WEST DUMBARTON BRIDGE SEA LEVEL RISE PROJECT

DIVISION OF TRANSPORTATION PLANNING & LOCAL ASSISTANCE

VISHAL REAM-RAO

Caltrans Bay Area INNOVATION FAIR 2022

A Need for Partnerships

Complex problems often require complex solutions. Climate change impacts, such as sea level rise, extreme heat, wildfire, changes in precipitation, often span jurisdictional boundaries, are usually very expensive, and require a combination of inter-disciplinary knowledge areas (planning, design, ecology/environmental, permitting, and more) to implement successful adaptation projects. One agency alone does not have the required skills, knowledge, and resources to address climate change impacts. These realities necessitate early, frequent, and ongoing cross-agency and cross-divisional collaboration and partnership-building.

- There will be a growing need to plan, design, and construct adaptation projects to benefit both the State's transportation network as well as surrounding communities and infrastructure as climate change impacts become more frequent, costly, and severe.
- Cross-agency partnerships also help to advance protection of our most vulnerable communities, many of which are on the 'front lines' of climate change, are the least likely to adapt, and are slowest to recover after climate disasters.
- SR 84/Dumbarton Bridge is one such location in need of collaborative interim and long-term adaptation solutions.

Dumbarton Bridge West Approach: Key Considerations

- SR 84/Dumbarton Bridge serves as a vital east-west transportation link, seeing over 81,000 vehicle trips and about 120 bicycle and pedestrian crossings daily, connecting San Mateo County and Alameda Counties.
- Any closure would compromise the region's mobility and connectivity, forcing traffic to detour along already-congested freeways and through numerous local communities.
- Local routes, The Bay Trail, vital utility infrastructure, and sensitive habitat space in the area are also vulnerable to flooding, including many in the disadvantaged community of East Palo Alto, as well as the surrounding cities of Menlo Park, Palo Alto, and others.
- The western bridge approach area and surrounding communities of Menlo Park and East Palo Alto were identified as vulnerable to 24" of sea level rise by as early as 2050.

Western span of Dumbarton Bridge on a sunny day.

Water pooled near Dumbarton Bridge approach lanes.

D4 CURRENT PLANNING ACTIVITIES

- In 2022, D4 secured Non-SHOPP PID funding to begin studying short-, mid-, and long-term adaptation needs and options at SR 84/Dumbarton Bridge.
- Ongoing coordination with local partners, including San Francisquito Creek Joint Powers Authority (SFCJPA) and Strategy to Advance Flood protection Ecosystems and Recreation along San Francisco Bay (SAFER Bay).
- Supporting partner agency efforts to secure grant funding for various locally-funded bay shoreline restoration projects that improve habitat and ecological conditions in this area, while also providing co-benefits of protecting the bridge and approaches from flooding.

District 4: Climate Adaptation Partnerships

Planning and Local Assistance

Vishal Ream-Rao

2020 Dumbarton Bridge West Approach + Adjacent Communities Resilience Study

Current and future adaptation planning efforts will be based on past studies, primarily a study conducted in 2019 and published in 2020, funded in-part by Caltrans SB-1 Adaptation Planning Grant funding.

Overview

Title: *Dumbarton Bridge West Approach + Adjacent Communities Resilience Study*
Funding: $300,000 ($200,000 SB-1 Adaptation Planning Grant plus $100,000 BATA contribution).
Study Timeframe: *January 2019 to June 2020.*
Agency Involvement: MTC was the lead agency supported by a project team that included the San Francisquito Creek JPA, BCDC, BARC, the City of East Palo Alto, the City of Menlo Park, and Caltrans District 4.

Study Objectives

- Develop a plan to provide near- and long-term flood protection for the SR 84/Dumbarton Bridge west approach and adjacent communities, while promoting the ecological and social resilience of the surrounding lands and communities.

Outreach

- A broad and diverse Stakeholder Working Group was formed to improve the understanding of how the project area is vulnerable to sea level rise (SLR) and flooding, how SLR affects the community and various assets, and to provide input on the development of adaptation strategies.
- The project team also partnered with community groups such as Nuestra Casa and Acterra to build community capacity through existing networks and conducted different outreach activities with different approaches to facilitate meaningful feedback.
- Local knowledge and stakeholder expertise informed the adaptation alternatives evaluation framework and criteria, based on engineering, environmental, social, and transportation categories.

Study Findings

The project team ultimately formulated three alternatives for the project area:

Alternative 1 – Near-Term: Interim Flood Protection and Restoration Preparation
Provides flood protection strategies to mitigate against smaller flood events (MHHW +24") intended to lessen the frequency and magnitude of flood impacts until a long-term alternative is implemented.

Alternative 2 – Long Term: Protect in Place
Provides flood protection to critical infrastructure and the community by protecting assets in place from up to 83 inches of sea level rise (end-of-century time frame).

Alternative 3 – Long Term: Raise the Road (2 options)
Like Alt. 2 but recommends raising SR 84 on a causeway to protect the highway from sea level rise and flooding, reduce the length of levee required, and allow for hydrologic and ecological connectivity.

For more information, please contact Vishal Ream-Rao (D4 Climate Change Planning Coordinator):
Vishal.Ream-Rao@dot.ca.gov