FTA

FEDERAL TRANSIT ADMINISTRATION

U.S. Department of Transportation
Federal Transit Administration

REPORT SUMMARY

San Francisco Bay Area Rapid Transit District Pilot Project

San Francisco Bay Area Rapid Transit District (BART) Climate Change Adaptation Assessment Pilot

Agency Overview

The San Francisco Bay Area Rapid Transit District (BART) serves Alameda, Contra Costa, San Francisco, and San Mateo counties in the Bay Area, with a total of 44 stations over 104 miles. Climate change in the Bay Area is a serious issue. Current and future impacts of climate change, including rising sea level, heavier downpours, heat waves, droughts, and wildfires, pose a threat to transit systems and the communities they serve. BART is taking proactive steps to understand and address these threats as they affect the system.

Goals and Objectives

The objective of the pilot study was to develop an evaluation process to assess, at the asset level, the vulnerability and risk of BART infrastructure against climate change impacts and to identify a set of applicable adaptation strategies that may be implemented to increase the resiliency against those impacts.

The study's approach was a focused study grounded on real scenarios. It was intended for the methodology to be repeatable to other study areas and for the findings to be extrapolated to other BART assets.

Key Pilot Project Findings

The pilot study developed a working framework for performing risk assessment on climate change impacts, which will serve as a tool for assessing other assets in BART's transit system.

This pilot study assists BART in taking the first steps towards climate change adaptation. Components of the pilot project include:

1. Evaluate current and future climate hazards on BART infrastructure.
2. Assess and characterize the risks on four assets of BART infrastructure.
3. Develop and implement adaptation strategies against those impacts.
4. Link the strategies to BART's organizational structure and activities.
5. Develop the framework for adaptation with respect to asset management and using life cycle cost analysis.

Climate change hazards considered are sea-level rise, downpours, and flooding. The study focuses on four specific types of assets: station and maintenance facilities, track and aerial structures, train control, and traction power.

Next Steps

The pilot study represents a first step on BART's road to an ongoing effort to adapt to climate change. BART will proactively work towards climate change adaptation so that extreme weather events will not have a catastrophic impact on BART's transit infrastructure. The study has resulted in the development of a suite of tools for addressing climate change, including risk assessment of BART assets, an asset management road map, and use of life-cycle analysis, and the development of applicable adaptation strategies and new responsibilities within the organization to mainstream climate change adaptation. Implementation of these strategies will have long-term benefits to BART against climate change.

About FTA's Climate Change Adaptation Pilot Program

FTA provided just over $1 million in research funding for seven pilot projects (nine agencies) to conduct climate change adaptation assessments from 2011–2013. The main objective of the pilot projects is to advance the state of practice for adapting transit systems to the impacts of climate change. The selected projects assessed the vulnerability of transit agency assets and services to climate change hazards and developed initial adaptation strategies. The findings from the pilot projects can be applied to various size transit agencies nationwide in order to make systems more resilient and adaptable to future climatic hazards.

Project Information

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This research project was conducted by BART, Arup North America Ltd., and Parsons Brinckerhoff, Inc.
For more information, contact Kimberly Gayle, Director, FTA Office of Policy Review and Development, at (202) 366-1429, kimberly.gayle@dot.gov. All research reports can be found at **www.fta.dot.gov/research**.