



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

San Mateo County Transit District  
(SamTrans)  
Peninsula Corridor Joint Powers Board  
(Caltrain)  
and  
San Mateo County Transportation Authority

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# San Mateo County Transit District, Peninsula Corridor Joint Powers Board and San Mateo County Transportation Authority

## Introduction

The San Mateo County Transit District is the administrative body for the principal public transit and transportation programs in San Mateo County, including SamTrans, Caltrain and the San Mateo County Transportation Authority. Caltrain and the Transportation Authority have contracted with the District to serve as the managing agency for those two entities, under the direction of their appointed boards. As of March, 2011, the District employs 671 people and operates 322 vehicles serving 15 million bus passengers annually.

The San Mateo County Transit District operates fixed-route and paratransit bus service in San Mateo County and parts of San Francisco and Palo Alto. Fixed-route service runs on a scheduled route at designated times. Paratransit is a service for those who cannot use fixed-route service due to mobility impairment. Redi-Wheels and RediCoast are SamTrans' paratransit services.

The Peninsula Corridor Joint Powers Board operates and owns the Caltrain rail service and corridor between San Jose and San Francisco, and operates weekday commute-hours service to Gilroy. The Joint Powers Board is a tri-county Board, comprised of representatives from the City and County of San Francisco, San Mateo County Transit District and the Santa Clara Valley Transportation Authority.

The San Mateo County Transportation Authority is an independent agency that administers the half-cent "Measure A" sales tax revenue, which is used to fund transportation improvements throughout San Mateo County. Measure A was approved by voters in 1988 for a 20-year period and reauthorized by voters in 2004 for an additional 25 years, ending in December 2033.

## The Regional Planning Process

The San Mateo County Transit District staff, representing SamTrans, Caltrain and the Transportation Authority, participated in the regional process led by the Association Bay Area Governments (ABAG) workshops, conferences, and meetings in conjunction with the monthly meetings of the Metropolitan Transportation Commission. As part of this lengthy and comprehensive process, SamTrans participated in

- One Transportation Response Plan (TRP) Steering Committee meetings held to solicit input from transit operators and other interested agencies, and
- The Transit Workshop on February 12, 2009 review draft mitigation strategies and reach consensus on priorities for mitigation.

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

## The Local Planning Process

Representatives from several District departments met to identify and prioritize appropriate mitigation strategies. Prior to the meeting, general priorities and appropriate departments were

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identified. Personnel involved in the strategy meeting included senior management and staff from Safety & Risk Management, Budget & Grants, and Engineering & Construction responsible for communicating existing efforts on future actions within their area of expertise. The meeting discussed the mitigation strategies, prioritized said strategies, and reviewed preliminary budgets and potential funding sources for strategies designated as “High” priority for facilities owned-and-operated by the three agencies. Following this meeting, the final draft mitigation strategies were forwarded for comment to other departments whose responsibility it is to implement them, as well as to review preliminary budgets and potential funding sources for strategies designated as “High” priority. The Chief of Protective Services – Department of Safety & Risk Management chaired the discussion which included representatives from Planning & Development, Facilities, Operations and Maintenance, Information Technology, Engineering and Construction, Real Estate, Public Affairs, Marketing, Finance, and the Office of Sustainability.

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

This process involved consideration of both the hazard and risk information developed by ABAG and discussed in the overall multi-jurisdictional Local Hazard Mitigation Plan, as well as the assessments of the age and construction type of structures owned by SamTrans and described on page 6. These meetings also discussed the Business Continuity Plan and Short Range Transit Plan already in place at SamTrans. The Business Continuity Plan is planned for revision.

### ***Process for Updating Plan Sections***

SamTrans did not participate in the 2005 multi-jurisdictional Local Hazard Mitigation Plan. Thus, none of the sections in this Annex are updates of a prior Annex.

### ***Public Meetings***

The public will have had two opportunities to comment on the draft Annex

- (1) During a public meeting on September 22, 2009 at a publicly noticed workshop jointly held by MTC, ABAG, and several transit districts and advertised on the ABAG and MTC. No public comments were received from either the meeting or the internet posting.
- (2) The Annex strategies will be posted on both the ABAG website and the District website providing the public with an additional opportunity to comment. The Draft Annex itself was posted for public comment on the ABAG website from April 27 through May 16, 2011. The Draft Annex also has been posted on the SamTrans, Caltrain and Transportation Authority websites between April 27 and May 16, 2011. Any comments received will be incorporated into the Annex.

The SamTrans, Caltrain and Transportation Authority boards of directors will adopt the plan in a public meeting via an official Resolution upon approval by Federal Emergency Management

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Agency. The mitigation strategies will be integrated into the Emergency Operations Plan and Capital Improvement Plan of SamTrans and Caltrain.

SamTrans is committed to affording the public an opportunity to participate when this plan is updated in five years. To improve this process, SamTrans and Caltrain will issue a news release and include information in its customer publications as appropriate.

### Hazard and Risk Assessment

The ABAG multi-jurisdictional Local Hazard Mitigation Plan, to which this is an Annex, lists nine hazards that impact the Bay Area, five related to earthquakes (faulting, shaking, earthquake-induced landslides, liquefaction, and tsunamis) and four related to weather (flooding, landslides, wildfires, and drought). All of these impacts are in the planning region of SamTrans, Caltrain and the Transportation Authority. However, in their role as a transit agency, drought has no impact on the provision of transportation services. All relevant reports developed by SamTrans, Caltrain, and the Transportation Authority have been incorporated into this plan. No additional reports describe the hazard or risk to the SamTrans service area.

SamTrans owns an administration building and adjacent parking garage in San Carlos, two bus maintenance and operations facilities (in San Carlos and South San Francisco) and a bus operations facility (Redwood City). SamTrans also holds title to the Dumbarton Rail Bridge, but that bridge is not currently used for rail service.

Caltrain owns a rail line, the property along the rail line alignment (including 4 tunnels), approximately 25 stations, and station property. Only the San Jose Diridon and San Francisco stations are significant in size. In addition, Caltrain opened a repair facility – the Centralized Equipment Maintenance and Operations Facility (CEMOF) in San Jose.

Potential hazards at these facilities include:

**Earthquake:** None of these facilities are in an Alquist-Priolo Fault Rupture Study Zone. In addition, all of the SamTrans facilities are all in the highest areas of earthquake shaking potential, while the Caltrain stations are exposed to lower (but still high) levels of shaking. While they are also not in the highest categories of liquefaction susceptibility, both bus yards are in areas underlain by Bay mud. The bus operations facility in Redwood City is not underlain by Bay mud, however. None are in areas of expected earthquake-triggered landslides.

**Tsunamis:** The December 2009 version of the CalEMA tsunami evacuation planning maps indicated that the main administration building and the Redwood City facility are not in the tsunami evacuation planning area. However, both bus yards are on the edge of this evacuation area.

**Flooding:** None of these facilities are in the 100-year flood plain.

**Landsliding:** None of these facilities are in an area of existing landslides.

**Wildfire:** None of these facilities are in areas subject to higher than average wildfire threat, but the San Carlos bus yard and the Menlo Park Caltrain station are in a wildland-urban interface threat area.

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**Dam-Failure Inundation:** Two Caltrain stations (the Santa Clara and San Jose Diridon stations) are subject to dam inundation.

**Delta Levee Failures:** The SamTrans and Caltrain facilities are not in an area protected by a levee, or in the Delta.

**Drought:** The operations of SamTrans and Caltrain are not significantly impacted by drought conditions.

**Hazards Conclusion:** The most significant hazards to all of these facilities are earthquake shaking and liquefaction, while wildland-urban-interface fire is a secondary concern. Tsunami evacuation planning also needs to be addressed. This conclusion was based on the hazard exposure information for the facilities of SamTrans and Caltrain facilities, as well as past occurrences of disasters impacting the SamTrans and Caltrain service area described in the following section.

**Risk Assessment of SamTrans:** The main administration building is a braced steel frame building built in 1980, and the 5-story concrete frame parking garage was also built in 1980. These two structures, which house critical equipment and management operations, need to be re-evaluated. In addition, the tilt-up buildings at the bus facilities built in 1984 and 1988 should be re-evaluated based on current engineering procedures. Both facilities are located on Bay mud. The Redwood City facility is a former Greyhound bus depot estimated to have been built in the 1940s. It, too, may need to be evaluated for seismic vulnerability.

In the Loma Prieta earthquake, there was a back fill failure due to liquefaction under one column at the maintenance building at the San Carlos site. This was apparently only a problem with this one column and this one building at this one location.

Also in the Loma Prieta earthquake, there was a problem with the pea gravel back-fill around the underground tanks. It dropped and caused the slabs on top to drop and be damaged. This problem was fixed in San Carlos, but it might want to be done in South San Francisco.

While both bus yards have flooded in the past, the drainage system has been adequate.

**Risk Assessment of Caltrain:** The San Jose Diridon station is a historic building originally built in 1935 rehabilitated by the State of California before being signed over to Caltrain in 1994. The San Francisco station was constructed in 1972. It is unknown if the state conducted a structural evaluation as part of the 1999-2000 expansion. The Burlingame, San Carlos, Santa Clara, and Menlo Park stations are also larger and older and may need a structural evaluation.

### ***Repetitive Loss Properties***

The SamTrans and Caltrain facilities are not repetitive loss properties for flooding.

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

The Loma Prieta Earthquake of 1989 is an example of the kind of large-scale disaster which can strike the Bay Area. It killed 63 persons, injured 3,757, and displaced more than 12,000 persons. With more than 20,000 homes and businesses damaged and more than 1,100 destroyed, this quake caused approximately \$6 billion in damage. Reconstruction continues some two decades later as the replacement for Oakland-Bay Bridge is still several years from completion.

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More information on State and Federally declared disasters in San Mateo County and the SamTrans, Caltrain and Transportation Authority service areas can be found at <http://quake.abag.ca.gov/mitigation/ThePlan-D-Version-August10.pdf>

The SamTrans, Caltrain, and Transportation Authority service areas have experienced a number of different disasters over the last 50 years, including numerous earthquakes, floods, droughts, wildfires, energy shortages, landslides, and severe storms. The most significant disaster impacting the district was the Loma Prieta earthquake.

In the Loma Prieta earthquake, there was a back fill failure due to liquefaction under one column at the maintenance building at the San Carlos site. This was apparently only a problem with this one column and this one building at this one location.

Also in the Loma Prieta earthquake, there was a problem with the pea gravel back-fill around the underground tanks. It dropped and caused the slabs on top to drop and be damaged. This problem was fixed in San Carlos, but it might want to be undertaken in South San Francisco.

### **National Flood Insurance Program**

As transit and transportation agencies, SamTrans, Caltrain and the Transportation Authority are not eligible to participate in the National Flood Insurance Program (NFIP).

### **Mitigation Goals and Objectives**

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

The specific goals of the mitigation program of SamTrans, Caltrain and the Transportation Authority are consistent with this goal. They are to:

- Ensure the safety and security of SamTrans and Caltrain employees and passengers
- Minimize disruption of service to SamTrans and Caltrain passengers
- Minimize damage and loss to SamTrans, Caltrain and the Transportation Authority equipment and facilities
- Speed recovery from any disruption to provide service to SamTrans and Caltrain passengers as quickly as possible

## **Mitigation Activities and Priorities**

### ***Existing Mitigation Activities***

SamTrans, Caltrain and Transportation Authority were not participants in the 2005 ABAG-led Local Hazard Mitigation Plan. However, they have been committed to hazard mitigation for many years.

The two transit agencies have utilized, and will continue to utilize, the latest code standards during the design and construction of any future buildings or facilities in particular related to fire and earthquake mitigation.

SamTrans also has a policy to encourage public transit and to develop green alternatives to people commuting in cars, thus promoting policies that will reduce greenhouse gas emissions.

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

As a participant in the 2010 ABAG multi-jurisdictional planning process, the staff of the San Mateo County Transit District, on behalf of the three agencies, helped in the development and review of the comprehensive list of mitigation strategies in the overall multi-jurisdictional plan; however, the decision on specific priorities for SamTrans and Caltrain were made by the team identified in the section on the Planning Process, and reviewed by the SamTrans General Manager/CEO, who also serves as the Executive Director of Caltrain. The decision on the priority was made based the hazards and risks present in the transit agencies' service area, as well as the hazards and risks specific to their facilities, and past occurrences of natural disasters. The decision on priority was made based on a variety of criteria, not simply on an economic cost-benefit analysis. These criteria include being technically and administratively feasible, politically acceptable, socially appropriate, legal, economically sound, and not harmful to the environment or our heritage. It was decided that the best way to leverage implementation of this plan, was to incorporate it into the District's Business Continuity Plan.

A key priority for SamTrans and Caltrain during the next five years is to take the existing Threat and Vulnerability Assessment and to update the seismic evaluations of key facilities that are 25 to 30 years old. They recognize that this evaluation is essential to determine the extent to which facility retrofits or replacements are needed.

Representatives from multiple departments then met to review progress on the mitigation, to identify and prioritize additional mitigation strategies to be a specific focus for the 2010-2015 period.

These draft priorities were submitted and reviewed by the SamTrans General Manager/CEO (who also serves as the Caltrain Executive Director). The draft priorities will be provided to the SamTrans, Caltrain and Transportation Authority boards of directors for adoption pending pre-approval of this LHMP by FEMA.

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This list includes implementation process, funding strategy, and responsible agency. The full list is included as an attachment to this Annex. In particular, SamTrans, Caltrain and the Transportation Authority plan to focus on obtaining funding to ensure that:

- As funding becomes available, shelving, file cabinets, computer systems, and other nonstructural components of the SamTrans and Caltrain critical facilities will be evaluated and anchored to meet the performance needs of the agency following an earthquake when funds become available (GOVT a-4). The lead on this strategy will be the Facilities group within Engineering & Construction
- As funding becomes available, SamTrans and Caltrain will work with structural engineers and others to ensure that engineers are available to inspect the buildings at its facilities within three days after an earthquake and will encourage staff to talk ATC-21 training (INFR f-1). This task is led by Engineering & Construction. Funding may be needed if upgrades are needed. The need for future funding will be examined if any facilities are found deficient.
- SamTrans and Caltrain are currently seeking funding to update its Business Continuity Plan and have identified funding next fiscal year to develop site-specific Emergency Plans for its facilities (GOVT b-1, GOVT b-2, GOVT b-3). This task is led by Safety & Risk Management.
- SamTrans and Caltrain have recently received a grant from DHS to upgrade its facilities and security control center (GOVT c-4). This task is being led by Safety & Risk Management. No further funding is needed.
- While SamTrans and Caltrain recently constructed a major new facility, most of its buildings are 25 to 30 years old. At the present time, the District staff is looking for sources of funding to evaluate those buildings, particularly the headquarters building and the buildings at the bus yards that are critical to short-term return to operations. Once these analyses are completed, the District will plan to seek funding to upgrade any buildings and structures found to be deficient (GOVT a-1 and INFR a-1). The leads on this strategy are Engineering & Construction, and Planning & Development.

The timetable for these strategies is five to 10 years, depending on the economic recovery of the Bay Area.

The specific strategy priorities of SamTrans and Caltrain are included in the SamTrans spreadsheet attached to this LHMP.

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

SamTrans has, and will continue to use, a variety of project-specific mechanisms to ensure that the projects and mitigation strategies identified as existing or having relatively high priorities in this LHMP Annex are implemented. SamTrans and Caltrain will incorporate the goals, objectives and strategies identified in this annex into their Business Continuity Plan and the Short Range Transit Plan.

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As shown in the attached list, the specific mitigation strategies and priorities will be implemented as part of the SamTrans and Caltrain Short Range Transit Plans., which identifies the overall budget needed for major facilities improvements over a 10-year period. Goals will be incorporated into the Business Continuity Plan. There are no other planning mechanisms available to SamTrans or Caltrain that are appropriate to incorporate this plan. SamTrans and Caltrain are also looking for funding from the grants process to hire a structural engineering firm to reevaluate the structural integrity of its facilities. This assessment would include both the buildings and tanks. The cost of any needed upgrades can only be estimated following the initial assessment.

The final strategies and Annex will be adopted in the same resolution adopting the overall LHMP following Approval Pending Adoption by FEMA by both the SamTrans and Caltrain boards of directors.

Ongoing integration of the policies and programs identified in this Local Hazard Mitigation Plan will occur at SamTrans within the Safety and Risk Management Department.

SamTrans will continue to work with MTC and the transit districts in the Bay Area to encourage them to adopt the Local Hazard Mitigation Plan and to ensure that these mitigation plans are incorporated into an overall regional planning process.

### **Plan Update Process**

As required Disaster Mitigation Act of 2000, SamTrans, Caltrain and the Transportation Authority will update this plan annex at least once every five years, either by participating in a multi-agency effort led by ABAG, or with other agencies as part of a multi-jurisdictional plan.

The Annex is considered a “living document”, and therefore the Safety and Risk Management Department will champion appropriate departments within the agency on follow-through of outlined strategies. Major disasters, notices from ABAG, and legal changes that might affect our service area may impact those strategies. For example, if a structural engineer determines that a major risk exists at one or more buildings at one of the SamTrans facilities, the priority associated with upgrading those facilities will be re-evaluated. In another example, if the need for rail service on the Dumbarton Rail Bridge is identified, that facility would be upgraded to a critical facility and the need for mitigation of any structural deficiencies would be evaluated. Finally, the Annex will be a discussion item on the agenda of the meeting of department heads at least once a year in April. At that meeting, the department heads will focus on evaluating the Annex in light of technological and political changes during the past year or other significant events. The department heads will be responsible for determining if the plan should be updated.

SamTrans, Caltrain and the Transportation Authority are committed to reviewing and updating this plan annex at least once every five years, as required by the Disaster Mitigation Act of 2000. The Safety and Risk Management Department will contact ABAG four years after this plan is approved to ensure that ABAG plans to undertake the plan update process. If so, the agency again plans to participate in the multi-jurisdictional plan. If ABAG is unwilling or unable to act as the lead agency in the multi-jurisdictional effort, other agencies will be contacted, including

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San Mateo County's Office of Emergency Services. Counties and agencies should then work together to identify another regional forum for developing a multi-jurisdictional plan.

SamTrans, Caltrain and the Transportation Authority encourage public participation. All SamTrans, Caltrain and Transportation Authority board meetings are open to the public, and the public is invited to comment on items on the board agendas. The public will continue to be involved whenever the plan is updated and as appropriate during the monitoring and evaluation process. Prior to adoption of updates, SamTrans, Caltrain and the Transportation Authority will provide the opportunity for the public to comment on the updates. A public notice will be posted prior to the meeting to announce the comment period and meeting logistics. SamTrans, Caltrain and the Transportation Authority are committed to improving public participation in the update process over the next five years. To improve this process, they will issue a news release regarding the update and seek input from the public and examine other creative mechanisms to encourage public participation.

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Exhibit A - General SamTrans Bus and Caltrain System Maps



SamTrans buses serve the communities of the San Francisco Peninsula from San Francisco to Palo Alto. Caltrain operates from San Francisco to Gilroy. These same maps are on the transit websites of these two organizations.



**Exhibit B - SamTrans, Caltrain and Transportation Authority 2010  
Mitigation Strategy Spreadsheet**

[Available on LHMP CD or at <http://www.abag.ca.gov/bayarea/eqmaps/mitigation/strategy.html>]