Adapting to Rising Tides

Transportation Vulnerability and Risk Assessment Pilot Project

Technical Report • November 2011

Acknowledgments

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Jack London Square at the end of Broadway during King Tide

"The San Francisco Bay Area is one of the most economically and ecologically vibrant regions in the world. But it is also critically vulnerable to the impacts of climate change. As a region, it is imperative that we adapt to the impacts of climate change by fostering resilient and sustainable development. This challenge brings us an exciting opportunity to embrace a spirit of stewardship that advances both economic and environmental prosperity." *—Will Travis, Executive Director, BCDC*

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ACRONYMS AND ABBREVIATIONS

AADT	Annual Average Daily Traffic
AADTT	Annual Average Daily Truck Traffic
AAWDT	Annual Average Weekday Daily Traffic
ABAG	Association of Bay Area Governments
AC Transit	Alameda-Contra Costa Transit District
ACFCWCD	Alameda County Flood Control and Water Conservation District
ACTC	Alameda County Transportation Commission
ACPWA	Alameda County Public Works Agency
ADT	Average Daily Traffic
AOGCMs	Atmosphere-Ocean General Circulation Models
ART	Adapting to Rising Tides
BAARI	Bay Area Aquatic Resource Inventory
BART	Bay Area Rapid Transit
BCDC	San Francisco Bay Conservation and Development Commission
CA	California
Caltrans	California Department of Transportation, District 4
C-CAP	Coastal Change Analysis Program
CC	MTC Communities of Concern
CCSM3	Community Climate System Model Version 3
CDC	California Department of Conservation
CO_2	Carbon Dioxide
CO-CAT	Coastal and Ocean Working Group for the Climate Action Team
CT	Consultant Team
CTC	Alameda County Transportation Commission
DEM	Digital Elevation Model
DFG	California Department of Fish and Game
DPW	Alameda County Department of Public Works
DOT	Department of Transportation
EMIC	Earth System Models of Intermediate Complexity
EBRPD	East Bay Regional Park District
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
GHG	Greenhouse Gases
GIS	Geographic Information System
HARD	Hayward Area Recreation and Park District
HOV	High-Occupancy Vehicle
I-	Interstate
ICE	Intermodal Corridors of Economic Significance

IPCC	Intergovernmental Panel on Climate Change
IRRS	Interregional Road System
ITS	Intelligent Transportation Systems
HD	Hydrodynamic
JPA	Capitol Corridor Joint Powers Authority
LOS	Level of use / service
LIDAR	Light Detection and Ranging
MHHW	Mean High Higher Water
MLLW	Mean Lower Low Water
MPO	Metropolitan Planning Organization
MTC	Metropolitan Transportation Commission
MTC-RTCI	Metropolitan Transportation Commission – Regional Transit Capital Inventory
MTL	Mean Tidal Level
NAVD	North American Vertical Datum
NOAA CSC	National Oceanic and Atmospheric Administration Coastal Services Center
O&M	Operations and Maintenance
OPC	California Ocean Protection Council
PMT	Project Management Team (MTC, BCDC, Caltrans)
QA/QC	Quality Assurance/Quality Control
SCC	California State Coastal Conservancy
SCM	Simple Climate Models
SFEI	San Francisco Estuary Institute
SLR	Sea level rise
SR	State Route
SRES	IPCC Special Report on Emissions Scenarios
STAA	Surface Transportation Assistance Act
STRAHNET	Strategic Highway Network
SW	Spectral Wave
SWEL	Stillwater Elevation
TANA	TeleAtlas North America
TD	Transit Dependent
UPRR	Union Pacific Railroad
USACE	U.S. Army Corps of Engineers
USGS	United States Geographical Survey
WETA	Water Emergency Authority
WWTP	Waste Water Treatment Plant