

LEAD ORGANIZATION The City and County of San Francisco

> STATE California

TYPE OF ADAPTATION Urban Resilience & Preparedness

### Sustainab Communit

### AMERICAN SOCIETY OF ADAPTATION PROFESSIONALS

**SNAPSHOT Guidance for Incorporating Sea Level Rise into Capital Planning in San Francisco** 

### Challenges

In regions threatened by sea level rise and other climaterelated hazards, coastal cities often lack the tools they need to make decisions on how to allocate funding and plan longterm investments and major capital projects. In the Bay Area, projected 36-66-inch sea level rise threatens roads, treatment plants and the San Francisco and Oakland airports. Along many coastal zones, residential and commercial properties are threatened with inundation from rising seas.

### **IMPACT AREAS**

Built Environment, Coastal, Governance, Land Use, Measurting Success, Natural Resources, Policy, Research, Stakeholder Engagement, Urban, Water

### CHALLENGES

22 projects within the 108 in. Sea Level Rise Vulnerability Zone. CHALLENGES

San Francisco faces 36-66 inches of sea level rise by 2100

# Solutions

Under the direction of Mayor Ed Lee, the City and County of San Francisco created the city's first official policy directing its response to the threat of sea level rise: <u>Guidance for Incorporating Sea Level Rise into Capital Planning in San Francisco: Assessing Vulnerability and Risk to Support Adaptation</u> (the Guidance). Adopted in 2014, this policy is concluding its second implementation cycle and has led to modification of several capital projects in the city. The Guidance, developed by a multiagency committee led by the San Francisco Public Utilities Commission, has proven an effective tool in evaluating the sea level rise vulnerability of capital investments in the city's Ten-Year Capital Plan. The Guidance helps engineers, planners and the city's Capital Planning Committee evaluate the vulnerability of projects and begin adaptation planning by providing:

- 1. Findings on best available science based on extensive research into several authoritative sources (see Appendix 2 of the Guidance).
- 2. An approach to vulnerability assessment incorporating exposure, sensitivity and adaptive capacity.
- 3. An approach to risk assessment in the context of uncertainty, including instructions on how to assess the adaptive capacity of critical assets.
- 4. Guidance on adaptation plan development.

SOLUTIONS Over 100 project managers have been trained to use the Guidance

#### SOLUTIONS

Easy-to-use, easy-to-replicate Sea Level Rise Checklist SOLUTIONS

Paving way for comprehensive approach for all public and private shoreline assets

## Results

### Implemented Project: Fireboat Pier

A San Francisco Bay fireboat pier selected a floating pier design consistent with the Guidance approach to planning for sea level rise. Project managers considered public safety and identified a 75-year life cycle, recognizing the uncertainties that characterize sea level rise during that period.

### Implemented Project: Wastewater Treatment

The San Francisco Public Utilities Commission is developing a multi-billion dollar Sewer System Improvement Program. The most prominent asset in this program, the existing Southeast Wastewater Treatment Plant, is within the Guidance's Vulnerability Zone. Project managers are revising design elevations for its headworks and biosolids components to make them resilient to a combination of sea level rise and a 100-year storm.

### Replication in the Region

Numerous jurisdictions, both in the Bay Area and nationally, have made use of the Guidance in their own work. The Guidance committee's science vetting process revealed shortcomings in State of California



SF Traffic Company & Forensic Services Division

guidance documents, which omitted mid-range projections for sea level rise, including only uppermost and lowermost projections. These omissions hindered local decision-makers who needed information on "most likely" scenarios as well as ranges. San Francisco's Guidance helped establish the current statewide consensus on using National Resource Council projections in particular, and sea level rise projections in general, in a coherent manner for planning, aiding decision-makers across California.

# **Upcoming Projects**

### Police Station Project

The San Francisco Police Department (SFPD) is grappling with adaptation challenges associated with public safety buildings along the San Francisco Bay shoreline. Project managers are defining a new traffic management building's "functional lifespan" and determining elevations required to maintain resilience and accommodate the sea level rise scenarios in 2100 and additional surge from a 100-year storm. Project managers are working to balance tomorrow's resilience with today's ratepayer costs—a critical exercise for any redesign—to create a new SFPD facility with resilience features not envisioned in past capital cycles.

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