
Airport and Infrastructure Resilience Project Overview

Objective of the Project: Gain a comprehensive understanding of the role Bay Area airports can play in social and economic recovery from a disaster, given their vulnerabilities, interdependencies on regional infrastructure, and capacities.

Project Background: The Bay Area's three commercial airports, (San Francisco (SFO), Oakland (OAK), and San Jose (SJC) serve as an international gateway for business and leisure travelers, and cargo shipments. The airport system is a major contributor to our regional economy. It is essential that this asset be protected from a major earthquake which could disrupt service to the region's international and general aviation (GA) airport system. . Air transportation is a small segment of the Bay Area's transportation system, but it plays a key role in disaster response and recovery activities. To date most transportation disaster planning has focused on restoration of the surface transportation systems (roadways and transit). Little has been done to plan for the restoration of the Bay Area's airport system or understand the role it plays in disaster response and recovery efforts.

Although the Bay Area's three international airports will be part of the response effort, their primary concern is restoration of commercial air passenger and freight service. Some loss of airport and runway capacity at the international airports is to be expected. The increased air traffic generated by the disaster may need to be absorbed by the Bay Area's GA airports and large airports outside the region for a period of time.

A previous report found that in the initial response period after an earthquake, the key role of airports is likely to be related to saving lives by flying in search and rescue teams, earthquake engineering evaluation teams, and critical supplies. It is essential that these roles are consistent with the California Emergency Management Agency (CalEMA) and cities of San Francisco, Oakland, and San Jose planning efforts. During long-term recovery, economic impacts will likely dominate, and the role of airports will include supporting rebuilding and revitalization efforts at all levels, but that role has yet to be defined.

Project Overview

The Airport and Infrastructure Resilience Project is composed of four interrelated components that each seeks to address a component of the overall project objective:

- Airport Liquefaction Susceptibility Analysis
- Role of Airports in Regional Disaster Response and Recovery
- Infrastructure Interdependencies Study, composed of:
 - Sub-Regional Infrastructure Vulnerabilities and Interdependencies
 - Oakland Airport Focus Area Shoreline Resilience Planning (in partnership with BCDC)

The Liquefaction Susceptibility Analysis identifies major runway vulnerabilities at SFO and OAK, as well as the GA airports of Moffett, Livermore, and Buchanan. These findings then inform both the Role of Airports in Regional Disaster Response and Recovery component and the Sub-Regional Infrastructure Vulnerabilities and Interdependencies component, as they inform the vulnerability of regional airports to damage and closure after a disaster. The project will also include a high level discussion of possible roles for all of the Bay Area's GA airports role in local disaster planning activities.

Each component will consist of its own stand-alone report, but all components will be tied together with a comprehensive introduction and findings that addresses the overall project objectives. A project advisory committee composed of various stakeholders and subject matter experts is providing guidance to the study's development. The project will conclude with a workshop to incorporate additional stakeholder input into the final report.

Project outcomes:

- A liquefaction susceptibility assessment of SFO and OAK, as well as the GA airports Buchanan, Livermore and Moffett.
- Understanding at the sub-regional level of the current state of infrastructure systems, including airports.
- A replicable, focused process for deeper understanding the vulnerabilities and interdependencies of an airport, including interdependencies to and from the airport. This will be developed using the Oakland International Airport as a focused study area.
- Better understand the role of airports during regional disaster response and recovery, identify areas for better coordination, and evaluate the capacity of GA airports to serve as backup for the larger international airports.
- Comprehensive understanding of the role Bay Area airports can play in disaster recovery, given their vulnerabilities, infrastructure interdependencies, and capacities.

Project duration: June 2012 through June 2014