

# THE BOND BUYER

## How bonds and grants help fight a rising San Francisco Bay

By

**Imran Ghori**

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Around the San Francisco Bay, government agencies are taking increased precautions against rising sea levels and looking to federal grants and bond financing to protect their shores from flooding.

A coalition of South Bay cities and other local agencies last week celebrated the award of \$177 million in federal funding to improve levees along Santa Clara County's bayshore. In San Francisco, voters will decide in November whether to approve a \$425 million bond measure to strengthen a seawall.

In Foster City, about 20 miles south of San Francisco, voters approved a \$90 million bond measure in June to strengthen the levees along the city's shore.

U.S. Sen. Dianne Feinstein, D-Calif., who attended last week's event for the South San Francisco Bay Shoreline Project, said the Bay Area needs to work together in dealing with the increased flooding risk posed by climate change.

"The risk of not doing it is so great," Feinstein said.

She noted that parts of the South Bay shoreline are already below sea level and vulnerable to sudden rises in the tide.

"It's a real alarm signal that things about global warming are likely to happen very quickly in some big event and we need to be prepared for it," Feinstein said.

The South Bay Shoreline Protection Project involves 18 miles along the Santa Clara County bayshore traversing several cities from Palo Alto to Milpitas. Under the plan, a traditional coastal levee combined with restored wetlands will be used to protect the region from flooding.

The \$177 million will front the costs of building the first phase — a four-mile segment that includes north San Jose and the city's Alviso neighborhood and 3,000 acres of marshland ponds. The U.S. Army Corps of Engineers is handling

design and construction and is working with agencies including the California State Coastal Conservancy and the Santa Clara Valley Water District, the local project sponsor.

The federal government will ultimately pay \$74 million of the project with the state and local agencies paying back \$103 million, said project engineer James Ujah with the Santa Clara Valley Water District.

The project will provide flood protection to area freeways, homes and businesses in the Silicon Valley that include tech giants like Google, Facebook and Cisco, he said.

Planning for the project began in 2003 when the California Coastal Conservancy purchased thousands of acres of tidal marshland that had been used for salt production for decades. Local officials wanted to restore the marsh habitat but that involves removing earthen berms that have provided flood protection for years, Ujah said.

Those berms weren't properly engineered for flood control and will be replaced by clay levees up to 15 feet high — which will be about five to seven feet higher than the existing berms, he said. A recreational trail connecting the South Bay shore featuring observation platforms will be built on top of the levees.

Construction on the first phase is expected to begin in the fall of 2019 and take five years to complete, Ujah said. Officials don't know yet the timeline for the remaining segments of the project.

The first segment was chosen because it's the most vulnerable and is expected to experience a sea-level rise of half a foot to two and a half feet over 50 years, Ujah said.

"I think this is something the whole of the San Francisco Bay is aware of and various agencies and environmental groups are taking the challenge on in bringing this forward and addressing these issues before it's too late," he said.

San Francisco has cited a sense of urgency with a \$500 million project to rebuild a seawall that protects three miles of the city's waterfront from Fisherman's Wharf to Mission Creek near the San Francisco Giants' bayfront stadium, AT&T Park.



The South Bay Shoreline Project will build levees and restore tidal marshland along 18 miles of the Santa Clara County, California shore of San Francisco Bay. **Santa Clara Valley Water District**

A 2016 survey found that the seawall — built in the 1910s — sits on unstable soil that could cause the structure to slip during a major earthquake. Rising sea levels due to climate change have also increased flood risk, according to a city report.

The seawall protects \$102.1 billion in property value in an area representing \$24.6 billion in economic activity, according to the city report.

Under a plan by the Port of San Francisco, which maintains the seawall, the city would spend \$500 million to repair and strengthen the seawall with measures that include strengthening the ground underneath the wall and replacing or retrofitting wharves, piers and bulkheads.

The bond measure, which requires two-thirds voter approval to pass, is supported by city and business leaders as vital to protect the city's economy. It would provide \$425 million with local, state and federal funds funding the rest.

Concerns about rising seas are reflected around the San Francisco Bay. In June 2016, voters in the nine-county region approved a ballot measure imposing a property parcel tax of \$12 per year, to raise approximately \$25 million annually for 20 years to fund shoreline protection and restoration projects.

In April, the San Francisco Bay Restoration Authority, which is responsible for allocating funding raised by Measure AA, approved the first \$18 million in grants for wetland restoration.

Foster City is furthest along with its plans, which could be under construction by early next year and take two years complete, City Manager Jeff Moneda said.

The city was spurred to act by a 2016 Federal Emergency Management Agency coastal flood study report that said levees along the shoreline do not meet minimum flood protection standards and without improvements Foster City would be designated a flood hazard area.

Under such a designation, property owners would be required to purchase flood insurance at a cost of \$2,000 to \$3,000 a year, city officials said.

"The levees are our most important asset," Moneda said. "They protect all properties from flooding. Not only would it impact residential land values and commercial values, it would also impact our ability for emergency responders to get to our citizens."

The \$90 million project would raise levees by up to eight feet while also raising the shoreline trail so as not to block views. It will consist of a hybrid design with a sheet pile wall along five miles and an earthen levee and retaining wall for three miles.

Moneda said the city couldn't wait for a regional solution, so it moved ahead with its plan, but he expects other San Mateo County cities to follow suit. Measure P to authorize the bonds garnered more than 80% of the vote.

Preliminary discussions are now taking place about forming a regional flood control district, Moneda said.

Foster City Mayor Sam Hindi said he's not surprised that residents strongly supported the bond measure or that agencies around the Bay Area are starting to take action.

“In my view, the Bay Area is ground zero with regards to sea-level rise risk and given the potential risk of loss of life and property, it is prudent that we plan and act proactively to protect our community and its assets,” Hindi said. “The economic role of this region to the well-being of the U.S. economy and the world makes it even more important to face the challenges of sea-level rise.”