building codes consider soil conditions only at a very general scale. But soils conditions vary enormously throughout the City. Different soils conditions can result in very different earthquake impacts and can result in damage at other times - for example landslides. Because of the importance of soil conditions, the California Seismic Hazards Mapping Act requires that a geotechnical investigation and geotechnical report be prepared for new or renovated buildings that are constructed in Seismic Hazard Zones.

Pursuant to this act, the Department of Building Inspection requires geotechnical reports prepared by a licensed geotechnical engineer for projects in areas with susceptibility to ground failure, including liquefaction and landslides. DBI requires that foundations and structural systems be designed that are more likely to survive these hazards. DBI has ongoing contracts with private geotechnical engineering firms with whom it consults about proposed projects the Department believes present difficult or unusual issues in areas with the potential for ground failure.

IMPLEMENTATION 1.6

- The Planning Department and the Department of Building Inspection will continue to work with geotechnical engineering firms to evaluate soil conditions in reviewing development proposals.

POLICY 1.7

Consider information about geologic hazards whenever City decisions that will influence land use, building density, building configurations or infrastructure are made.

Land use decisions should be made with hazards in mind. The Planning Commission and other City decision-makers shall be aware of and consider geologic hazards when making decisions that will affect the types and structures that will exist in the future, including potential and existing structures, land uses and their associated densities, transportation and other infrastructure. Area plans, changes to the General Plan and amendments to the Planning Code should take into consideration the hazards resulting from geologic conditions, and the effects they may have on the safety of future development, while balancing these with other community welfare concerns, ranging from safety to community health to economic security to quality of life.

In order to protect City building, building codes and technical knowledge must be as up to date as possible as new engineering expertise is gained. Keeping abreast of such information and technologies should be a priority for the City.

IMPLEMENTATION 1.7

- The Planning Department and the Department of Building Inspection will continue to train and educate staff concerning the most recent research and findings concerning geological hazards and how to mediate them.
- The Planning Department and the Department of Building Inspection will continue to include the review of geological hazards in project approvals.

Policy 1.8

Assess the risk of flooding in San Francisco by participating in the development of a Flood Insurance Rate Map for San Francisco, and use available programs from this map to mitigate against flood risks.

The National Flood Insurance Program (NFIP), managed by the Federal Emergency Management Agency (FEMA), provides for flood insurance for communities that adopt floodplain management programs to mitigate flood losses and damages. The Flood Insurance Rate Map (FIRM)s used by FEMA to identify areas with 1% annual chance of flooding, and uses this as the basis for insurance rating.

Because the City has no published flood map, San Francisco does not currently participate in the NFIP. However, flood hazards do exist. The FEMA Region IX Office (Oakland) is currently re-mapping communities along the San Francisco Bay, including San Francisco, and plans to publish final maps in July 2008. It is expected that areas of the City will be mapped with Special Flood Hazard Areas, including portions of Mission Bay, Treasure Island, Hunters Point Shipyard and Candlestick Point, as well as significant portions of the Port. To mitigate against potential risks, the City should follow this mapping exercise and use the information it provides to take future mitigation steps, such as adoption of a floodplain management program, acceptance into the NFIP, and additional floodplain improvements to at-risk areas.

IMPLEMENTATION 1.8

- The Department of Emergency Management and Port staff will continue education efforts about the advantages of adoption of a floodplain management ordinance, develop a media strategy to inform the public; and participate in briefings for members of the Board of Supervisors and Board hearings.
- Port staff will continue consulting with City and FEMA staff regarding FEMA's FIRM mapping effort, the NFIP and the possible development of a San Francisco Floodplain Management Ordinance.
- The Department of Emergency Management and Port staff will develop recommendations based on information from the FIRM map for flood control improvements along the San Francisco shoreline to reduce coastal flood hazard risks.

POLICY 1.9

Promote green stormwater management techniques.

As an urbanized area, San Francisco has an abundance of impervious surface. Buildings, streets, parking lots and other paved surfaces prevent the absorption of rainfall, so low lying areas of the City are particularly susceptible to flooding in heavy rains. In addition, urban storm water runoff can be highly polluted, and pollutants that go down street storm drains can have negative impacts

on the sewer and storm system, contributing to system overflows. Natural systems can often be an effective supplement, helping to absorb the overflow and filter out pollutants from that runoff.

Building and site development should include natural systems wherever possible. Natural vegetation, landscaped swales and gardens included in site designs can reduce, filter or slow stormwater runoff. “Green streets” that include pervious concrete, planters and landscaped strips adjacent to sidewalks can assist the City’s sewer discharge capabilities. Green roofs incorporated into buildings provide another method of absorption. Similarly, sustainable construction techniques can be used to mitigate against the effects of future disasters. Green building technologies now allow for buildings that can provide their own power and filter their own water from run-off. This helps reduce two problems associated with disasters, the need for power and the need for potable water.

IMPLEMENTATION 1.9

- The Planning Department will encourage the development of green stormwater management techniques into City plans and private development proposals in an effort to encourage the utilization of such techniques citywide.
- The Public Utilities Commission will continue to implement projects at the highest possible level of stormwater management.
- Department of Public Works will evaluate the ability to incorporate green stormwater management into planned projects.
- The Public Utilities Commission, Planning Department and the Department of the Environment will continue to coordinate educational outreach on the benefits of green management techniques.

POLICY 1.10

Ensure new development on Treasure Island and Yerba Buena Island is seismically resistant, and that this development is included in earthquake planning efforts.

Treasure Island is an artificial land mass, built on landfill. Because of this, it is at a high risk of liquefaction during an earthquake. Current plans for the development of approximately 6,000 new homes on Treasure and Yerba Buena Islands do recognize this risk, and require the seismic stabilization of the islands’ perimeter.

In addition to soil stabilization, redevelopment plans should ensure new development is designed and constructed to ensure performance equivalent to that of similar structures built on firm ground.

IMPLEMENTATION 1.10

- Prior to, during, and following implementation of the Treasure Island Redevelopment Plan, the Planning Department, the Department of Building Inspection, the Department of Emergency Management, and the Treasure Island Development Authority will coordinate the seismic safety of the plans, the construction process, and the final developments.

Programs for Existing Building Stock and Infrastructure

Most of San Francisco's buildings predate modern seismic design and construction practice. Some older buildings, such as conventional wood frame houses, perform well in earthquakes, but even those expected to survive an earthquake are likely to sustain more damage than their modern counterparts. Local and state legislation already addresses certain classes of hazardous and essential structures, such as UMBs and hospitals, but significant risks remain. Earthquake risk reduction will require an enhanced understanding of the current building stock, followed by focused efforts to address critical conditions in public and private buildings.

In addition to existing buildings, programs should be implemented to prepare existing infrastructure for a large scale disaster.

POLICY 1.11

Complete remaining upgrades of the Unreinforced Masonry Building Seismic Hazard Reduction Program and the parapet Safety Program.

Two City programs to reduce earthquake hazards are largely complete. Enacted in 1969, the Parapet Safety Program required private property owners to reinforce older parapets and roofline appendages. Enacted in 1969, the Parapet Safety Program required private property owners to reinforce older parapets and roofline appendages. These features, if not securely anchored to the building, pose a high life safety threat during earthquakes. This problem is most common on unreinforced masonry and concrete buildings built prior to 1949. Structural engineers have credited the strengthening performed pursuant to the parapet ordinance with preventing injuries and building damage which might otherwise have occurred during the Loma Prieta Earthquake.

In 1992, the Unreinforced Masonry Building Seismic Hazard Reduction Program and Ordinance required the retrofit of unreinforced masonry buildings (UMBs), to address their record of poor performance in earthquakes. As of January 2007, all but approximately 270 of these buildings had been retrofit. The upgrade of these remaining at-risk buildings is being pursued by the Department of Building Inspection.

IMPLEMENTATION 1.11

- The City Attorney's Office will work with the Department of Building Inspection to bring remaining UMB into compliance.

POLICY 1.12

Assess the risks presented by certain concrete structures and reduce the risks to an appropriate level.

Non-ductile concrete frame buildings perform poorly in earthquakes, with notable collapses having occurred in the 1971 San Fernando, 1985 Mexico City, and 1994 Northridge events.. Buildings of these types exist in San Francisco but have not been inventoried. Non-ductile concrete frame buildings were constructed as factories, warehouses, or office buildings in the densest parts of the City until the San Francisco building code was changed in 1976 to require ductility. ABAG estimated that more than 30% of the commercial building stock and more than 50% of the industrial building stock is concrete, with an unknown but large number of these being non-ductile concrete. Some of these buildings have historical or architectural value. Because of their larger size and central location, non-ductile concrete frame buildings are often converted to new uses such as offices or residential units. Such conversions provide opportunities

to eliminate the possibility of collapse during major earthquakes. Standards for the evaluation and retrofit of non-ductile concrete buildings exist, but the engineering is more complicated and the retrofit generally more disruptive and expensive than it is for other vulnerable structure types.

Pre-cast concrete tilt-up buildings built before 1973 have performed poorly in the 1971 San Fernando, 1989 Loma Prieta, and 1994 Northridge earthquakes. There are believed to be relatively few of these buildings in San Francisco, and many are used as warehouses with few occupants, but they have not been carefully inventoried. Evaluation and retrofit standards exist and are relatively easy to implement. (SPUR)

IMPLEMENTATION 1.12

- The Department of Building Inspection will create an inventory of non-ductile concrete frame and pre-cast concrete tilt-up buildings.
- The Planning Department and the Department of Building Inspection will develop requirements for upgrade of buildings when conversions are proposed.
- The Planning Department and the Department of Building Inspection will work to create a program to assist, both technically and financially, property owners in making necessary seismic upgrades to non-ductile concrete frame and pre-cast concrete tilt-up buildings.

POLICY 1.13

Reduce the earthquake and fire risks posed by older small wood-frame residential buildings through easily accomplished hazard mitigation measures.

San Francisco's current programs for UMB and soft-story wood-frame buildings only apply to larger scale and commercial structures. Individual homes or buildings under 5 units are not required to be seismically strengthened, and therefore exist at varying levels of risk. Some individual homeowners make upgrades to their buildings voluntarily, but that number could be substantially increased with more programs designed to encourage homeowners to make safety improvements. "Soft-story" buildings, in which the ground story has much less rigidity and/or strength than the rest of the structure, pose significant hazards. Often the soft story is the result of multiple garage door openings or "tuckunder" parking. Soft-story collapses resulted in deaths in both the 1989 Loma Prieta and 1994 Northridge earthquakes.

These deficiencies can be fixed relatively easily and inexpensively, substantially reducing life safety hazards and the likelihood that the building will sustain substantial damage in an earthquake. There are currently no requirements to undertake this work, although many owners do so voluntarily. Insurance companies sometimes encourage or require upgrade as a condition of providing insurance. The State of California requires sellers of homes built before 1960 to disclose the existence of a series of common weaknesses, including lack of foundation bolts and water heater bracing, and to provide a copy of the state publication, *The Homeowners Guide to Earthquake Safety*. This law does not require sellers to fix these deficiencies. The City of Berkeley has a program which rebates a portion of the City's real estate transfer tax, if the money is applied to the mitigation of seismic hazards. This program has funded over 1700 retrofits since it began in 1993. The City of San Leandro has published guidelines, and provides technical assistance to encourage owners of small wood-frame homes to reduce their seismic risks.

The City should adopt incentives and regulations to encourage relatively simple retrofit approaches that increase the structural stability and safety of smaller wood frame residential buildings. The City's Soft Story Wood-Frame Seismic Hazard Reduction Program establishes an inventory of buildings with five or more units and notifies their owners of their risk. Future phases of the program will likely require mandatory strengthening of soft story buildings and may

deal with buildings with fewer units; however, this strengthening may be difficult for homeowners to achieve without financial support or relief. Utilization of the remaining loan funds from the UMB loan program may provide one way of supporting these upgrades. Another possible economic incentive is a tax break or incentive provided in relation to structural mitigation activities. Berkeley's Transfer Tax Incentive for Homeowner Mitigation Program rebates up to one third of the transfer tax amount to be applied to seismic upgrades on homes. This economic incentive encourages new homeowners to perform earthquake improvements with reduced out-of-pocket expense. This program, in concert with the City's other retrofit incentives, has led to nearly 60 percent of the private residences in Berkeley being made more seismically resistant. Another method that should be explored is reductions or waivers of permit fees for seismic retrofits.

IMPLEMENTATION 1.13

- The Department of Building Inspection will continue to implement the Soft Story Wood-Frame Seismic Hazard Reduction Program. One element of implementation should be the exploration of a fund to assist property owners to make the necessary changes to improve the safety of their structures.
- The Tax Assessor's Office shall explore the potential of programs which provide financial incentives, such as rebate of a portion of the City's real estate transfer tax, for mitigation of seismic hazards.
- The Assessor's Office shall also explore the potential for implementing a program that replicates the Berkeley Transfer Tax Incentive for Homeowners Mitigation Program as a method to encourage private sector renovations.

POLICY 1.14

Abate structural and non-structural hazards in City-owned structures.

Both technical and financial resources are needed to repair and retrofit City-owned structures. The City shall utilize its capabilities to assess hazards and to create and implement bond and other funding opportunity and to carry out retrofit projects. A number of City buildings have already been structurally upgraded utilizing bond financing.

There are other important City-owned buildings that present seismic risks, but for which funding for retrofit or replacement have not yet been secured. Among the most critical are nine subsidiary buildings at the Laguna Honda Hospital complex and 18 at the San Francisco General Hospital complex that are vulnerable to severe earthquake damage. The Hall of Justice is also vulnerable. These projects should be considered for future bond measures.

The City's Capital Improvement Advisory Committee acts as the policy body advising San Francisco's capital-planning process. Recognizing that certain kinds of public buildings are critical to the community's functioning, the CIAC should work to establish a clear prioritization for these projects, develop an implementation program for their upgrade including funding sources (such as bond measures), and establish a timeline for the improvements.

IMPLEMENTATION 1.14

- The Department of Public Works and the Department of Building Inspection shall continue to work with the Capital Improvement Advisory Committee to develop a list of priority retrofit projects.
- The Capital Improvement Advisory Committee will work the Controller's Office to secure funding to complete priority retrofit projects.

POLICY 1.15

Preserve, consistent with life safety considerations, the architectural character of buildings and structures important to the unique visual image of San Francisco, and increase the likelihood that architecturally and historically valuable structures will survive future earthquakes.

Older buildings are among those most vulnerable to destruction or heavy damage from a large earthquake. They may not have the more recent engineering features that make buildings more resistant to ground shaking, and many of them are located in areas near the Bay and the historic Bay inlets that were among the earliest parts of the City to be settled, and have the softest soil. The part of the City most vulnerable to fire, the dense downtown area, also contains many historic structures. A major earthquake could result in an irreplaceable loss of the historic fabric of San Francisco. The City needs to achieve the related goals of increasing life safety and preserving these buildings for future generations by increasing their ability to withstand earthquake forces.

When new programs are being considered to abate hazards posed by existing buildings and structures, the likely impacts of those programs on historic buildings must be thoroughly investigated. The resulting programs should encourage the retrofit of historic buildings in ways that preserve their architectural design character while increasing life safety. When development concessions, transfers of development rights or City funds are granted to promote preservation of historic buildings, there should be reasonable measures taken to increase the building's chances of surviving future earthquakes.

IMPLEMENTATION 1.15

- The Department of Building Inspection will work with the Planning Department to write regulations that encourage the retrofitting of the city's architecturally and historically valuable, but vulnerable structures. The regulations should set incentives for retrofitting when renovations are undertaken.

Lifelines

San Francisco's lifelines are part of regional systems that extend well beyond the City's boundaries. They include city services such as water, sewer and power provision, communication networks such as phone, radio, television and Internet, and transportation infrastructure. State and private agencies operate some of the regional lifelines. Caltrans operates most of the regional transportation network, which is vulnerable to earthquake damage resulting in significant impacts on San Francisco.

Disruption is inevitable in the event of a disaster. Many areas may be without power, at least temporarily, during some portion of the first 72 hours or longer. Natural gas systems will probably experience breaks in major transmission lines and innumerable breaks in the local and individual systems, particularly in areas of poor soils. Telephone communications will be hampered by overloading resulting from many calls being placed and from phones knocked off hooks. Cellular networks may be overwhelmed, and depending on locations of damage, radio and

Internet capabilities may be limited. Damage to the City operated water system may result in many areas being dependent on tanker trucks to provide water. Sewage collection systems and sewage treatment facilities on poorer soils near the Bay are likely to suffer damage, resulting in the discharge of raw sewage into the Bay. Impacts to transportation systems will definitely include power outages, disabled traffic lights, and closed roads and bridges; and may also extend to transit networks including BART, bus and rail. However, with planning and mitigation, the extent of these disruptions can be minimized.

POLICY 1.16

Identify and replace vulnerable and critical service lifelines in high-risk areas.

In the case of a disaster, two of the most critical networks will be the City's water system and its sewer and sanitation lines. Upgrades are already underway: The Water Department and the Department of Public Works have ongoing programs to replace vulnerable water mains and sewers and to improve performance of the systems during earthquakes by including system segmentation, safety shut-off systems and redundant back-up systems or other methods of reducing damage and providing alternative sources of service. The San Francisco Public Utilities Commission is undertaking a Water System Improvement Program to strengthen the Hetch Hetchy water transmission system against earthquake damage, with completion anticipated by 2015. A connecting pipeline is currently under construction to connect the region's major water supply systems of the Hetch Hetchy, managed by the SFPUC, and the reservoirs in Calaveras, Amador and Alpine counties managed by the East Bay Municipal Utility District (EBMUD), which will enable water to be distributed from one Bay Area system to another in the case of failure. However, aging infrastructure in the City's sewer and sanitation system is a concern – beyond ailing pipes, the City's tunnels, pump stations and treatment plants need upgrades and repairs. The SF Sewer System Master Plan project currently underway at the PUC will eventually provide a detailed roadmap for these major improvements, and provide a plan for funding these improvements.

Other upgrades underway include Pacific Gas and Electric's seismic program replacing vulnerable gas lines, and Caltrans' bridge and highway retrofit programs. BART is in the midst of a system wide seismic upgrade project; the City should lobby for continued seismic retrofit and disaster-resistance measures on our regional transportation systems such as Caltrans and AC Transit. More upgrades are needed to PG&E's electric system to reduce the risk of service disruption to customers, including transmission improvements, replacement of vulnerable transformers, circuit breakers, and other at-risk components of the electric system. The City should require a specific plan detailing these improvements, and a timeline for their implementation.

IMPLEMENTATION 1.16

- The Department of Public Works and the San Francisco Water Department will continue to replace vulnerable water mains and sewers and to improve performance of the systems during earthquakes by including system segmentation, safety shut-off systems and redundant back-up systems.
- The San Francisco Public Utilities Commission, in conjunction with outside agencies such as the East Bay Municipal Utility District, will continue to implement the Water System Improvement Program at Hetchy Hetch.

- The Public Utilities Commission will complete the San Francisco Sewer System Master Plan which will prioritize major improvements and outline funding for their completion.
- Pacific Gas & Electric will create a detailed plan that outlines their efforts to continue to upgrade their electric system by replacing vulnerable transformers, circuit breakers, and by completing transmission improvements.

POLICY 1.17

Mitigate against damage to City systems and infrastructure through awareness of threats posed by new forms of hazards such as terrorism and communication failures.

While San Francisco does maintain some risk of terrorism, it is more likely at risk of deliberate acts intended to impact its service and communication networks. Often the objective of such acts is not destruction or death, but disturbance - a visible impact to the City's public services, economies, and social networks; and its sources can include vandals, mentally disturbed individuals, domestic terrorist groups, disgruntled residents, and past or present City employees. Critical facilities include the City's communication systems including its fiber-optic data network, and network data, its physical infrastructure such as its water and power systems, important public facilities upgrades to enhance security, through physical security measures, cyber protection measures, and tight security procedures and polices, should be made as technology and practices improve. Redundant networks will help ensure that incidental failures to not have grave impacts.

One such network is the Mayor's Emergency Telephone System (METS), which provides communication to key agencies and individuals in a disaster, linking City departments, fire and police stations with citywide call boxes in the case of an emergency. The METS telephone system is also connected to the State of California's satellite telephone system for direct communication with the Governor's Office of Emergency Services in Sacramento, as well as the emergency operations centers of surrounding counties. Another network is the 800 MHz trunked radio system that links the City's public safety departments and first responders including police and fire, which will help to avoid the kinds of communications failures that occurred during New York's September 11th tragedy.

IMPLEMENTATION 1.17

- The Department of Telecommunications and Information Services and the Department of Emergency Management will continue to coordinate with the San Francisco Fire Department and the San Francisco Police Department to ensure the city's communication infrastructure will perform in the face of a natural or manmade hazard.

POLICY 1.18

Increase communication capabilities in preparation for all phases of a disaster, and ensure communication abilities extend to hard-to-reach areas and special populations.

Strong communication systems are critical to a City's functioning in a hazard scenario. Communication will be necessary in the response phase immediately following a disaster, and continued conveyance of recovery efforts and their progress is an important aspect of the reconstruction period. The City should have redundant networks in place to communicate at all levels- to internal staff and emergency response personnel, to convey public information, to

ensure communication with special needs populations such as the hearing impaired or non-English speakers.

In addition, existing neighborhood organizations can develop local models that serve the same purpose. Development of a neighborhood communications plan can allow community members to keep in touch with – and keep track of – their neighbors, particularly the elderly or disabled that may be most in need of support during a time of emergency. Elements of this plan could include phone trees, text message trains, and the establishment of physical block captains to perform door-to-door checks if necessary.

The Department of Public Health’s Community Response Plan calls for neighborhood organizations and residents to have the means necessary to be inform policy makers about the damage and critical needs of each neighborhood throughout the city. By having a method for communicating at the neighborhood level, residents will be able to notify officials and seek out help in areas of the city that might be difficult to reach after a disaster.

IMPLEMENTATION 1.18

- The Department of Neighborhood Services shall work with neighborhoods to facilitate development of neighborhood communication plans.
- The Department of Emergency Services and Homeland Security shall complete the pilot Community Disaster Response project, and work with other districts, neighborhood groups and community organizations to extend its recommendations into action.

POLICY 1.19

Ensure plans are in place to support populations most at risk during breaks in lifelines.

As events have repeatedly shown, from the Loma Prieta earthquake in 1989 to Hurricane Katrina in 2005, the most vulnerable populations become even more vulnerable when their lives and communities are disrupted by disasters. Gaps in transit service can drastically impact immobile populations such as the elderly, poor and medically fragile, especially in terms of their access to medical care. Loss of electrical power can also be a problem for homebound, medically dependent individuals. Programs to notify officials, especially power providers, of these individual locations should be developed so that patients who may be unable to help themselves during a power outage or any other emergency can get the necessary support, including continuing medical care for chronic conditions, including delivery of prescription refills.

One such program is the Department of Public Health’s Disaster Registry Program (DRP), which lists persons who have registered to indicate they may need special assistance during or after a disaster, such as the elderly and persons with disabilities. This Disaster Registry will be provided to the Fire Department, volunteer Neighborhood Emergency Response Teams (NERT) and other rescue and assistance resources to check on registrants, and provide first aid if required.

IMPLEMENTATION 1.19

- The Department of Public Health shall continue to utilize the Disaster Registry Program by coordinating with the San Francisco Fire Department, the Department of Aging and Adult Services, and the Human Services Agency.

Hazardous Materials

Earthquake-initiated hazardous materials releases (EIHRs) are a high risk for industrialized, densely populated urban areas. San Francisco's industrial areas store and manufacture hazardous materials; and adjacent uses in close proximity means that more and more people live and work near industrial and commercial facilities that may process or store hazardous materials. An earthquake can be the trigger for concurrent hazmat releases within a small area, and earthquake aftershocks can make hazmat releases more difficult to stabilize, causing follow-up releases. A study of hazmat releases during the Northridge earthquake found that almost 20% of industrial facilities in the area discharged potentially damaging chemicals. Efforts to minimize risk of EIHRs and related accidents are critical aspect of everyday mitigation activities.

POLICY 1.20

Reduce hazards from gas fired appliances and gas lines.

A large earthquake is likely to result in fires at a time when the water systems may be disrupted and personnel needed to fight fires may be overtaxed. One of the sources of ignition will be gas leaks from appliances. As a result of its experience in the Northridge earthquake, Los Angeles now requires installation of seismic gas shut-off valves in new buildings, in renovations over \$10,000 and on transfer of ownership. The City should encourage or require, as done in Los Angeles, the installation of shut-off valves which are activated only by a major seismic shaking.

IMPLEMENTATION 1.20

- The Department of Building Inspection shall explore requiring buildings to be constructed with gas lines that have an automatic shut-off valve which is activated only by major seismic shaking.

POLICY 1.21

Enforce state and local codes that regulate the use, storage and transportation of hazardous materials in order to prevent, contain and effectively respond to accidental releases.

Homes, businesses and other facilities contain many materials that, if not properly handled, can result in risks to life, health, or the environment. During a disaster, especially an earthquake, such materials could be accidentally released. The materials that generally pose the greatest hazard during a disaster are those that can, in the form of gas, spread and affect large numbers of people; those that are highly flammable or explosive; and those that are highly toxic or are strong irritants. Large earthquakes lead to release of hazardous materials while reducing the ability of emergency personnel to respond. The continued requirement of business and facility emergency plans and local inspections as part of the City's permitting process for hazardous material storage is critical to reducing an overload on public emergency response resources during a major earthquake.

IMPLEMENTATION 1.21

- The Department of Public Health shall work with the Department of Building Inspection to educate and ensure that all relevant businesses and facilities throughout the city have permitted process for storing hazardous material.

POLICY 1.22

Educate public about hazardous materials procedures, including transport, storage and disposal

Hazardous materials include chemical, physical and biological agents. Accidents such as toxic releases from facilities and vehicles, fires and explosions caused by chemical releases, and oil spills in the Bay are not uncommon. FEMA has estimated that an average of 60,000 accidents involving chemicals occur in this country every year, and cause over 200 deaths and many injuries.

Several of the City's agencies provide businesses and residents with information about disposal of hazardous materials. The City's Fire Department is responsible for administering local safety regulations for business operating with hazardous materials, and is the first responder to chemical and hazardous spill accidents, and risk/hazard assessments, capability assessments, and detailed response planning. The San Francisco Department of Public Health (DPH) enforces State and San Francisco environmental health laws, including hazardous materials storage, issues hazardous materials use permits; investigates illicit discharge and disposal of hazardous materials. The SFPUC provides residents and businesses with information (through ads and website resources) on how to properly dispose of hazardous materials including waste oils such as motor oil.

IMPLEMENTATION 1.22

- The Public Utilities Commission, the Department of Public Health, and where appropriate, the PUC shall continue educational efforts regarding proper hazardous materials procedures.

POLICY 1.23

Prepare for medical emergencies and pandemics.

Emerging infectious diseases can pose as much of a natural disaster as other types. Many residents may become ill, leaving as much as one-third of the entire workforce at home, affecting local businesses because of absence and affecting the general public through its ripple effects. The impact to the City's economy, as well as its health, may be great.

San Francisco agencies are closely monitoring avian influenza and preparing for a pandemic in our region. The San Francisco City Department Avian/Pandemic Influenza Task Force coordinates planning for the City's response to a pandemic, and continuity of operations in its wake. The Health Department has completed a pandemic flu plan and has preparations in place to coordinate with local health providers to meet the needs of special populations, and the general public. They have developed health advisories for diagnosing, reporting, and treating patients, and the health department's disease control team has been trained to evaluate suspect cases.

Public information will be critical in the case of a pandemic. The City should ensure the public is kept well informed through the Joint Information Center. The City should also ensure systems are in place to ensure continuity of services as much as possible, following plans for emergency actions if necessary because of staff absence. The City should continue to maintain necessary emergency supplies, such as antiviral medication and protective equipment, and plans to deal with a possibly overwhelming need for emergency care and beds. While local hospitals have surge capacity plans to deal with patient overflows, things may become difficult in the case of a

pandemic, as medical staff may also be sick and unavailable. The City should also reach out to neighborhoods to educate them about possibilities, to enable them to develop localized plans for identifying the ill if the City's resources become inundated, and for assisting with sick individuals if hospital bed space is limited.

IMPLEMENTATION 1.23

- The Department of Public Health shall continue to maintain the pandemic flu plan as necessary, and keep abreast of potential or emerging health issues that may require additional planning.
- The Department of Public Health and the Mayor's Office of Neighborhood Services will work together to educate the public through the Joint Information Center, and shall utilize this Center to help neighborhoods develop localized plans for managing medical emergencies.

POLICY 1.24

Monitor emerging industries like bioscience, and ensure that state and local codes manage risks effectively.

The City of San Francisco has made it a goal to encourage bioscience industry in the City because of its economic development potential. The University of California San Francisco (UCSF) is a generator of life science and bioscience companies, and has made the Bay Area a center for the industry, and the number of companies located in San Francisco is expected to continue to grow.

Many bioscience firms contain laboratories which handle biological materials, which may generate radioactive or otherwise hazardous materials and waste. Because of this, bioscience and biotechnology facilities are governed by a strict set of federal and state regulations. Bioscience firms in San Francisco are subject to regulation by the San Francisco Department of Public Health, and are required to generate Hazardous Materials Business Plans including storage and secondary containment policies; Emergency Response Plans; and training plans to educate staff about handling and disposal. Currently, state and federal regulations seem to be sufficient to govern bioscience activities, as no local jurisdiction in the state has yet adopted health and safety controls beyond those requirements.

One particular point about the bioscience industry is that it is likely to change over time with advances in research; thus functions of the firms located in San Francisco may shift in the future. And as noted previously, state and national-level codes may lag behind technology advances. As bioscience grows, the City should monitor the industry to ensure its current safety regulations continue to be applicable to bioscience facilities. In addition, the City should encourage performance-based design and engineering technologies at a high level of performance to protect the safety of critical bioengineering research projects, particularly if facilities have the potential to be of interest with regards to bioterrorism.

IMPLEMENTATION 1.24

- The Department of Public Health will continue to work with private companies to create Hazardous Materials Business Plans, Emergency Response Plans, and training plans in order to ensure that all biochemical companies within the city are capable of working with and disposing of hazardous materials.
- The Department of Public Health will continue to stay abreast of the most up to date methods, beyond the state and national standards, of disposing of hazardous materials in order to protect San Francisco citizens. One source for such standards would be the US

EPA's Water Sentinel Executive Committee., which has created a state of the art "Bio-Sensor On-line Water Monitoring and Response System".

2. EMERGENCY PREPAREDNESS

OBJECTIVE 2

BE PREPARED FOR THE ONSET OF DISASTER BY PROVIDING PUBLIC EDUCATION AND TRAINING ABOUT EARTHQUAKES AND OTHER NATURAL AND MAN-MADE DISASTERS, BY READYING THE CITY'S INFRASTRUCTURE, AND BY ENSURING THE NECESSARY COORDINATION IS IN PLACE FOR A READY RESPONSE.

The City must be prepared to respond quickly and effectively in the case of a disaster. In order to meet the fundamental needs of its citizens after a disaster, the City must have plans in place. Response activities must be prepared in advance, and the coordination necessary to execute them must be in place for rapid realization.

In addition to readying its own agencies and departments, the City must ensure its residents are aware and prepared for the possibility of disaster. State and local emergency response offices advise people to be prepared to be self sufficient for 72 hours after a large earthquake. Achieving preparedness is even more critical for vulnerable populations, including the elderly and the disabled, and those in geographical areas and building types that are more vulnerable to earthquake damage.

Emergency Awareness And Training

POLICY 2.1

Promote greater public awareness of disaster risks, personal and business risk reduction, and personal and neighborhood emergency response.

People and organizations that are well informed about possible disasters can take private and effective measures to reduce their vulnerability. They can also increase their effectiveness in responding after a disaster and helping others when public agencies are overwhelmed. Several of the City's agencies, including the Department of Emergency Management, the Fire Department, the Police Department, the Department of Public Works, and the Department of Building Inspection provide information to the general public on what to do in a disaster. The City's 72hours.org campaign has been successful in raising public awareness about personal steps to take in advance of an emergency. The Department of Building Inspection maintains a list of earthquake information, including information about PG&E, in its public reception and on its website.

Information accessibility can, however, be increased beyond these sources, especially in order to reach populations who may not be familiar with the City system nor are frequent visitors to City buildings. Materials should be placed in everyday materials like newspapers, alternative venues such as social clubs, community facilities or service agencies, and distributed via mobile sources at gatherings such as fairs and festivals in the City. Information distributed should be available in large print and on audio cassette for the visually impaired, as well as in a variety of non-English languages.

IMPLEMENTATION 2.1

- The Department of Emergency Management, the Fire Department, the Police Department, the Department of Public Works, and the Department of Public Health will continue to educate the public about how to prepare for and react after a disaster through the 72hours.org campaign.
- The Mayor's Office of Neighborhood Services shall advise other City agencies to ensure efficient distribution of emergency materials, particularly to non-English speaking or otherwise isolated populations.

POLICY 2.2

Encourage businesses and homeowners to evaluate their earthquake risks.

Many businesses and residents hold a misguided perception that federal and state sources will provide financial assistance after a disaster. But the federal aid provided in a declared disaster does not protect individual homeowners. And when a major disaster hits an entire area, local governments are often unable to step up as well, being strapped simply to provide the funds necessary to repair major public infrastructure and buildings.

Most residents of San Francisco should be aware that standard homeowner and tenant insurance policies do not cover losses that result from earthquakes or other natural disasters, as most policies exclude "acts of God". Instead, California homeowners are entitled to purchase earthquake coverage at the time they purchase standard homeowner policy and every other year thereafter. Yet because the insurance is so costly, few do – a report issued at the drafting of this Element found that only 11 to 12 percent of recent insurance packages included earthquake coverage. The California Earthquake Authority (CEA) recently approved an average 22 percent rate cut which went into effect July 1, 2006. But more encouragement is necessary, and the City should work with the state's insurance commissioner to encourage purchase by increasing information about and access to, earthquake insurance. A communications role for TTX should be created in order to promote existing State incentives. Locally, there are other strategies the City government can pursue to support the purchase of earthquake insurance, such as or providing tax incentives or supporting interest rate reductions on mortgages where earthquake insurance is purchased.

Earthquake insurance is, however, just one more method of mitigation, and it may not be for everyone. The most important thing the City can do is encourage residents and businesses to evaluate their own risk and the repercussions they might face from earthquake damage. Whether through a formal risk assessment, which businesses may undertake through a qualified consultant, or simply through a personal assessment that evaluates the potential for earthquake damage, property owners should consider the full range of methods of decreasing their risk, and pursue the strategy that works best for them.

IMPLEMENTATION 2.2

- The City Assessor shall work with the Mayor's Office of Neighborhood Services, the Mayor's Office of Workforce Development, and the State of California's Insurance Officer to provide information about earthquake insurance.
- The City Treasurer shall explore the potential for provided tax incentives or reducing interest rates on mortgages where earthquake insurance is purchased.

POLICY 2.3

Provide on-going disaster preparedness and hazard awareness training to all City employees and other responding agencies.

Under state law, all public employees are designated Disaster Service Workers. At any time during a catastrophic event, which places life or property in jeopardy, City employees could be assigned to any disaster service activity that promotes the protection of public health and safety. The Department of Emergency Management and the Department of Human Resources have been working together to develop and implement a comprehensive Disaster Service Worker Program. DEM recently conducted an optional introductory one-hour Disaster Service Worker training. The City should continue this training program and expand it to mandatory programs, so that all service workers can be trained in potential categories of risk. The City should also continue to hold multi-agency drills on a regular basis to test and refine emergency plans.

In addition to responding to the emergency, one of the post-disaster tasks of City agencies will be the resumption of normal public services as quickly as possible. City workers will be more effective emergency responders, will be able to provide necessary public service, and will be better equipped to aid in the recovery if they are not, themselves, victims of the disaster.

IMPLEMENTATION 2.3

- The Department of Emergency Management and the Department of Human Resources will continue to develop and implement a comprehensive Disaster Service Worker Program. These Departments will also expand its training to all City workers.
- The Department of Emergency Management shall continue to hold multi-agency drills on a regular basis.

POLICY 2.4

Bolster the Department of Emergency Management's role as the City's provider of emergency planning and communication, and prioritize its actions to meet the needs of San Francisco.

The Department of Emergency Management has responsibility for developing the City's Emergency Operations Plan, supporting the coordination of the response agencies, conducting training exercises, coordinating activities with regional, State and federal agencies, and maintaining the Emergency Operations Center. This agency must be maintained at an appropriate level, with sufficient personnel and resources to carry out these tasks.

The agency also manages Homeland Security Grants disbursed by the federal government. In recent years San Francisco has been the recipient of a significant amount of homeland security dollars, most of which were targeted for urban centers. In the future, DEM should work with the state to improve its homeland security spending, to ensure that grant money can be effectively utilized and will not revert back to the federal government.

IMPLEMENTATION 2.4

- The Department of Emergency Management will continue to coordinate response agencies, training exercises, facilitate intergovernmental emergency response, and maintain the Emergency Operations Center.
- The Department of Emergency Management shall work with the State of California to ensure that Federal Homeland Security dollars are spent within the City.

POLICY 2.5

Maintain a comprehensive, current Emergency Operations Plan, in compliance with applicable state and federal regulations, to guide the response to disasters.

The Emergency Operations Plan ensures that the roles of City Agencies and others are well defined. Part 1 of the Emergency Operations Plan, which directs City agencies about emergency operations, was most recently updated in 2005. Part 2 of the EOP was under development at the time of drafting, and contains information to be used by the Emergency Command Center in its response activities. The EOP will also eventually contain a series of annexes related to specific hazards and to functions such as Care and Shelter, Evacuation and Volunteer Management. A Plan Enhancement, adopted in December 2006, supplements the Emergency Operations Plan (EOP) with catastrophic-earthquake specific response planning, input from all city departments, and data gathered from past urban earthquakes around the world. Periodic exercises based on the directives of this Emergency Operations Plan should be implemented to sharpen the skills and interest of all those involved in response.

IMPLEMENTATION 2.5

- The Department of Emergency Management will continue to draft and implement the Emergency Operations Plan. Where needed, specific annexes to the Plan should be added to address specific reactions to particular disaster situations.
- The Department of Emergency Management will continue to conduct periodic emergency exercises based on the Emergency Operations Plan.

POLICY 2.6

Create a consolidated website linking all of the City's disaster-related information for the general public.

Just as the responsibilities for different disaster planning programs and actions is distributed among many agencies and departments within the City, the related information about those programs and operations is dispersed. Much information is housed within the agencies responsible for their development, and it can be difficult for the layperson to secure all the information that exists.

The City should utilize technology to redress this issue – a simple solution would be to bring together all of the varied information that exists into one website. This site should contain links to hazard maps of geologic hazards and soil conditions; to the City's adopted emergency response plans and other related plans and documents; links to programs such as BORP and NERT; to programs for property owners, incentives and other action items; and to information about emergency services and locations. It should map relevant public information such as drinking areas, evacuation routes, emergency transport pick-up locations and locations of Public Information Centers to be set up in an emergency.

IMPLEMENTATION 2.6

- The Department of Technology and Information Services shall work with the Department of Emergency Management and the Department of Public Health to create a central website for all City disaster related information.

Water and Supplies

POLICY 2.7

Continue to expand the city's fire prevention and fire fighting capability with sufficient personnel and training. Assure the provision of adequate water for fighting fires.

Post-earthquake fires are part of the earthquake risk San Francisco faces. Huge numbers of structures were lost in the 1906 earthquake, not due to the quake itself, but because of the spreading fires that were difficult to battle in the aftermath of the quake. Fires continue to be a great threat, particularly in densely developed areas.

The supplemental water supply systems including the Auxiliary Water Supply System, the Portable Water Supply System, cisterns, Bay water suction devices, and fire boats have been extended and strengthened since the Loma Prieta earthquake. Staffing and equipment needs of the Fire Department must also be foreseen in advance, and met.

IMPLEMENTATION 2.7

- The San Francisco Fire Department will continue to work with the Board of Supervisors to ensure adequate funding for staffing and equipment needs necessary for disaster situations.

POLICY 2.8

Ensure water is available for Emergency Drinking

In February 2005, the SFPUC completed an extensive Emergency Drinking Water Plan, and recent updates ensure that the region/state's water resources would be available to San Francisco if/when needed.

The plan sets forth procedures for immediate provision of critical drinking water to the City if regional and/or local water service is disrupted. The Plan locates emergency water distribution sites, and sets forth priority routes for the deliverance of emergency drinking water. The SFPUC has created detailed maps to help residents locate their neighborhood emergency drinking water hydrant location, shown here on Map 7.

If San Francisco's in-City reservoirs fail, or if the water shortage is prolonged, the City should pursue strategies toward alternative local water sources, such as Crystal Springs and Lake Merced. The City should also continue its upgrades to local wells that can serve as emergency potable water supplies - SFPUC is in the process of upgrading the San Francisco Zoo Well and is investigating the upgrade of an additional existing well in Golden Gate Park.

MAP 7 - Emergency Drinking Map

IMPLEMENTATION 2.8

- The San Francisco Public Utilities Commission will continue to implement the recommendations included in the Emergency Drinking Water Plan to prepare for a disaster situation.
- The San Francisco Public Utilities Commission shall pursue alternative forms of water services should a disaster make distribution through traditional challenges impossible.
- The San Francisco Public Utilities Commission will continue to upgrade its local wells.

POLICY 2.9

Develop agreements with private facilities to ensure immediate supply needs can be met.

Supplies that may be critical and in short supply after a disaster include food, water, medical supplies. Hospitals and service providers may also have difficulty in obtaining replacement equipment and medication. The City should coordinate agreements with private facilities such as hospitals and warehouses to ensure that reasonable quantities of these necessities can be made available to the City and its residents in case of a disaster. The City should also maintain its up-to-date list of rental agreements, for use of temporary supplies and facilities should they be necessary.

IMPLEMENTATION 2.9

- The Department of Emergency Management shall coordinate with the General Service Administration and the Department of Public Health to create agreements with private suppliers in the event of a disaster.
- The General Service Administration and the City Attorney's Office shall review the City's rentals agreements for use of temporary supplies and facilities.

POLICY 2.10

Develop a Debris Removal Plan.

The City's Emergency Operations Plan includes a response strategy, and dictates the creation of a Debris Removal Plan by DEM's Construction & Engineering Branch within a week of the disaster. However, having much of this plan mapped out in advance will speed up its execution. Designating appropriate temporary and permanent disposal sites as part of this plan will be critical for long-term land-use planning.

Post-disaster, the City should aim to divert as much waste as possible from landfills through reuse and recycling. All vegetative debris should be composted, or burned; metals can be recycled; other wastes should be separated and reused or recycled wherever possible. Recycling programs should follow the City's recycling program already in place, so as not to require new permits or other legal permission to be developed. The City should develop clear guidelines to direct businesses and residents as they deal with their own debris and trash removal after the disaster.

IMPLEMENTATION 2.10

- The Department of Emergency Response shall create and specifically outline a Debris Removal Plan prior to a disaster occurrence.
- The Department of Emergency Management shall work with the Department of the Environment, the Department of Public Health, the Department of Public Works, and the Department of Public Health to develop guidelines for private residences and businesses trash and debris removal after a disaster.

Evacuation and Access Routes

POLICY 2.11

Ensure the City's designated system of emergency access routes is coordinated with regional activities for both emergency operations and evacuation.

After a large earthquake or other disaster, it is likely that many streets will be impassible. This will make fire fighting and other emergency response actions more difficult, hinder the movement of residents, and interfere with debris removal and other short-term recovery activities. In order to support post disaster transportation movement, the Department of Public Works has developed a set of priority routes for opening during an emergency or disaster. These routes are shown in Map 8. These routes include routes which connect fire and police stations, hospitals, and other critical facilities; routes to emergency drinking water distribution sites and City shelters; and routes to staging areas for Disaster Service work around the city. These routes enable the necessary clearance width for emergency vehicles and support trucks, and have been prioritized for debris clearance immediately following a disaster.

The City should ensure that the regional sequence of clearance activities is coordinated to connect with these priority routes, and that the route openings are well timed to synch with the opening of bridges and regional highways. This coordination can be directed using information from the Transportation Management Center (TMC) staffed by Caltrans, the California Highway Patrol and the MTC, and specifically from its Emergency Resource Center (ERC) which was created for procedural disaster management.

MAP 8 - Emergency Priority Routes (Department of Public Works, December 2005)

IMPLEMENTATION 2.11

- The Department of Public Works will continue to review and will be ready to implement priority routes for services during an emergency.
- The Department of Public Works shall coordinate with Transportation Management Center to ensure that the clearance of waste will be possible through the priority routes.

POLICY 2.12

Utilize the City's and the region's bus and rail transit network to facilitate response and recovery during and after a disaster.

Dependence on cars will not work well in a state of emergency. San Francisco's vehicular network is limited by bridges and freeways with little redundancy. Damage caused by the event to roadway networks, security considerations and traffic control may restrict private automobile use for months after the event. And transit is a necessary part of the Bay Area's movement. According to the 2000 US Census, 12% of San Francisco households did not own a vehicle, which, based on recent estimates (771,121 residents as of 2006), translates to well over 90,000 residents that rely on the transit system for their travel needs. Many San Francisco workers living outside of the City rely on transit to get to their jobs, making regional transit a pivotal part of our local economy. The transit network will be a critical component of response during a disaster.

Transit should be used in emergency situations to move emergency workers to sites, to deliver equipment, and for communications. Evacuation plans should incorporate public transportation to efficiently evacuate residents who do not have access to cars, and include clear methods to convey information about evacuation possibilities in advance and at the time of disaster. Immediately following a disaster, the City should utilize its transit network to restore the City's mobility – to help bring significant numbers of evacuees back to their neighborhoods, to move daily workers to jobs, and to resume day-to-day life, as soon as possible. Coordinated transit, ferry and bus services can be used to provide long-range links across counties. Temporary

transportation improvements such as limited stop buses, bus-only routes and the addition of HOV lanes may help relieve overtaxed freeway segments. And clear conveyance of route information and service maps can help connect riders to services.

The Bay Area region, under the leadership of a task force that included the State Office of Emergency Services (OES), Caltrans, the Metropolitan Transportation Commission (MTC) and Bay Area transportation agencies, has developed a Trans Response Plan (TRP). This TRP, adopted in 1997, sets out a framework for a coordinated, multimodal and timely response by Bay Area transportation providers to a major earthquake or other significant emergency in the region. The resulting procedures are tested on an annual basis through tabletop and functional exercises. The procedures have also been integrated into individual operator emergency plans so that the regional response can be automatically invoked, if needed.

San Francisco, in cooperation with MTC, also has two projects underway which will address immediate emergency transportation needs, and the day-to-day transportation routes that will need to be reinstated in order for the region's activities to resume. The Transportation Coordination and Recovery Plan (TCRP), being developed as part of the RECP, focuses on 'emergency transportation' - evacuations and the movement of emergency workers. The Regional Transportation Emergency Management Plan (RTEMP) addresses the movement needs of the general public following a major disaster. Together, the two plans are expected to result in a single, unified program for direction of the region's transportation resources.

IMPLEMENTATION 2.12

- The San Francisco County Transportation Authority and The Municipal Transportation Agency will continue to work on the Trans Response Plan.
- The San Francisco County Transportation Authority will work with the Metropolitan Transportation Commission to complete and implement the Transportation Coordination and Recovery Plan and the Regional Transportation Emergency Management Plan.

POLICY 2.13

Continue coordination with water transit agencies, ferries and private boat operators to facilitate water transportation as emergency transport.

Water transit has the potential to provide vital transportation support in response to a natural or man-made disaster. Ferries can play a particular role in moving people and goods after a disaster because of their flexibility and size. Smaller commercial boats can supplement the role of ferries in evacuating civilians, and can also provide transit to emergency personnel and equipment in reaching disaster sites.

For disaster relief to be successful, vessels must be quickly deployed where most needed, and the response needs to be coordinated with land transit providers to get evacuees to/from the shoreline. The Trans Response Plan (TRP) includes a Regional Maritime Contingency Plan, which aims to establish this coordination through its guidelines and procedures for utilizing the Bay's water transit system in the recovery phase of a major disaster.

The Water Transit Authority is working to implement its Regional Ferry Plan, which adds eight new routes to the existing six, and adds a number of new boats and terminals. The recently passed state infrastructure bond provides funding for these disaster response transportation improvements. The increase in capacity gained by these new improvements would allow the Bay Areas ferries to carry over 20,000 trips per hour during a response to disaster, which is almost the evacuation capacity provided during the Loma Prieta by ferries. The City should support these

plans, and should ensure coordination is in place so these new boats and facilities can be added to the existing fleet designated by the Trans Response Plan. The City should also coordinate with private operators, with the aim of establishing emergency aid agreements for the boats as well as the operators in the case of need.

IMPLEMENTATION 2.13

- The San Francisco County Transportation Authority shall work with the Municipal Transportation Agency to prepare to implement the Trans Response Plan's Regional Maritime Contingency Plan, once complete.
- The Water Transit Authority will continue efforts to implement its Regional Ferry Plan.
- The San Francisco County Transportation Authority, the General Service Administration and the City Attorney's Office shall work with private ferry operators establish mutual aid agreements.

Internal Coordination

The City agencies with lead roles during the response phase of a natural disaster, a catastrophic hazardous waste incident, a large-scale crime or terrorist attack, are the same agencies that have a day-to-day responsibility for responding to fires, accidents, crimes or other emergencies: the Fire Department, the Department of Public Health, the Police Department, the Department of Public Works, and others to a lesser extent and as needed. However, in a major disaster, the needs for assistance are greater than the resources of the usual responders; in fact this could be said to be the definition of a disaster. During and after a major disaster additional organizations, including City agencies, other public safety agencies, and private organizations, will be called into service. Therefore, a significantly heightened level of coordination, and different type of organization, is necessary. The Department of Emergency Management is responsible for this coordination. The recently updated Emergency Operations Plan provides the blueprint for coordination among city responders, other governmental agencies, non-governmental agencies involved in response (such as the American Red Cross), and the public during a major disaster of any kind.

POLICY 2.14

Support the recently developed Emergency Command Center, and ensure alternative command centers in the case of an emergency.

The City completed an Emergency Command Center (ECC) in 1999 to serve as a secure well-equipped location for centralized communications and direction. This center houses the Department of Emergency Management, including its Division of Emergency Communication; and consolidates 911 calls and Fire, Police and Medical Dispatch. It is managed by the Department of Emergency Management.

However, emergency centers may be destroyed or rendered inaccessible in a major catastrophe. The City should prepare for this possibility in advance, by ensuring duplication of information and systems in multiple locations, by identifying alternative sites for temporary ECCs, and by establishing a mobile command center with the necessary technology and information infrastructure for flexible operations.

IMPLEMENTATION 2.14

- The Department of Emergency Management shall identify potential sites for additional temporary and permanent ECCs.
- The Department of Emergency Management shall take steps to establish a mobile command center that will take the ECC's services and systems to locations throughout the city as needed in the event of a disaster.

POLICY 2.15

Utilize advancing technology to enhance communication capabilities in preparation for all phases of a disaster, particularly in the high-contact period immediately following a disaster.

Reducing the impacts of natural and technological hazards requires extraordinary cooperation and coordination among City departments, and between departments and other governments and non-government agencies. During the immediate response period, the City will need to determine the extent and location of damage, marshal resources for response, provide information to the public, and provide critically needed services to the affected populations. The Division of Emergency Communications of DEM maintains responsibility for coordinating communication among emergency responders, private partners and citizens in San Francisco to ensure an effective and successful emergency operations system. Reporting to DEM, and assisting in preparation of departmental emergency response plans, are key staff of each department.

The City currently uses technologies such as geographic information systems and global positioning to allow wide access to everyday information, and is extending these networks to enhance disaster communication. San Francisco has developed an emergency text-message alerting system, AlertSF, which delivers disaster notifications to registered users, and allows users to access neighborhood specific information. It has reestablished the old World War II sirens to provide alerts to residents, and is further upgrading the system to broadcast voice instructions for responding to an emergency. Also under development is the 311 City phone service, where callers will get assistance from an agent 24 hours a day, seven days a week, and will provide real-time instructions during an actual emergency. The service is expected to launch in March 2007.

Continuing advances in technology and information systems will enable information to be more widely, quickly, and reliably accessible. Under the direction of OES, the City should keep abreast of these advances and utilize them to bolster the existing local information network. DTIS and ECD should explore opportunities to use technology to keep San Franciscans informed during an emergency, using the full potential of the Internet as a primary communications medium. The City should ensure redundant networks exist to communicate at all levels- to internal staff and emergency response personnel, to convey public information, to ensure communication with special needs populations such as the hearing impaired or non-English speakers. The City should also explore work to improve inter-departmental communications during a disaster. San Francisco's police, fire and most other city departments are on the same radio system, but other agencies such as the city's Municipal Railway and the California Highway Patrol use separate systems. And public safety agencies throughout the Bay Area use a varied network of radio frequencies and equipment, making direct intercommunication difficult. The City should work internally to coordinate the radio frequencies used for its various agencies to aid smoother communications during a disaster. The City should also coordinate with other municipalities to coordinate frequencies across the Bay Area, perhaps using a model similar to that used by the San Diego area, where a regional radio communications network links all of the areas public safety agencies.

IMPLEMENTATION 2.15

- The Department of Technological and Informational Technology shall work with the Department of Emergency Management to maintain the most up to date information systems for disaster response.
- The Department of Emergency Management should lobby for coordinated radio frequencies for emergency response agencies.

POLICY 2.16

Plan to address security issues that may arise post-disaster, and balance these issues with the other demands that will be placed on public safety personnel as emergency response providers.

Community violence, including looting and rioting, have recently surfaced as forces to contend with in the aftermath of disaster. Desperate situations, such as being without food, or being stranded with no expectation of rescue, can occur in the face of disaster, and such desperation can lead to rash or risky personal actions. However, many disaster researchers regard looting as rare in disasters in developed societies. Experts state that perceptions of widespread community violence, which occurred most recently in Hurricane Katrina, are often based on misinformation, and cite human tendency to misread crowds as more malevolent than they really are.

Whether violent activities such as looting do actually occur, fear of these activities is definite. Past disasters have shown people may be unwilling to evacuate because they fear the loss of their property. The City should make efforts to manage fears of looting or other criminal activity through a visible police presence across the City and assure residents their property will be protected by police officers who will remain in the City after the evacuation. The City should also maintain the ability to dispatch special mobile forces if needed to maintain peace post-disaster.

Police will be needed to deal with issues beyond looting, such as search-and-rescue activities, directing traffic or dealing with other emergency duties. Police response must be coordinated so that it can respond to both social and physical needs in the face of disaster. Law enforcement agencies, including the San Francisco Police Department and the Sheriff's Department, District Attorney's Office, agency forces such as San Francisco Municipal Railway Police Department, and institutional agencies such as the San Francisco Community College District Police Department, should work to ensure better organization among agencies, so that their magnitude can be leveraged towards the many services that will be required. The City should also maintain relationships with State and federal level peacekeepers that may be needed in an emergency, such as the Coast Guard and National Guard. Finally, security forces should establish communication with Disaster Service Workers to mobilize civilians if necessary to support their efforts.

IMPLEMENTATION 2.16

- The San Francisco Police Department shall create a plan to outline potential dispatch needs in the face of a disaster. The plan will address potential looting, search and rescue activities, and directing traffic, as well as other emergency duties.
- The San Francisco Police Department shall coordinate the above plan with other emergency responders and surrounding municipal, state, and federal police and peacekeeping agencies in order to coordinate disaster response needs.

POLICY 2.17

Ensure the City's plan for medical response is coordinated with its privately owned hospitals.

The Department of Public Health is the City's lead health response agency in the event of a natural disaster or terrorist attack that led to a major health emergency. They should continue efforts to coordinate with Bay Area private hospitals, community based clinics and CBO's in the Bay Area.

The Community Disaster Response program s exploring a "hub" model where Community Care clinics provide more localized, non-critical care in order to free hospitals towards urgent medical care needs. These clinics, though, are not evenly distributed throughout the City and their ability to serve neighborhoods varies by location. The Department should continue efforts to bolster these Community Care clinics, particularly for use post-disaster.

IMPLEMENTATION 2.17

- The Department of Public Health shall coordinate emergency response plans internally and with external health providers to ensure comprehensive care during, and after a disaster.

POLICY 2.18

Ensure all Response Plans are coordinated with the Disaster Council.

The San Francisco Disaster Council is the City's central body for emergency planning, and has been accredited by the California Emergency Council. It is chaired by the Mayor, and is comprised of the Director of Emergency Services, key City officials, and appointees from civic, business, labor, veterans, professional, and other organizations having official emergency responsibilities, including the Red Cross. The Council reviews the efforts of the Emergency Operations Planning task force, and recommends emergency actions such as mutual- aid plans and agreements and such ordinances and resolutions and rules and regulations for adoption by the Board of Supervisors.

In order to coordinate the actions of the various agencies throughout the City, the Disaster Council should serve as a central repository for all mitigation, preparedness, and response and recovery activities. The Disaster Council, through its contact with the State Emergency Council and the several local disaster councils within this metropolitan area, can ensure that the work of the City is coordinated with those of the surrounding region. All actions recommended y this Safety Element, and developed in other efforts or documents, should be brought forth to the Disaster Council for their review and approval.

IMPLEMENTATION 2.18

- The San Francisco Disaster Council will utilize the approved Community Safety Element as a guide in coordinating the recommendations within the element with those in other disaster preparedness plans.

POLICY 2.19

Seek funding for preparedness projects.

A significant amount of preparedness funding exists at the state and federal level. Several recent state propositions provide funding for specific disaster mitigation projects. The Disaster Preparedness and Flood Prevention Bond Act funds storm water flood management projects throughout California. The Strategic Growth Plan education proposal authorizes state dollars for seismic safety improvements to schools and education facilities. In addition, the Department of Homeland Security has lately been a large source of funding for preparedness and mitigation projects.

Since so much of the available funding is disbursed beyond the local level, access to these funds requires coordination for project proposals. As noted above, the Department of Emergency Management is responsible for coordination of preparedness funds. Securing these grant dollars, and effective utilization of them, should remain a priority in coming years. The City should explore the creation of a grant officer specifically tasked with coordinating with state and federal grant offices, as well as designate internal coordinators to work with each individual City department as they navigate applications and grant requirements.

IMPLEMENTATION 2.19

- The Department of Emergency Management will continue to be the City's coordinating department of all disaster preparedness funding from all sources.
- The Department of Emergency Management shall explore creation of a new grant officer position that will be responsible for coordinating internal agency disaster funding as well as state and federal grant opportunities.

External Coordination

Being prepared to address the impacts of natural and technological hazards requires extraordinary cooperation and coordination beyond the City itself. San Francisco is dependent on regional systems for transportation, evacuation, supply of goods and other necessities. In order to be effective in meeting needs, the City will need to have strong working relationships with regional and local governments and agencies.

It is also important to remember that while local governments bear the responsibility of being the first responders to any emergency or disaster, our interaction with our state and federal partners is critical to the safety of our citizens and to rapid recovery from a major disaster. Like any independent municipality, San Francisco depends on these partners for pre-planning, emergency response, and post-disaster recovery.

POLICY 2.20

Enhance communications with nearby jurisdictions

Local Emergency Planning Committees (LEPCs) are regional entities set up to enhance coordination among adjacent municipalities. LEPCs are comprised of representatives from local government, the fire service, law enforcement, the local community, and industry; and are intended to facilitate the coordination and flow of mutual aid. OES Coastal Regional Branch-Mutual Aid Region 2 is the LEPC for the San Francisco Bay Area and nearby counties.

The City of San Francisco is acting as the lead agency to develop a Regional Emergency Coordination Plan (RECP) to help the Coastal Region OES address gaps in regional emergency plans. The plan will detail how the communities which make up our LECP will work together on evacuation, housing and transportation of displaced residents. It also will outline how medical professionals will interact and how to cope with threats to the water supply, among other issues. Once complete, the City should utilize this plan as a basis for emergency operations issues that transcend City boundaries, such as emergency transportation, evacuation and the movement of emergency workers.

IMPLEMENTATION 2.20

- The Department of Emergency Management will coordinate with other City agencies and surrounding municipalities in the Local Emergency Planning Committee to complete and adopt the Regional Emergency Coordination Plan.

POLICY 2.21

Develop and maintain mutual aid agreements with local, regional and state governments as well as other relevant agencies.

Many state and local governments and private nonprofit organizations enter into mutual aid agreements to provide emergency assistance to each other in the event of disasters or other crises. The California Master Mutual Aid Agreement has been adopted by San Francisco, as well as most cities and counties in the state. This agreement creates a formal structure for giving and receiving assistance in emergency situations. The City should expand its network of mutual aid beyond local governments to include relevant agencies such as transit providers, utilities, volunteer agencies and professional organizations for groups like health workers and emergency managers. Numerous agencies and businesses may have resources – facilities, trained staff, transportation or equipment – that can be valuable in emergencies. The City should pursue Memorandums of Understanding or other contracts with any local agencies or businesses that can be identified as resources, including the Unified School District. Discipline-specific mutual aid agreements, such as those for public works, engineering, Emergency Managers Mutual Aid, or public information, may also be useful.

IMPLEMENTATION 2.21

- The Department of Emergency Management shall develop a list of potential emergency needs, and work with the City Attorney’s Office and the Office of Contract Administration to pursue expanding Mutual Aid Agreements or Memorandums of Understanding with local, regional, and state public agencies such as transit providers or school districts.

POLICY 2.22

Develop partnerships with private businesses, public service organizations and local nonprofits to meet disaster-time needs.

The City should seek opportunities to partner with private sector businesses and organizations where possible. For example, drug stores can be used to distribute medical supplies and pharmaceuticals during emergencies. Medical institutions and university health centers can be set up to provide medical treatment such as inoculations in the event of a chemical or biological emergency.

Private and community-based organizations can assist with recovery activities, and in the dissemination of disaster information. The American Red Cross, Habitat for Humanity and the Salvation Army, as well as numerous local groups, can be supportive partners in providing emergency shelter, food, clothing, and physical and mental health support. The City’s relationships with these agencies and organizations should be mutually supportive. Local services, particularly in lower-income areas, such as food banks, senior centers, child care centers, may be ill-prepared to cope with disaster. The City should assist in developing support networks for these organizations, providing them with employee response training, assisting them in securing insurance coverage and helping to develop contingency plans for their operations’ continuance post-disaster.

IMPLEMENTATION 2.22

- The Department of Emergency Management will work in partnership with the City Attorney's Office and the Office of Contract Administration to develop formal partnerships with businesses, public service organizations, and non-profits that offer products and services that will be needed after a disaster.

3. RESPONSE

OBJECTIVE 3: ESTABLISH STRATEGIES TO ADDRESS THE IMMEDIATE EFFECTS OF A DISASTER.

The first days after a major earthquake or other large disaster make up the response phase. Immediate response will focus on saving life and property damaged by the disaster. The City of San Francisco has a network of emergency response strategies in place which have been discussed above. The City's Emergency Operations Plan is the primary source which will direct the City's response in the case of a disaster, and describes specific responses to be undertaken by the emergency response agencies and other supporting City departments toward the recovery process, such as emergency building assessment and repairs, debris removal, and meeting the immediate needs of federal and state agencies for information. The City of San Francisco is also leading a Bay Area-wide planning effort to create a disaster plan for the nine county Bay Area plus Santa Cruz, which will detail how the counties will work together to respond to a disaster, including evacuation, housing and transportation.

Relief activities to provide aid for the population left in its wake will follow response activities. These include securing food and shelter for victims, and stabilization of day-to-day conditions for the area's remaining residents. Economic welfare, social networks, and emotional well being are as critical as the City's physical infrastructure to the City's long-term recovery.

POLICY 3.1

After and emergency, follow the mandates of the Emergency Operations Plan and Citywide Earthquake Response Plan

The Emergency Operations Plan directs the City's actions after a disaster, assigning responsibility to agencies and departments. Many of the immediate actions needed to begin the recovery process, such as debris removal, emergency building assessment and repairs, and meeting the immediate needs of federal and state agencies for information, are described in the Emergency Operations Plan. The Citywide Earthquake Response Plan supports this plan by providing response actions for the incident of an earthquake. Both plans should be used to guide all responsibilities and activities in the case of a disaster.

IMPLEMENTATION 3.1

- The Department of Emergency Management will maintain and continue to update the Emergency Operations Plan and the Earthquake Response Plan.

POLICY 3.2

Follow NIMS Procedures in declared emergency scenarios.

A major disaster will entail assistance from far beyond San Francisco's borders, involving the assistance of other Bay Area jurisdictions, the state of California and even the federal government. To coordinate this assistance, the federal government has developed a national approach to incident management, called the National Incident Management System (NIMS), to act as the common language and procedural guide bridging different entities.

NIMS was developed so responders from different jurisdictions and disciplines could talk to each other in a common language, and work together better to respond to natural disasters and emergencies, including acts of terrorism. NIMS uses a systems approach to integrate the best of existing processes and methods into a unified national framework for incident management. Its concepts and practices cover incident management; standard command and management structures; and emphasis on preparedness, mutual aid and resource management.

The City's various agencies, particularly those who are its first responders, are already familiar with the NIMS system, and utilizing its framework in the development of emergency response and other plans. The City should continue this practice, and ensure it is kept up-to-date with current NIMS practices. New approaches that will improve effectiveness are likely to result in refinement of the NIMS over time, so the City should maintain an awareness of any changes and incorporate them into its response planning and practices.

IMPLEMENTATION 3.2

- The Department of Emergency Management will coordinate with the San Francisco Fire Department, the Police Department, Emergency Medical Personnel, and other First Responder Departments to keep up to date on National Incident Management System practices.

POLICY 3.3

Have plans to accept, organize and utilize convergence workers.

Post-disaster, it is likely that the City will see an outpouring of citizens willing and wanting to help with recovery efforts. Mobilization and reinforcement of these resources will require significant management by City responders. If no system is in place to harness the potential provided by these spontaneous, or "convergent", volunteers, this resource will be lost.

The City should continue the effort currently underway with the Red Cross on a plan for organizing and mobilizing convergent volunteers. The Volunteer Centers of the Bay Area have developed a program the City should review as a model for managing disaster volunteers. The City may also want to consider a civilian program similar to the Disaster Service Worker program, which deputizes non-employees to provide similar service functions after a disaster. This program should set forth how to receive volunteers, assess their skills and experience, and match them to the tasks, and be designed to work in concert with the City's ongoing disaster service volunteer programs such as NERT. The City should also, as a part of this program, identify and establish a volunteer mobilization center as a meeting point to coordinate volunteer activity post-disaster.

IMPLEMENTATION 3.3

- The Department of Emergency Management will complete the planning effort currently underway with the Red Cross to coordinate volunteer efforts after a disaster.
- The Department of Emergency Management will follow the progress of the Bay Area Preparedness Initiative (BAPI), and adopt its findings to ensure a cooperative response capacity between the City and its nonprofit and philanthropic partners.
- The Department of Emergency Management will adopt and implement the directives that result from the Coordinated Assistance Network (SF CAN) to create response and recovery efforts that are coordinated with nonprofit and philanthropic partners.

- The Department of Emergency Management will designate and organize a volunteer mobilization center.
- The Department of Human Resources will work with the Department of Emergency Management to develop a volunteer civilian Disaster Service Worker program.

POLICY 3.4

Have vendors and contractors available to respond immediately after a disaster.

When a disaster strikes, there will be a run on needed goods and services, such as provision of shelter, food distribution, removal of solid waste, recycling and debris removal. One way to address the immediacy of need post-disaster is to make arrangements with local and regional contractors *before* disaster strikes. Pre-qualifying of contractors who can respond in emergency and who have equipment to handle the work is another solution for immediate response.

The Office of Contract Administration maintains an emergency list of supply vendors. The Office should work with other departments to understand the types of supplies that may be necessary in the case of a disaster and have contracting options readily available, including an up-to-date list of qualified contractors. The list should contain sufficient sources for the kinds of goods that will be most in demand after a disaster – tents, food, etc. As-needed contracts should be readily implementable to meet emergency need, and existing contracts and franchise agreements should be reviewed for their applicability in the case of a disaster.

DPW maintains a registry of construction-related contractors. This list can be a valuable resource after a disaster. The agency should ensure it is kept up-to-date, and that old or unavailable contractors are removed on an annual basis. The City should also explore methods that will enable small and local firms, including minority- and women-owned businesses, to take a more active role in the response and rebuilding process, it may be beneficial to develop a program to train and qualify local contractors for government-backed projects.

IMPLEMENTATION 3.4

- The Office of Contract Administration will work with City agencies to identify supply needs for each agency after a disaster. The Office will then coordinate those supply needs with emergency contracting options.
- The Office of Contract Administration will regularly review and update the emergency list of supply vendors to maintain its utility and accuracy. The Office should coordinate with the Mayor's Office of Economic Development to encourage partnerships with local or minority or women owned businesses.
- The Department of Public Works will maintain and continue to update the registry of construction-related contractors on an annual basis.

POLICY 3.5

Develop strategies for cooperating with the media.

Having a media communication strategy is an important component of responding to a disaster. Beyond communicating to local and regional residents, the media is the means by which the outside world understands what has happened. Media coverage leads to national, even global understanding, of a disaster and its impacts. Coverage can be a primary factor in attracting public

and private aid. It can also fuel demands for action, and stimulate public support for actions to prevent or mitigate disasters.

The Mayor's Office of Communication will direct all media responses, in cooperation with the Department of Emergency Management's joint information center, which will provide a centralized source for department information. The Mayor's Office's crisis communications plan should include strategies for openly and honestly dealing with the media. Procedures for disaster media relations should also ensure that the designated spokesperson – and in the case of a disaster, this may not be the usual media spokesperson - understands the depth of the disaster and the details of its impacts. Media kits should be prepared and ready for distribution as soon as possible.

There are frequently concerns about the negative impact of media coverage on a community post-disaster. Because of the nature of media, often stories can be overtaken by a focus on deaths and damage to property. Political leaders may be concerned about publicity's impact on tourism and outside investment, or fear that it could incite mass departure of business and residents. Even in the face of these fears, it is important that the City take a positive view of media operations, and cooperate with the media based on a policy of openness. Rather than restricting information, the City should work to present media organizations with a balance of information, about the kinds of public actions and safety measures that have succeeded well as those that have failed, so that coverage can go beyond simply accounting for totals of loss. A news story giving the amount of earthquake damage inflicted could just as easily include information about the number and types of structures that survived because of mitigation measures.

IMPLEMENTATION 3.5

- The Mayor's Office of Communication will work with the Department of Emergency Management to create a Crisis Communications Plan, and to identify key media relations staff with regards to a disaster.

POLICY 3.6

Develop a system to convey personalized information during and immediately after a disaster.

In addition to conveying general public information about the disaster to citizens and the outside world, the City will also need to respond to more personal inquiries by impacted residents. This can include questions about what services and aid is available, as well as inquiries about the location, health and welfare of relatives or other residents.

The City should plan for an information system composed of a series of local Public Information Centers intended to convey this more personalized information to the public. These centers should be located in accessible community locations such as libraries, but should also be sited away from the centers of emergency activity. These centers should be connected to receive up-to-date information from law enforcement agencies, other City departments, the school district, - HSA, public shelters, local hospitals, and the coroner, and should also be linked to regional centers in other parts of the Bay Area.. During a disaster, these regional information centers should be directly linked to consumers via the 311 City phone service.

IMPLEMENTATION 3.6

- The Department of Emergency Management will work with various public agencies, such as the Department of Public Health, and the School District to create multiple Public Information Centers throughout the city.

- San Francisco 3-1-1 Customer Service Center shall establish a direct connection to established Public Information Centers during a disaster.

POLICY 3.7

Establish centers to facilitate permits for repairs.

Rebuilding can be facilitated by increasing the points of access where permitting can occur. Satellite permitting centers that offer City services such as building permits, electrical, plumbing, and mechanical inspections can be one way to increase building owners' access to services in their own neighborhood, and can reduce the possibility of overload at the central permitting facilities at Planning and the Department of Building Inspection. These centers can be operated on a temporary basis, perhaps until a targeted number of buildings are brought back on line.

IMPLEMENTATION 3.7

- The Planning Department and the Department of Building Inspection shall work with the Department of Emergency Management to create a plan for satellite permitting centers, and shall review the possibility of coordinating such centers with Public Information Centers as described above.

POLICY 3.8

Work collaboratively with nonprofit partners to assist vulnerable populations during and immediately after a disaster and to ensure resumption of social services directly after a disaster.

In addition to disrupted infrastructure such as transit and transportation, power, water, gas and sewer, phone service, the City will also face disruptions to its social services at a time when they may be most needed. The City's most vulnerable populations, including seniors, shut-ins, disabled, institutionalized or incarcerated youth and adults, children who have been separated from their parents due to the disaster, and residents of single-room occupancy hotels and public housing, will be at risk of falling through the cracks. Hospitals and clinics may be damaged or overcrowded, schools and daycare centers will be closed, and families may be separated. Centers for special needs populations may be temporarily shut down, due to damage or unavailability of employees. Local services, particularly those meeting the needs of residents in lower-income areas, may be ill-prepared to cope.

The City should have continuity policies and plans in place for its municipally-run and municipally-funded services. One way of supporting their immediate resumption would be to establish a policy clarifying that for specified City employees, maintaining continuity of social service provision by carrying out their everyday positions is their primary role as disaster service workers. In advance of a disaster, processes should be established to ensure the continuity of payments to social service organizations under contract with the City.

The City is not, however, the only service provider that needs to plan for this inevitability. Nonprofit groups are key players in disaster response, providing food and shelter in the short term, and assisting in longer term recovery through health care and job placement. But in past disasters, lack of coordinated planning – between the City and among agencies - has resulted in gaps in aid or in redundant services. Therefore, the City should also assist local service providers, including mental health centers, substance abuse services, homeless shelters, community health centers, senior services and aids activities, so that they can resume services, to cope in a disaster. They can support religious and community organizations by providing them with employee

response training, insurance coverage, and encouraging development of contingency plans.

IMPLEMENTATION 3.8

- The Department of Emergency Services and Homeland Security shall work with City agencies such as the Department of Public Health, the Human Service Agency, the Department of Children, Youth & Families, the Juvenile Probation Department, and the Sheriff's Department to establish procedures that will enable local agencies to provide aid quickly and effectively to the most vulnerable.
- The Human Service Agency will work with nonprofit, faith-based and community agencies to develop a "framework for preparedness," so that City and outside service will continue to flow to populations in need.

POLICY 3.9

Support the efforts of the Controller's Office to ensure service continuation and financing of post-disaster.

The Controller's Office is the designated lead agency for the Finance and Administration Section of the Emergency Operations Plan, supported by the Department of Administrative Services and the Office of the Treasurer. These groups are tasked with ensuring employee payment and compensation, and with payment of contractor and vendor accounts, in the immediate response phase of a disaster. These elements will be critical to the continuing operation of City services.

In order to ensure continuation, the Controller's Office has programs underway to ensure that payroll continues to be processed for all City workers, implementing off- site payroll processing if needed; that employee compensation is resumed; that financial and accounting computer systems can recover and resume as soon as possible; and all payments, both to City workers and to outside vendors, are processed within a reasonable time.

The City should actively encourage the use of direct deposit by all City employees, and inform all employees of the potential loss of pay in the event of a disaster for those who do not use direct deposit. Additionally, the Controller's Office should work with City employees not currently using direct deposit in order to provide back up account information that can be switched to direct deposit in the event of a disaster. The City should assist those employees without access to a bank account to open an account with a bank or credit union.

The Controller's Office will also direct the financial policies established to guide the City in its response to an emergency, particularly as it relates to personnel time, contracts, and equipment and supplies relating to the emergency. As a part of this responsibility, the Office should work with other City agencies to determine need for contracts with vendors who do not already occur on existing approved vendor lists; and set up these new vendor contracts well before the emergency occurs.

IMPLEMENTATION 3.9

- The Controller's Office will work to implement the Finance and Administration Section of the Emergency Operations Plan.

POLICY 3.10

Ensure historic resources are protected in the aftermath of a disaster.

Preservation of the City's historic resources is an immediate concern when damage is being assessed. The older construction techniques of historic buildings makes them more vulnerable to damage, and if the damage is noted without recognition of the resources historic value, the building can be at risk of further damage or demolition.

Accurate information about heritage resources is fundamental to ensuring resources are not lost. Complete survey information ensures that resource documentation of relevant buildings exists, and this information can be mapped and used by assessors in the tagging of buildings post-disaster. Since the year 2000, the Planning Department has been actively engaged in survey work through the Citywide Survey Program. The focus of the program is on neighborhoods that are undergoing long-range planning efforts or are the focus of intense development activity, but the Citywide Survey Program will continue survey efforts in neighborhoods outside of Area Plan study areas as resources become available. While that Citywide Survey is underway, the City should make use of existing survey information, including privately developed property reviews, and ensure it is made available to DBI and any other relevant contractors who may be charged with doing evaluations of damaged buildings.

Post-disaster assessment should include an analysis of the extent of the damage to historic areas and resources. In a typical assessment scenario, assessors will attach a green tag if a building is structurally sound, a yellow tag where repairs are needed, and a red tag if the structure is uninhabitable. This system should ensure sufficient protection for historic resources post-disaster, in that all tagged buildings receive further detailed evaluation considering survey information before any steps towards demolition are taken. The system could also include separate placards identifying the building as a historic resource. Without such identification, the buildings are at risk: for example, one such unidentified resource in New Orleans, tagged as unsafe, but not scheduled for demolition, was used to demonstrate demolition equipment by unknowledgeable staff, and eventually collapsed.

IMPLEMENTATION 3.10

- The Planning Department will continue to conduct context-based historic resource surveys throughout the City, working cooperatively with other agencies such as the Redevelopment Agency and Port of San Francisco to coordinate survey efforts. The Planning Department will also pursue identification and required protection for qualifying properties.
- The Department of Building Inspection will work with the Planning Department to create a method to assess damage to historic structures after a disaster.

Policy 3.11

Address hazardous material and other spills by requiring appropriate cleanup of property owners per local, state, and federal environmental laws.

Accidental spills and releases of hazardous waste or hazardous substances can cause severe damage not only to the environment, but to the public's health. This is a particular issue for other older industrial properties with toxic spill issues as they convert to other uses or forms of development. In cases where environmental damage or hazardous conditions have occurred, the City shall require all property owners and other responsible parties to report spills or leakages and to perform clean up to the level required by local, state, and federal environmental regulations. Where such parties delay in this required cleanup, the City, working with other regulatory agencies, shall take all measures necessary to ensure the public's health and safety is protected.

IMPLEMENTATION 3.11

- The Fire Department and the Department of Public Health will continue to implement local, state, and federal environmental laws in relation to hazardous materials, particularly in regards to emergency clean up necessary after a disaster.

4. RECOVERY AND RECONSTRUCTION

OBJECTIVE 4

ASSURE THE SOUND, EQUITABLE AND EXPEDIENT RECONSTRUCTION OF SAN FRANCISCO FOLLOWING A MAJOR DISASTER.

A major disaster resulting in extensive destruction in the City will result in a public and private commitment to rebuild San Francisco, and to do so as quickly as possible, while providing needed interim facilities where people can live, conduct businesses, and provide services.

The rebuilding of areas with extensive damage will present choices between retaining existing land uses, regulations, land ownership patterns, circulation and infrastructure configurations, and other physical characteristics as they existed before the disaster, or, alternatively, reconsidering the area's physical patterns, or a combination of the two approaches. While these issues are being considered, the City's established development objectives and procedures (embodied in the General Plan) should be respected. A balance should be struck to enable new development to take advantage of opportunities to improve the area and the city, while respecting the values of the past. Some areas might best be repaired and rebuilt in ways similar to their pre-disaster conditions, while new area plans applying citywide objectives may be needed in others with pervasive damage.

Preparation and planning prior to a disaster can improve the effectiveness of post-disaster efforts. Longer-term reconstruction decisions will need to be made by decision-makers including the Mayor, the Board of Supervisors, the Planning Commission and others, with considerable public involvement. Advance planning for the recovery process will improve the City's ability to make these decisions, which will profoundly influence the future of the City, quickly, equitably, and effectively.

Recovery Plan

POLICY 4.1

Before an emergency occurs, establish an interdepartmental group to develop a Recovery and Reconstruction Plan to guide long-term recovery, manage reconstruction activities, and coordination rebuilding activity.

Long-term recovery planning plays a critical role as part of disaster preparedness. A previously agreed-upon recovery and rebuilding plan can reduce debates and disagreements about how to rebuild, and result in a much faster reconstruction period, and in recognition of this, previous policies of the Safety Element directed the City to establish a recovery task force and to develop a Recovery and Reconstruction Plan. This goal has not yet been achieved, and the varied and controversial reconstruction plans developed (and decried) in the wake of Hurricane Katrina prove that attainment of a unified, community-embraced reconstruction plan is critical to a smooth rebuilding process. Other disaster histories, including our own, have proven that rush to rebuild often takes place before the necessary planning is complete. Therefore, it is critical the task force establish a vision for rebuilding, and complete the plan's underlying framework, before the disaster occurs.

To jumpstart this process, the City should establish a task force made up not only of City agencies, such as the Planning Department, the Department of Emergency Management, the Redevelopment Agency, the Department of Public Works, the Department of Building Inspection, the Mayor's Office of Community Development, the Mayor's Office of Housing, and the Department of the Environment, but also a range of community representatives, including business interests, nonprofits and industry leaders, policy advocates, and neighborhood representatives. The task force may also include representatives of other Counties, State and Federal Agencies. The task force's efforts should be directed by a designated lead agency or individual who can take control of the recovery and reconstruction planning process, and see it through to its conclusion.

This task force will be responsible for the development, drafting and adoption of the post-disaster long-term recovery and reconstruction plan. This plan should be based on the most likely scenario – a major-scale earthquake – as well as other probable events, including local disruptions like a transportation interruption or a pandemic. While no plan can anticipate the impact that such a disaster might have, and therefore will not have detailed recommendations to address every eventuality, the plan can provide a vision and a framework for how our community will rebuild after a disaster. The plan cannot address every eventuality, but it can work to identify community priorities for our future. Perversely, a disaster may present the City with a unique opportunity to physically, economically, and socially strengthen the region; and the plan developed should take advantage of this opportunity.

IMPLEMENTATION 4.1

- The Mayor's Office and the Board of Supervisors will appoint a Recovery and Reconstruction Task Force.
- The Recovery and Reconstruction Task Force will develop a post-disaster recovery and reconstruction plan.

POLICY 4.2

Engage the community in the reconstruction planning process.

Reconstruction is too important and too big a task for policymakers to take on their own. Residents themselves must play a central role in the decisions determining how their region is rebuilt.

The leaders of the process must develop an education-based involvement process. The Recovery and Reconstruction Plan Task Force should not only identify, but actively engage, the varied interests of the community. They should hold citywide workshops to encourage at large participation. They should also structure a planning process which fosters engagement at the neighborhood scale, through neighborhood-based workshops, committees and special issue focus groups. Citizens should be presented with options for the City's future, and with all of the information necessary to make a choice from those alternatives. Based on the information provided, and the exercises in which they are engaged, the community should come together around a vision for how they want to rebuild after a disaster, what they want their future to look like, and how, physically, that future should take shape. In the end, the task force must build public support for the plan, and further its adoption as the community's vision for its future.

IMPLEMENTATION 4.2

- The Recovery and Reconstruction Plan Task Force will develop a community based process that will actively engage the residents of the City in the development of a Recovery and Reconstruction Plan.

POLICY 4.3

Ensure the Recovery and Reconstruction Plan is comprehensive and consistent with already established City programs and policies.

The Recovery and Reconstruction Plan will need to prepare the City to meet immediate changing needs after a disaster. Special services and facilities will be needed on a short-term basis, including temporary housing, commercial facilities, and health and human services. It may be necessary to locate these facilities in areas not normally available for development, or at higher densities than is normally allowed. The damage may warrant reconsideration of large-scale issues such as housing locations, transit and public infrastructure such as streets.

The Recovery and Reconstruction Plan should build upon established General Plan objectives and policies, and be consistent with already established City programs, policies, and regulations. The Plan should include clear policies and programs addressing the following issues, including the following at a minimum:

- Coordination with federal and state agencies
- Coordination with other regional cities and counties
- Plans for temporary housing (considered as part of long-term plan, because much may become permanent).
- Planning for, financing and construction of potentially large numbers of replacement housing units, including consideration for affordability needs.
- Land use decisions and recommended changes in response to local opportunities.
- Establishment of public reconstruction priorities

The Recovery and Reconstruction Plan may also consider potential changes to the City's physical framework and development pattern, potentially reviewing issues such as:

- Re-examination of street patterns, street design, and standards such as required width, etc.
- Designation of areas for consideration of acquisitions or easements for open space
- Recommendations for changes and improvements to major transportation routes, transit networks and other lifelines.
- Revisions to City infrastructure networks, including possible undergrounding of utilities, and use of new technologies in service provision.
- Guidance for financing the City's long-term economic recovery.

IMPLEMENTATION 4.3

- The Recovery and Reconstruction Plan Task Force shall develop a plan that addresses at a minimum the above noted issues, and that is consistent with current city policies to the maximum extent possible.

POLICY 4.4

Update the Recovery and Reconstruction Plan on a regular basis.

The Recovery and Reconstruction Plan should be updated as necessary to reflect changing conditions, changes in City policy and technology, and changes in the state and federal regulations that will influence the post-disaster recovery financing. The task force should set, in its creation of the plan, a schedule for regular updates.

IMPLEMENTATION 4.4

- The Recovery and Reconstruction Plan Task Force will develop and follow a timeline for regularly updating the Recovery and Reconstruction Plan.

POLICY 4.5

Maintain public support for the plan to ensure its eventual implementation.

Once a plan is adopted, its work is not over. Implementation of the plan is its critical conclusion, and achieving this end in the aftermath of a disaster will require vigilance on the City's part. The Burnham Plan, developed for the City's reconstruction after the 1906 earthquake, was never implemented, for several reasons. The plan required money from the City's taxpayers, cooperation from property owners, and strength from the City's leadership – things that were difficult to garner from populations who were not a part of its development. Whether or not one supported the specific Burnham vision or an alternative prospect, it is clear that no plan could have succeeded without community support. Without community support, demands for rapid reconstruction will always win out over grander plans for the City's future.

The City should build local support for the plan to ensure it does not get weakened by demands for rapid rebuilding. While this force will always be present, the desire for haste should not preempt the Recovery and Reconstruction Plan or make the Plan's rebuild vision irrelevant. The community planning process and the adoption hearings for the reconstruction plan should provide a vehicle to strengthen community support. Once adopted, the City should continue to examine and re-evaluate the plan, to ensure it keeps up with shifting community priorities as well as to keep it present and important in the public's mind.

IMPLEMENTATION 4.5

- The Recovery and Reconstruction Plan Task Force, in cooperation with relevant City outreach agencies such as the Mayors Office and the Department of Emergency Management, will continue to educate the public and maintain their support both for and about the plan and plan elements.

Recovery and Rebuilding Policies

Policy 4.6

View recovery as a partnership with neighborhoods

Neighborhoods can be a driving force in recovery efforts. They understand their priorities, and they have personal motivation – often lacking at the government level - to ensure projects and programs are carried out. Recent examples such as the Broadmoor neighborhood in New Orleans, which first developed a neighborhood recovery plan and is currently implementing it with the

reconstruction of a local elementary school, library, and eventual community center, provides an example of results that can occur from community directed recovery, provided it is fostered with public and even private support.

In the worst-case scenario – where the City government is unable to meet its commitment to the residents - community-directed recovery is a good option. Pre-existing community organizations provide a ready structure for development of a strong local force that can step into roles that an overtaxed government may not be able to fill. These groups, if strong, can be the lynchpin for the rebuilding effort, as Broadmoor's has. And even in cases where government is prepared and able to meet its citizens' needs, its efforts can be made stronger if it views response and recovery as a partnership.

In recognition of communities' critical role in recovery, the City should work to increase the capacity of neighborhoods and neighborhood groups. The City currently maintains a number of programs, such as NERT and the Neighborhood Empowerment Network, that empower residents and community groups to share in mitigation and recovery efforts. These programs should be viewed as part of developing framework of efforts to prepare communities in advance of a disaster, beginning with outreach and provision of information, and extending into disaster preparedness activities such as mapping projects and emergency management planning development.

IMPLEMENTATION 4.6

- The Mayors Office of Neighborhood Services shall continue to offer encouragement, institutional support and financial support to local community groups' disaster planning efforts, and work with other City agencies to set up clear access routes and contact points to City departments, agencies and utilities.
- City agencies, in particular the Mayors Office of Neighborhood Services shall encourage existing neighborhood groups to take on disaster preparedness and response as one of their key charges.

Policy 4.7

Promote partnerships with non-governmental agencies, including public private partnerships, to ensure support is ready to step in after a disaster.

Public private partnerships can be a strong tool in revitalization after a community disaster. Relationships with corporate entities, particularly those with local ties, can lead to financial and other support in reconstruction and restoration efforts. In the Broadmoor neighborhood example of New Orleans, public private partnership enabled plan development, helped secure grants to fund rebuilding efforts, and led to donations of corporate services, marketing materials and even construction support. By laying the groundwork necessary for strong public/private partnerships now - by establishing relationships with universities, corporations and foundations – the City can put itself in a strong position to receive support outside of state and federal aid, which could be critical if disaster is widespread and government resources must be extended.

IMPLEMENTATION 4.7

- The City Administrator's Office shall continue to develop relationships and partnerships with local businesses and City suppliers, and shall work with these partners to identify sources for specific needs in advance of the disaster, and ensure partners are ready to assist in key roles after the disaster.

POLICY 4.8

Rebuild after a major disaster in accordance with established General Plan objectives and policies and other relevant policies and regulations.

The General Plan, the City's Transit First policy, the Priority Policies of Planning Code and other City policies have been adopted, after much public consideration, to assure the preservation and enhancement and safety of this very desirable urban environment. In the efforts to restore damaged areas of the city, existing development policies and regulations should be respected. Opportunities may be created for realizing General Plan policies, such as improvements to circulation systems, the provision of needed public or private open space, or hazard reduction. In areas with extensive building and infrastructure damage, coordinated rebuilding to take advantage of opportunities for neighborhood improvement, may be best achieved with an area plan approach. The rebuilding process may also enable possibilities for increasing mobility through improved and increased public transit, as well as other alternatives to the private automobile. Future Elements and Area Plans of the General Plan, transportation policies and guiding principles developed by the City should be formulated with an awareness of their potential applicability in relation to earthquake recovery.

IMPLEMENTATION 4.8

- All agencies, including the Mayor's Office, Board of Supervisors, Planning Department, Department of Building Inspection, Municipal Transportation Agency, San Francisco County Transportation Agency, and other departments responsible for reconstruction, shall ensure their respective efforts are consistent with adopted General Plan policies and other relevant regulations.

POLICY 4.9

Develop and adopt a Repair and Reconstruction Ordinance, to facilitate the repair and reconstruction of buildings.

In the period after a disaster, the Department of Building Inspection and Planning will likely see a surge in permit applications. While the Department of Building Inspection already maintains procedures to deal with emergency repairs, the City does not have plans to deal with the sustained demand that may result from large-scale reconstruction. An effective Repair and Reconstruction ordinance can be used to streamline and expedite the permitting process while avoiding a hastily administered permitting process. In fact, the federal government requires that municipalities have such an ordinance in place in order to receive FEMA and other public assistance funds for the reconstruction of public facilities, city and county buildings.

The development of such an ordinance should establish clear permit processing and review procedures to expedite rebuilding in the post-disaster period, while providing the amount of review necessary to ensure that reconstruction meets the City's objectives yet is economically feasible. Any ordinance that is developed should also contain measures to more specifically address historic buildings, to ensure repairs maintain the integrity of the structure without adversely affecting its historic nature. The ordinance should also consider applicability of the City's notification or other review procedures. The ordinance should also be clear on the length of time during which it is applicable.

It is important that the ordinance not work at cross-purposes with other City goals. Large-scale damage to confined areas might warrant specific neighborhood plans or reconstruction guidelines, and these will take time to prepare. If necessary, the ordinance should allow for periods of non-building while important changes are adopted into law.

IMPLEMENTATION 4.9

- The Department of Building Inspection and the Planning Department shall work with the City Attorney's Office to write a Repair and Reconstruction Ordinance.

POLICY 4.10

Revise the Planning Code and its approval procedures where necessary to facilitate rebuilding.

The City should review the procedures of the Planning Code with an eye to rebuilding, and remove unnecessary or excessive review procedures that may prove to be obstacles to reconstruction. In particular, the City should reconsider Planning Commission reviews such as the automatic conditional use requirement for any project over 40 feet in height in all R zoning districts, re-evaluate rights to discretionary review for rebuilding projects, and review the necessity of other discretionary approvals currently required or enabled by the Planning Code.

The City should have policies in place with regards to nonconforming uses and buildings. They should also explore modifications to outdated code standards in the rebuild of these projects. For example, the City might wish to consider a waiver for replacement of pre-earthquake parking spaces; and instead use the opportunity to adjust requirements to a level that corresponds to the Code's current, transit-based standards.

IMPLEMENTATION 4.10

- Should funding be made available for an update or rewrite of the City's Planning Code, the Planning Department shall recommend amendments which address existing obstacles to an expedient recovery and reconstruction.

POLICY 4.11

Refine building code standards to further mitigate damage.

After the 1906 earthquake, in the rush to rebuild the city, building standards were in fact lowered instead of strengthened. The City has already committed to a continued review of seismic engineering and construction advances, and should make sure that demands for immediate reconstruction do not weaken this commitment.

The proposed International Building Code (IBC), set to be adopted by the City in 2008, makes significant changes in both the structural and nonstructural seismic requirements for new buildings.. The seismic provisions contained in the IBC include the latest ground motion maps, references to the most current structural design standards, and enhanced quality assurance provisions. While revisions to the code are dependent to a certain extent on state actions, the City should keep apprised of the latest advances in seismic design and construction productivity in local building design; and examine the possibility of local amendments to keep construction practices in the City at the highest level possible. This should include examining the concept of varied levels of seismic performance for structures depending on their use and occupancy; and the use of stricter building codes in areas with identified natural and manmade hazards such as liquefaction zones.

IMPLEMENTATION 4.11

- The Department of Building Inspection shall adopt the International Building Code (IBC),, and additionally continue to seek out the latest advances in seismic design and construction productivity for incorporation into local amendments to the Building Code.

POLICY 4.12

Develop incentives to encourage rebuilding according the vision of the Recovery and Reconstruction Plan.

In some cases, the cost of rebuilding under today's construction costs may be high compared to the return that the restored development will bring, particularly in the case of rental development. The City may wish to consider development incentives as a part of a comprehensive rebuild planning process. Potential incentives might include the removal of density controls where those still exist - small increases in development potential through these bonuses could increase the return on reconstruction for a given property, thereby increasing a developer's motivation to rebuild. The City may also wish to explore financial incentives, including fee deferment or even waivers, as a motivation for property owners who might otherwise delay their reconstruction. The City should, however, establish a strict time period for any incentives, restricting granting of such incentives to a 2-year or less window from the time of the event.

IMPLEMENTATION 4.12

- The Office of the Treasurer and Tax Collector and the Office of the Assessor-Recorder shall consider tax incentives that may reduce the cost burden of rebuilding after a disaster.
- The Planning Department and other fee collecting agencies shall consider waiver of fees such as development impact fees to incentivize rebuilding after a disaster. .

POLICY 4.13

Utilize emergency exemptions for rebuild projects with limited or no environmental impacts.

CEQA currently allows emergency exemptions for projects which are necessary to prevent or mitigate an emergency. In cases where projects are being restored to their pre-disaster state, the sum of their impact has already been reviewed by previous assessments, and thus CEQA enables categorical exemptions for projects reconstructing to standards existing prior to the disaster. The City should ensure these statutes are utilized wherever they make sense to avoid unnecessary delay, while ensuring that new or large-scale projects which may alter the balance of the City receive sufficient review.

IMPLEMENTATION 4.13

- The Planning Department will utilize provisions in CEQA for emergency exemptions for relevant projects after a disaster.

POLICY 4.14

Utilize green building practices in rebuilding.

Destroyed buildings and infrastructure will be a consequence of any large-impact earthquake. Salvaging their building material not only aids in the objective of reducing the amount of debris going to a landfill, it supports the rebuilding process. The City should support the establishment of new businesses that can reclaim, warehouse and resell debris for reconstruction. They should also provide incentives, either financial or otherwise, for the use of recycled materials in redevelopment.

One way the City could ensure a market for these recycled materials is to require green building in new and redevelopment. While the City has many incentives already in place for green building, it does not currently require green construction of non-municipal projects. A number of the country's major cities have such requirements already in place - at the time of this drafting, both Washington DC and Boston had mandatory standards in place for significant new development - and if the City has not established such standards by the time a disaster strikes, it should put them in place in time for reconstruction.

IMPLEMENTATION 4.14

- The Mayor's Task Force shall develop environmental standards for new private sector buildings, and the Board of Supervisors shall adopt these mandatory standards, in addition to current requirements for public buildings,.

POLICY 4.15

Ensure design character and quality is paramount in consideration of all rebuilding projects.

The City's attitude toward rebuilding will have to balance two sometimes competing objectives – the need to rebuild quickly, and the desire to maintain and even improve design character. A lesson can be gleaned from the never-executed Burnham Plan, which was developed but then discarded after the 1906 earthquake: the political pressure of property owners to rebuild can overtake other interests, and thus could affect the quality of rebuild architecture and design.

It is important that the next such large-scale rebuilding not follow this same path, and that design be considered hand in hand with haste. The damage of a natural or other disaster may damage many of the neighborhoods and buildings that contribute to the City's urban design character, and it is imperative that reconstruction be done in a way that will restore and strengthen, not further weaken that character. While many of the preceding policies speak to the need for timeliness in review of reconstruction projects, the policies developed must ensure that design character and quality are not ignored in the urgency of rebuilding. All reconstruction should follow the framework put in place by the Reconstruction Plan, as well as the urban design standards and residential design guidelines already in place in the City. Where specific design standards do not exist, the City should make establishment of these a priority, to ensure that neighborhood character is retained and that pre-existing structures are not reconstructed to a lesser caliber of design.

IMPLEMENTATION 4.15

- The Planning Department shall implement the Residential Design Guidelines, all area plan guidelines, and any design standards adopted as part of the Recovery and Reconstruction Plan in approving new development.

Restoration of Housing

POLICY 4.16

Provide adequate interim accommodation for residents and businesses displaced by a major disaster in ways that maintain neighborhood ties and cultural continuity to the extent possible.

The Department of Emergency Management estimates that after a major earthquake, anywhere from 20,000 to 90,000 housing units may be destroyed or substantially damaged (based on projected impact scenarios driven by events on the Hayward and San Andreas earthquake faults, which are believed to present the greatest risk). Many businesses that provide necessary services to residents will also be displaced. Repair and reconstruction will take several years. The Citywide Earthquake Enhancement Plan provides direction for the acquisition of housing for disaster service workers, and its Care and Shelter Annex establishes plans for the provision of emergency shelter for the general population, but no specific agency is tasked with the responsibility of interim housing, and no department is specifically tasked with finding temporary space for displaced businesses.

The City should establish a lead agency, or agencies such as the Planning Department, Mayor's Office of Housing and/or the Mayor's Office of Workforce Development, to deal with housing and business relocation. As interim housing will largely be the responsibility of State and federal agents, these agencies will mediate between these agents and the affected communities to assure that the temporary and interim housing is adequate, convenient and includes necessary businesses and social services. In order to maintain relationships and connections within the community, temporary housing and other facilities should be provided near their pre-disaster location as much as possible.

IMPLEMENTATION 4.16

- The Board of Supervisors shall designate a lead agency, or agencies, to deal with housing and business relocation and reconstruction.
- This lead agency shall work with the Planning Department, the Mayor's Office of Housing and the Mayor's Office of Workforce Development to determine interim housing and business sites.

POLICY 4.17

Repair damaged neighborhoods in a manner that allows displaced residents to return to the communities where they lived.

San Francisco neighborhoods have distinct characters, and often have long-term residents, businesses and institutions. Many of its neighborhoods have distinct cultural identities, and provide the bonds of community for their residents. The City, in cooperation with State and federal agencies, and community-based organizations, must manage rebuilding to maintain neighborhood character and identity, and to ensure that new development does not weaken this quality.

As such, plans should provide opportunities for those who lived in the area to return to new or repaired homes and other facilities there. The City should explore methods of providing rights to reoccupancy for tenants that must vacate their unit because of reconstruction, renovation or improvement.

IMPLEMENTATION 4.17

- The Board of Supervisors shall direct the City Attorney's Office to review potential policies with regards to re-occupancy rights for tenants and business owners after reconstruction.

POLICY 4.18

Establish policies that will protect tenants from evictions, forced relocations or large rent increases in the wake of a disaster.

Post-disaster, the City's already existing affordable housing shortage needs will be exacerbated. Some of the neighborhoods most vulnerable to serious damage in an earthquake provide affordable housing. Much of the City's lowest-cost housing is located in older buildings, which are more likely to sustain damage in the case of an earthquake. Many of these older units are kept affordable through rent control, which through state-mandated vacancy decontrol may be increased when the unit is vacated, and does not have to be restored if the unit is replaced. And when reconstruction begins, if left to its own devices, the private market is likely to begin rebuilding with more profitable, higher priced units.

Policies to protect affordability after a disaster are easy to identify but difficult to finance, particularly through the private market. Damaged affordable housing and single-room occupancy hotels should be replaced at as close to a one-to-one basis as possible, using cooperation among the private market, nonprofit agencies, and local, state or federal government sources to achieve a similar level of affordability as units being replaced. Eviction regulations in the post-disaster period should ensure the disaster is not misused as a way to "cleanse" projects of low-paying tenants. Other potential policies, such as right of return for previous residents, continuation of rent control, and prevention of unfair increases in rent post-disaster, should be considered. However, these types of policies are difficult to implement solely through private sector financing, and their cost, unless subsidized by public funding, may be prohibitive to the rebuilding process.

The City should also explore policy change at the state level that will enable more control over the methods used to stabilize rents post-disaster and long-term. Potential changes include repeal of the Costa-Hawkins Act vacancy decontrols, and establishment of rent control on replacement units.

IMPLEMENTATION 4.18

- The Mayor's Office of Housing shall work with private sector builders to develop partnership, including potential public funding, to re-establish affordable housing post-disaster.

POLICY 4.19

Consider homelessness in the wake of disaster.

Homelessness, and the risk of becoming homeless, are epidemics already in the Bay Area, and an earthquake will exacerbate housing issues for these populations. The Loma Prieta earthquake damaged homeless shelters and a number of the single-room-occupancy hotels that were an important source of housing for the very poor. Yet in some communities affected by the earthquake, it was stated that disaster aid was not meant to address what they considered pre-existing community problems, and "pre-disaster homeless" persons did not meet the eligibility requirements for assistance. Following the Loma Prieta earthquake, the Federal Emergency Management Agency (FEMA) was severely criticized for discrimination against the homeless population, and people in transient living situations.

Prior to a disaster the City should inventory and document its pre-existing stock of homeless shelters, single-room-occupancy hotels and transitional living facilities. The City must ensure its

post-disaster plans consider major social issues such as homelessness. With many properties destroyed or uninhabitable, it will be even more difficult for this challenged population to find suitable housing after an earthquake. Transition to long-term shelter will be needed for those already homeless, requiring long-term aid and greater assistance than is typically required by disaster victims.

IMPLEMENTATION 4.19

- The Human Service Agency shall inventory and document its existing stock of homeless shelters, single-room-occupancy hotels, and transitional living facilities to establish a baseline of pre-emergency supply.
- The Recovery and Reconstruction Plan Task Force shall review the needs of the homeless, residents of single-room-occupancy hotels and transitional living facilities and include recommendations into the Recovery and Reconstruction Plan.

POLICY 4.20

Encourage employer-based housing assistance during reconstruction

Lack of housing can have a severe impact on economic recovery. If the labor pool has nowhere to live, they are unable to work. Limited housing opportunities, particularly at the lower end of the income spectrum, can curtail the available labor pool for construction during rebuilding, and the absence of permanent housing once businesses have come back online may cause local employees to seek work elsewhere.

The City should partner with business community in restoring housing for the community. The most useful assistance local businesses can provide will be financial contributions, whether they are at-large contributions coordinated by the City or direct subsidies offered to their own workers. Some possible methods include the development of employer-directed community land trusts or rental deposit and down payment grants for displaced workers.

IMPLEMENTATION 4.20

- The Mayor's Office of Workforce and Economic Development will partner with the business community to create channels for employee housing assistance after an emergency.

POLICY 4.21

Explore creative methods of increasing affordable housing stock during reconstruction

One consequence of lost affordable housing will be the overcrowding of what is left. In order to address this disadvantage, the City should do as much as possible to expand the affordable housing stock. Possible methods in addition to the construction of new housing may include encouraging unit additions through secondary units and garage additions, raising or removing density limits in logical locations to enable additional units where they are currently not permitted, and legalizing currently illegal housing units.

IMPLEMENTATION 4.21

- The Planning Department will develop policies that encourage and present options for increasing affordable housing during reconstruction.

POLICY 4.22

Consider creative financing tools, such as tax increment financing, to support new affordable housing and other neighborhood infrastructure damaged by a disaster.

Redevelopment can be a powerful tool for reconstruction after disasters, and has been used after virtually every damaging earthquake in the state to speed up City rebuilding. The establishment of a Recovery Project Area in the City's most damaged neighborhoods can provide a mechanism to replace housing units at a greater level of affordability. However, redevelopment is most useful as a tool when it is limited to a finite area with concentrated damage, and other tools may be needed to address citywide needs.

In the state of Washington, a change in state law enabled its communities to exceed statutory property tax limitations for the purpose of financing affordable housing for very low-income households. A similar change in California could allow cities subject to an earthquake or other disaster to use tax increment in disaster reconstruction. A law enabling the use of tax increment financing outside of redevelopment constraints, similar to what is allowed by an Infrastructure Financing District (IFD), could enable cities to divert property tax increment revenues to finance housing, transit, water systems, and other facilities (Current IFD regulations do not yet enable the construction of affordable housing).

IMPLEMENTATION 4.22

- The City Attorney's Office, with assistance from legal staff in the Redevelopment Agency, shall research legal options for creative and efficient financing of affordable housing in a post-emergency situation.

POLICY 4.23

Use police power if necessary to expedite repair, reconstruction and new construction of housing

In the aftermath of a disaster, there may be properties that lie fallow for some time. The damage may be so severe that owners without insurance simply abandon properties; absentee owners and landlords could choose simply to not return, and there may be cases where it is not economically feasible or possible for owner to rebuild.

Police power provides the City with the authority to impose policies, rules and regulations that will protect the public welfare, order, and security. The City should use these powers to facilitate redevelopment - this might include expropriating damaged rental properties that remain unrepaired and unoccupied, are a safety or health hazard, or have deteriorated to such a degree that they are unlikely to be restored to quality housing. The City could then restore these units municipally if necessary, or provide them to nonprofits for repair and reconstruction as low-cost housing.

Another public power available is eminent domain, a controversial tool rarely used by the City. The City should use eminent domain only in limited instances, when it proves the only method available to meet the needs of its citizens, and should ensure it is not used to permanently secure unabandoned, private or owner-occupied homes. For example, eminent domain may be appropriate in the case of a disaster for temporary use, such as securing vacant or abandoned sites for interim housing; the sites could be returned to their previous ownership when the owner is ready to construct replacement housing.

Embedded within the rebuilding process is the possibility of land speculation. In the wake of Hurricane Katrina in New Orleans, several communities have seen developers take advantage of residents' losses to purchase large swaths of property. The City should take

policy steps to prevent against this kind of abuse, and to ensure the rights of homeowners and renters are protected, including consumer protection and education. The state of Florida enacted a price gouging law making it illegal to charge exorbitant or excessive prices for essential items, and a version of this might be explored to address the opposite case – extremely low prices that take advantage of residents. A land trust is another mechanism the City may wish to consider to deal with encroaching commercial development at the expense of San Francisco residents.

IMPLEMENTATION 4.23

- The City Attorney’s Office will work with the Mayor’s Office of Neighborhood Services to craft policies that allow the City to assist in the efficient rebuilding of neighborhoods while protecting the rights and needs of land owners and residents. Abandoned properties, eminent domain, and land speculation should all be addressed within the emergency policies set forth.
- The Office of the Treasurer and Tax Collector shall review the Napa Valley and other relevant ordinances, and explore possibilities for extension of the property tax deadlines per state law.

Economic Recovery

POLICY 4.24

Have an economic recovery plan in place before the disaster strikes.

An earthquake or other disaster can have a major impact on the economic landscape of the City. Previous earthquakes have resulted in dramatic losses in office space and subsequent relocation of businesses; in drops in tourism, which is one of San Francisco’s major industries; and disproportionate impacts on small businesses, who have fewer resources with which to recover.

The City should ensure an economic recovery plan is in place to foster business resumption, end even growth, after a disaster. The plan should prioritize the elements of the City necessary to support business activity, such as the restoration of transit and regional roadways; utilities and services available to the business community, and housing availability for the workforce. The City should work with business community to develop this plan, and solicit wide advice on how to facilitate business revitalization. The plan may include recommendations to hasten the resumption of business such as loans, funding for workplace building repair, and financial assistance.

IMPLEMENTATION 4.24

- The Mayor’s Office of Workforce and Economic Development shall contribute recommendations on short- and long-term economic recovery for inclusion into the Recovery and Reconstruction Plan.

POLICY 4.25

Explore expansion of the City’s disaster relief programs.

The City of San Francisco provides financial relief to property owners through tax programs including disaster relief on property taxes, and participation in the state’s Section 69.3 property tax disaster relief program which enables former residents who move to other counties to maintain their previous level of property taxation prior to the disaster.

The City should review other forms of tax relief to affected residents and business owners, including reductions on other fees and taxes. A temporary moratorium on payroll taxes may be one way to get business back up and running directly after a disaster. In the wake of their 2000 earthquake, Napa Valley's ordinance provided a month-long extension of a number of taxes and fees, including sales taxes; reduced property tax assessment and deferral of property taxes on damaged property, and refunds on taxes paid for unmarketable goods.

Educating citizens about the lack of access to funds in the event of a disaster is critical. The Office of the Treasurer and Tax Collector should be involved in working with financial institutions and educating the public on how to access private funds during a time when typical procedures will not be possible.

IMPLEMENTATION 4.25

- During the post-disaster reconstruction period, the Office of the Treasurer shall consider and implement measures to provide fiscal relief for residents and businesses.
- The Office of the Treasurer will continue educational campaign regarding personal finance planning, and include information about accessing finances after an emergency.

POLICY 4.26

Ensure effective use of public emergency funds and expenditures, and recovery of those expenditures.

The Controller's Office is responsible for tracking expenditures account for the cost of responding to, and recovering from, the disaster. This includes tracking, recording, and reporting on all payments made in response to the emergency, including personnel working during the emergency, outside contractor work, and expenses such as supplies, materials, equipment and vehicle inventory records.

It is important that the tasks that are authorized are relevant and necessary, and that their completion is well-documented by the Controller's Office and its supporting agencies. This documentation will be critical in submitting disaster reimbursement claims to the State and Federal government, and ensuring support funding is received.

IMPLEMENTATION 4.26

- The Controller's Office will work with the Department of Administrative Services and the Office of the Treasurer to ensure that checks, balances, and effective procedures exist for contracting services, distributing payments, and receiving reimbursements for recovery and reconstruction services after a disaster.

POLICY 4.27

Provide assistance to businesses, especially small businesses

In the wake of a disaster, many local businesses, particularly small businesses, will struggle to resume activity. They may have lost assets, necessary facilities or equipment, access to employees and even their customer base. While the City's own taxed financial resources will limit direct financial assistance from City funds, there are many other things it can do to support businesses

The City should mediate with state and federal business assistance programs to achieve access to funds for local businesses, and should provide guidance to businesses in securing those funds.

The City's economic and business development agencies can provide business resumption assistance for companies and organizations hit hard by the disaster, and provide alternative or temporary spaces for immediate use. The City can encourage loan and grant funding from non-government sources, and further affected businesses' ability to secure loans from local banks or unions by offering government guarantees on loans. Tax incentives, including temporary payroll tax exclusion, sales tax exemption and tax write-offs on replaced business equipment and furniture, and property tax abatements, should be explored to encourage re-investment and growth of businesses.

IMPLEMENTATION 4.27

- Post-disaster, the Mayor's Office of Workforce and Economic Development shall develop and distribute materials which outline available state and federal financial assistance programs.

POLICY 4.28

Foster access to capital for individuals, families and businesses.

The City should work with financial institutions to prepare for the period immediately following a disaster, encouraging them to allow customers access to money and removing restrictions that might foster this access, such as high fees early withdrawal penalties, restrictions on check cashing and cash limits at ATMs. The City should also assist banks and other financial institutions if they need to relocate because of damage, by facilitating the permitting process locally, and doing what it can to allow the opening and closing of branches without the usual paperwork required by financial regulators at the federal level.

IMPLEMENTATION 4.28

- The Office of the Treasurer will work with private financial institutions to develop alternative, post-disaster policies that foster efficient access to personal capital.
- The Planning Department shall explore alternative, short-term approval methods for temporary locations for financial institutions post- disaster.