Two New Sea Level Rise Projects for the Bay Area
Climate Readiness Institute, UC Berkeley and Partners
bruce@climatereadinessinstitute.org

Multi-Scale Infrastructure Interactions with Intermittent Disruptions: Coastal Flood Protection Infrastructure, Transportation, and Government Networks
UC Berkeley Professor Mark Stacey (Civil & Environmental Engineering) leads this 4-year, NSF-funded project that is exploring how coastal flooding, shoreline infrastructure, the transportation system, and decision-makers interact in the Bay Area.

Academic Investigators: Mark Stacey (UC Berkeley), Mark Lubell, (UC Davis), Samer Madanat (UC Berkeley), Alexei Pozdnukhov (UC Berkeley), Patrick Barnard (U.S. Geological Survey), Li Erikson (U.S. Geological Survey), William Collins (Lawrence Berkeley Laboratory), Bruce Riordan (Climate Readiness Institute)

Practitioner Partners: Regional and state agencies (e.g., BCDC, MTC, ABAG, Caltrans, Coastal Conservancy), local governments and special districts (e.g., cities, counties, flood control, water), and non-profit organizations (e.g., BAECCC, SFEI, CHARG, RCI)

Expected Key Products and Outcomes:
- Quantify the impacts of shoreline infrastructure decisions at one location on flooding outcomes at others around the bay and develop a tool that will analyze flooding and inundation impacts for a wide range of shoreline and bathymetry scenarios.
- Identify and analyze the disruption to the transportation network from direct inundation.
- Define the governance scale/structure making decisions about sea level rise and coastal flooding.
- Compare the environmental, transportation and governance structures to evaluate the suitability of existing decision-making systems to address local and regional issues associated with sea level rise and coastal flooding.

Strategies for Adapting to Long-term Sea Level Rise in the San Francisco Bay Area
UC Berkeley Professor Kristina Hill leads this 2-year, CRI-funded project that is identifying and analyzing innovative strategies for physical adaptation to sea level rise in San Francisco Bay.

Practitioner Partners:
Regional and state agencies (e.g., BCDC, MTC, ABAG, Caltrans, Coastal Conservancy), local governments and special districts (e.g., cities, counties, flood control agencies, water districts), and non-profit organizations (e.g., BAECCC, SFEI, CHARG, RCI)

Expected Products and Outcomes:
- Test a typology of adaptation strategies against a set of actual and proposed adaptation projects from the Bay Area, to see whether it can include a sufficiently wide range of approaches—levees with floodwalls, levees alone, mounded earthen fill areas, tide gates, extensive wetland restorations, and beach restorations.
- Use the typology diagram to organize a broad set of adaptation approaches that have been used or proposed in the Bay Area to understand what has been tried and what has not, and revealing which are commonly proposed and which are still rare.
- Identify segments of the Bay shore zone where these selected strategies may be most useful, based on existing and predicted conditions.
- Provide input to the CRI research of Stacey et al, in the form of physical shore zone adaptation proposals, so that appropriate shore adaptation proposals may be tested using the USGS CoSMoS model to predict flooding impacts.
- Based on a set of defined criteria developed with partner organizations, identify and describe the physical adaptation strategies that are most likely to succeed in the complex ecological, economic, political context of the Bay Area.