

S A N M A T E O C O U N T Y

# Adaption Complexities Spur Planning Innovation

**CARIAD HAYES THRONSON, REPORTER**

Driving over the Bay flats toward the Dumbarton Bridge's western approach, it's easy to imagine how a few feet of sea-level rise could submerge the roadway. The bridge touches down only 750 feet from the shoreline, and the approach skims just above the fill it's built on. With at least three to six feet of sea-level rise a virtual certainty by the end of the century, the approach and adjacent communities are the focus of a new multi-agency resilience study scheduled for release in June. The study, with participants including the Metropolitan Transportation Commission, San Francisquito Creek Joint Powers Authority (SFCJPA), CalTrans, cities of East Palo Alto and Menlo Park, and the Bay Area Regional Collaborative among others, is the most recent example of the integrative approach to climate adaptation that characterizes many of the county's efforts.

## Different Worlds

The section of Interstate 280 that runs down the middle of San Mateo County has often been called the "World's Most Beautiful Freeway," offering panoramic views of the Santa Cruz Mountains and Crystal Springs Reservoir, as well as the occasional glimpse of San Francisco

Bay. From the highway, the traveler might not guess at the vastly different worlds on either side. To the east lie almost all of the county's 20 cities, encompassing the spectrum of socio-economic conditions, including leafy Silicon Valley suburbs, tech mogul estates, and low-income communities perched at the edge of the Bay, as well as transportation infrastructure that includes Highway 101, two transbay bridge approaches, and San Francisco International Airport. West of 280, beyond the wooded mountains, hundreds of square miles of farmland and open space, as well as the beachside towns of Half Moon Bay and Pacifica, spill to the edge of the Pacific Ocean.

Over the past decade, the county has made responding to climate change a priority, establishing several new programs within the Office of Sustainability. The Climate Ready Collaborative brings together leaders from different sectors and jurisdictions to explore adaptation solutions, while SeaChange SMC focuses specifically on sea-level rise.

Wildfire and excessive heat are emerging as local climate concerns, but it is water — too much of it — that worries local officials most. With shore on both sides, San Mateo County is considered the California

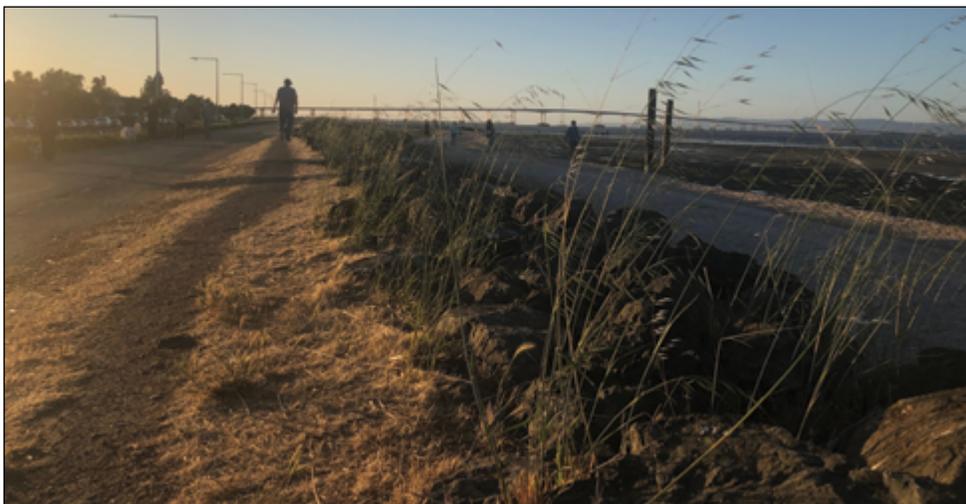
county most at risk from sea-level rise, at least in dollar terms. A vulnerability assessment completed in 2018 found that in a mid-range sea-level rise scenario, property worth \$34 billion would be flooded on the bayshore and the coast north of Half Moon Bay. Facing that reality, the county's leadership has undertaken some of the Bay Area's boldest steps toward protecting its shores.

## Flood Control for a Changing Climate

Traditional flood control agencies don't have the flexibility and resources to help multiple cities collaborate to confront the climate change hydra of rising seas, coastal erosion, flooding from major storms, and higher groundwater levels. Recognizing this, in January 2020 the county transformed its long-standing but limited flood control district into a new countywide Flood and Sea-level Rise Resiliency District. "It's not realistic to think that each city could address these challenges singlehandedly," says County Supervisor Dave Pine, chair of the new District's Board of Directors. "We wanted to create an organization that could work across jurisdictions and create expertise for the long run."

One of the new agency's initial priorities is addressing flooding at Bay-front Canal, a sliver of Redwood City and unincorporated San Mateo County that has flooded "in almost any size storm" for decades. Atherton, Redwood City, Menlo Park, and the County all have an interest in the project, which would reroute canal flows to the nearby Don Edwards San Francisco Bay National Wildlife Refuge.

"Historically, these entities haven't been able to collaborate in the way that's needed to make progress," says Pine. "The new district can act as a quarterback to push the project forward." Pine says the district has a design and is currently seeking permits and developing a new agreement among the partners to fund construction.



*In 2018 Foster City voters approved a \$90 million general obligation bond to fund raising the city's levee by five feet. Construction is expected to begin in fall 2020. Photo: Adele Thronson*

Potential new initiatives for the District include a shoreline protection project along the Burlingame-Millbrae Bayfront, where the two cities have conducted vulnerability assessments. Such a project would be aligned with San Francisco Airport to the north and might include Oculus, Facebook's virtual reality venture, which will soon occupy a new office complex on the Burlingame shore. Additionally, says Pine, the District is committed to identifying projects along the county's coastline to champion. The District will focus its initial efforts in or north of Half Moon Bay, but SeaChange SMC's South Coast Sea-level Rise Study, a vulnerability assessment for the coast south of Half Moon Bay now underway, may suggest new possibilities.

## Setting a Precedent

The new resilience district is not the county's first collaborative effort to tackle large-scale flood protection. Near the border with Santa Clara County, the SFCJPA — which includes the new District, the cities of Palo Alto, Menlo Park, and East Palo Alto, as well as Valley Water — is continuing a multi-project effort to prevent flooding from storms and sea-level rise along the creek and at its mouth. In 2018, it completed the largest multi-jurisdictional sea-level rise project in California along the Bay shoreline, and last September, the SFCJPA board certified the final EIR for its Upstream of Highway 101 project, which will address persistent flooding in its three cities. Phase One of the project will protect against a 70-year flood event by widening the creek channel and replacing two bridges. A second phase is now be-

ing studied to provide 100-year flood protection through a combination of raised banks downstream and retention basins built upstream on Stanford University land.

The joint powers authority's other project, called SAFER Bay, covers 11 miles of shoreline, from Palo Alto's southern border to Redwood City. In 2019 the SFCJPA completed a feasibility study of alternatives for protecting the Palo Alto portion, which is now in the hands of the city. For the San Mateo County portion of the shoreline, the authority is in the process of designing and performing environmental analysis for a combination of horizontal levees and other features in East Palo Alto and Menlo Park, near the Dumbarton Bridge and the South Bay Salt Pond Restoration project.

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## WATERWAYS

### Simple and Powerful for Colma Creek?

At South San Francisco's Colma Creek, one of the sites of the 2018 Resilient by Design Bay Area Challenge, the Hassell+ team received a grant from the Bay Area Regional Collaborative — and later a Priority Conservation Area grant — to develop "the simplest and most powerful idea in our proposal," according to Hassell's Richard Mullane. That idea is to adapt and restore the

creek's native ecology to improve flood risk and create public access along the creek corridor to the waterfront. Mullane expects to release a report in July that will outline various scenarios and rank their costs vs. benefits. "We're hoping to get a continuous pedestrian and bike connection all the way along the creek over, under or around 101," he says. "We'll also highlight funding opportunities at a regional and state level because we really think that's part of our commitment to the city [of South San Francisco], rather than just making big, beautiful images and putting pressure on a small city to deliver."

The report will also include a toolkit for other communities. "We think Colma Creek is fairly typical of conditions in many cities around the Bay," says Mullane. "We found 40 creeks that previously connected communities to the Bay but are now cut off by a freeway and flood. Everybody's seeing this opportunity to restore them, and turn back towards them, for amenities and recreation." Mullane says the report will describe the trade-offs between restoration, flood management, and public access and show how those objectives can be balanced. **CHT**

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*The Colma Creek corridor project would connect the community with the shoreline. Source: Hassell*



“The first phase of work is to protect about 90% of East Palo Alto properties, and, in Menlo Park, restore two former salt ponds,” says Len Materman, who headed the SFCJPA for more than 11 years before taking the helm at the new county-wide District on May 1. “If we restore both ponds, it’s over 600 acres that would be mitigation for the impacts of protecting both cities.”

The SFCJPA is also one of the one of the participants in the Dumbarton Bridge study. In addition to homes, businesses, habitat, and transportation infrastructure, the study area contains a PG&E substation, a fire department training facility, and Facebook’s headquarters, all of which are vulnerable to flooding from sea-level rise. The goal of the study is to develop adaptation alternatives for the area, including either building a levee along both sides of the bridge approach, or raising it and placing it on a causeway. How the choice among alternatives will be made — and who will make it — remain unclear.

### Funding Questions Remain

Also unclear is who will foot the bill to tackle Dumbarton’s update and many other critical projects. “As of now we don’t have funding for concrete next steps,” says MTC’s Stephanie Hom. “Some of the partner agencies will continue to look for opportunities to move the work forward in whatever capacity that may be.” She expects the partners will work closely with the new resiliency district.

Indeed, one of the priorities of the new district is to develop a long-term funding strategy. “We need to [consider whether the] county should have one or more mechanisms to fund these projects rather than hunting for grants or cobbling together money from city general funds or special taxes,” says Materman. “As the county is thinking holistically about planning, it will also think holistically and creatively about funding” Of course, the ultimate costs are unknowable, as sea-level rise has no fixed end date. “You can’t simply come up with a plan, implement it, and call it a day,” says Pine. “It’ll be a challenge we have to confront for many, many decades or longer.”

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Dumbarton Bridge Resilience Study project area. Source: MTC. Top: Bridge causeway close to sea-level. Photo: Caltrans/John Huseby