

SCOPE OF WORK

A Resilient Transportation System for Safe and Sustainable Communities

INTRODUCTION:

The San Francisco Bay Area is the fourth largest metropolitan area in the country, with a current population of 7.4 million people. The region, made up of nine counties (Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma), is diverse in every way – from its people to its economy to its environment. A significant proportion of the region's communities, job centers and transportation infrastructure, among other critical assets, are located along the San Francisco Bay shoreline with some locations at the risk of flooding today and others at risk of future flooding due to the changing climate. While the region has been dealing with the current challenge of upgrading an aging transportation infrastructure, we are also now faced with systems that were not designed to be resilient to changes to precipitation, temperature, and increasing flooding due to sea level rise. Given that the Bay Area's expansive and growing transportation network is critical to the health, mobility and longer-term prosperity of Bay Area communities, it is essential the region clearly understands our vulnerabilities to flooding and sea level rise so that we can implement the strategies necessary to make our communities and transportation infrastructure more resilient now and into the future.

The effort outlined in this proposal focuses on ensuring the Bay Area's transportation system becomes more resilient to increased flooding and sea level rise, while also improving the safety and sustainability of our communities, particularly our most vulnerable and disadvantaged communities that are at the frontlines of climate change. To address this challenge, this project will develop a regional vulnerability assessment focused on the Bay Area's transportation infrastructure, Priority Development Areas (PDAs) as identified in the Sustainable Communities Strategy (Plan Bay Area), and the vulnerable and disadvantaged communities as identified in the State of California's CalEnviroScreen tool. The project will also develop a suite of adaptation strategies to improve the resilience of Bay Area transportation assets and communities for inclusion in Plan Bay Area as well as other appropriate local and regional planning documents.

BACKGROUND:

The Bay Area Council's *Surviving the Storm Report* (2015) found that a 150-year storm would cause over \$10 billion in damages to the Bay Area. Sea level rise and potentially more frequent and stronger storm events will increase this risk. Assessments conducted by BCDC's Adapting to Rising Tides (ART) Program have found the region's transportation system has significant vulnerabilities to sea level rise that will impact the people, businesses, and communality that depend on it, including communities with socioeconomic characteristics that put them at even greater risk.

While coastal hazards, such as storm events and sea level rise, will be an issue for all of California, the Bay Area faces some unique challenges. First, some of the highest density development has been built along the Bay shoreline, some on areas that were historically filled, resulting in numerous critical assets and neighborhoods that are on or near the shoreline at a very low elevation with ad-hoc, or no, shoreline protection. For example, the majority of the region's interstates, rail lines that carry passengers and cargo, San Francisco International Airport, Oakland International Airport, several general aviation airports, Bay Area Rapid Transit, and a number of other transit agency assets and services are vulnerable to flooding. Additionally, many of the region's communities are located on the shoreline in low-lying, historically filled areas that are either at risk of flooding now, or are protected by ad-hoc structural shorelines or even by railways or roadways that are not intended to serve as flood protection. In addition, much of the region's future growth, including higher density and affordable housing, is being directed into these areas to capitalize on the nexus with

transportation and other infrastructure assets. While this growth is imperative to our region's continued prosperity, meeting our longer term sustainability goals requires we implement community and infrastructure development in a safe and smart manner that considers resilience to current and future flooding as well as other potential climate impacts.

In recognition of these risks, challenges and opportunities, MTC, BCDC, Caltrans District 4 and the Association of Bay Area Governments (ABAG) have been working together over the last four years through grants and partnerships with the National Oceanic and Atmospheric Administration, the Federal Highway Administration, the Federal Emergency Management Administration and the Environmental Protection Agency. Much of this work has occurred through BCDC's Adapting to Rising Tides Program (ART), which has brought federal, state, regional, local and non-governmental organizations together to study how the region is vulnerable to current and future flooding in order to develop strategies to reduce these risks.

While MTC and BCDC have worked closely with many agencies, organizations and jurisdictions to build an understanding of what the flood risks are for many sectors and types of assets, there have not been enough resources to conduct a complete study that evaluates the vulnerabilities and consequences of flooding on the region's transportation system. This proposal would allow MTC to lead an effort that would be supported by BCDC and include partners from Caltrans District 4 and the Bay Area Regional Collaborative (BARC), as well as federal, state, local and other regional agencies and organizations to evaluate the vulnerabilities and consequences of the transportation network to both current and future flooding. In addition, to illuminate the inter-connected nature of regional vulnerabilities, the project will also assess the risks to vulnerable and disadvantaged communities identified in the State of California's CalEnviroScreen tool, the region's Priority Development Areas (PDAs), as well as critical goods movement corridors, the airports and seaports. Building off the foundational work ART has completed to date at the local, regional, and sector level working with a variety of different partners, and including Caltrans's state-wide climate exposure analysis currently underway in Caltrans District 4, this project will make a clear and compelling case for taking action, and will result in strategies that can be prioritized for funding and implementation.

The four deliverables of this project include: (1) a suite of strategies to address identified vulnerabilities for inclusion in Plan Bay Area that are prioritized for funding; (2) a framework for conducting regional transportation system vulnerability assessments that could be used throughout California; (3) assessment findings that will support Caltrans District 4 in prioritizing investments and actions grounded in a robust process where the public and others have provided input; and, (4) increased public's capacity to understand the risk posed by sea level rise and support action to address these risks by implementing strategies developed in this project

ADVANCING AND ACCELERATING REGIONAL RESILIENCE APPROACHES

The most effective and efficient approach to assessing and responding to current and future flood risks is to develop a uniform approach to exposure mapping, assessing risks, and developing actions across the region. A consistent approach will facilitate funding and action at local, regional, state and federal scales, providing the information and data necessary to pursue strategies ranging from legislative and regulatory changes to site specific action to address local vulnerabilities. As demonstrated by the ART Program, conducting this work at the regional scale will jumpstart planning and action at the local scale because regional assessment findings and actions can be translated and applied at the local level. In addition, engaging locals in regional scale assessments builds capacity for adaptation at all scales by deepening the level of engagement and collaboration, which will be needed to advance planning on issues as critical as climate resilience.

Support through a Caltrans Regional Planning Grant will allow MTC, BCDC, Caltrans District 4, BARC and other key partners to build on the findings, recommendations and relationships that have been developed through work completed and underway in the region. A regional, cross-

jurisdictional, multi-asset effort will not only result in actions that provide multiple benefits and protect multiple assets, but will also allow different agencies, organizations, jurisdictions, interested parties, asset owners, community members and others to assess the potential risks and consequences together and, together, develop actions that work in the real world. The effort will be fundamental to accelerating the pace and scale of planning and investments to support a more resilient Bay Area transportation system for safer and more sustainable communities.

RESPONSIBLE PARTIES:

The project team will consist of the Metropolitan Transportation Commission (MTC) as the lead applicant and the San Francisco Bay Conservation and Development Commission (BCDC) as the sub-applicant. The Project Team will also include staff from Caltrans District 4, as well as Caltrans Headquarters and the Bay Area Regional Collaborative (BARC). The project will build on existing work and partnerships described above. Additionally, the project team will work closely with nonprofit and community based partners through the Great Communities Collaborative, housed at the San Francisco Foundation, to develop a robust engagement process focused on ensuring the needs of vulnerable and disadvantaged communities are brought to the forefront in planning and implementation, ensuring values of environmental justice and social equity are fully understood and outlined, and integrated into the decision-making process moving forward.

Key Stakeholders

- National Oceanographic Atmospheric Administration (NOAA)
- Federal Emergency Management Agency (FEMA)
- Association of Bay Area Governments (ABAG)
- Bay Area Rapid Transit Authority (BART)
- Capital Corridor JPA
- San Francisco Municipal Transportation Agency (SFMTA)
- County flood control agencies
- The San Francisco Foundation

Key Transportation Assets:

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| ○ Interstates (I-80, I-880, I-580) | ○ Rail (heavy and light) |
| ○ State Routes (SR-37, SR-237) | ○ Bus routes |
| ○ US Route 101 | ○ San Francisco Bay Trail |
| ○ Toll plazas and bridge approaches | ○ Ports of Oakland, SF, Richmond |
| ○ Local streets and roads | ○ San Francisco International Airport |
| ○ Ferry service | ○ Oakland International Airport |

OVERALL PROJECT OBJECTIVES: As stated above, this effort will build upon existing plans and studies and expand partnerships to advance actions that improve the resilience of the Bay Area transportation system, promote sustainable, safe and healthy communities, and increase participation of socioeconomically vulnerable communities in both the fact finding and decision making processes. The objectives of the project, outlined below, will advance State and Federal Transportation Planning Goals, and are closely aligned with the Caltrans Mission, the Grant Program Overarching Objectives, and the CTP 2040 Vision.

Objective 1: Conduct a robust, region-wide assessment of the transportation system, Priority Development Areas (PDAs) and disadvantaged and vulnerable communities as identified in the State of California's CalEnviroScreen tool

This project objective aligns closely with the Caltrans Mission of providing "a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability" because without an understanding of the flood risks the Bay Area transportation system faces the region cannot maintain or expand the transportation system in a manner that is resilient to climate change so it can continue to support economic, environmental and social prosperity.

Objective 2: Develop a suite of actions to be advanced at agency, local, regional, state and federal scales, including early and priority actions for transportation assets and services.

This project objective is to arrive at a suite of adaptation strategies and implementation options that can be advanced by Caltrans District 4 as well as the various project partners and stakeholders that own, manage, or have a stake in the infrastructure, services and communities considered. This objective will help ensure that the CTP 2040 vision of a "transportation system that is safe, sustainable, and globally competitive" can be met in the Bay Area. The actions identified will improve public safety and security by helping the region adapt to achieve the safety and security of people, goods, services, and information that rely on all modes of transportation.

Objective 3: Engage partners and stakeholders in an inclusive process where different ideas, values, and knowledge sets are leveraged to ensure that findings and outcomes are being addressed at appropriate scales, with a focus on robust representation and engagement of representatives of vulnerable and disadvantaged communities.

The project will include diverse partners and stakeholders, including representatives of socioeconomically vulnerable communities as identified by the CalEnviroScreen tool, and including those within the MTC Communities of Concern, so that the findings can be grounded in local knowledge and the solutions can be as broad and multi-benefit as possible. This objective will support the State Transportation Goal to "Foster Livable and Healthy Communities and Promote Social Equity" and the CTP 2400 Vision for "resilient multimodal system supports a prosperous economy, human and environmental health, and social equity".

Objective 4: Increase regional agreement on the tools, processes, models and data used in adaptation planning to build capacity among federal, state and local agencies, organizations to work together towards multi-benefit, shared solutions that are based in robust, inclusive assessments that can support the decision making necessary to take action.

The project will help to advance the use of a uniform regional methodology to assess the flood risks of transportation assets and those that are served by them, or rely on them. This objective aligns with the Federal Transportation Goal to "protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns". It will also help to support a vibrant Bay Area economy and promote environmental stewardship as one of the basis for taking action together to promote all frames of sustainability will be achieving a shared and agreed upon understanding of the risks faced.