

NEW MAJOR PROJECTS

1 Redwood Landfill
420 acres, landfill, recycling and compost facility
WHERE: Novato
STATUS: Legal challenge denied
DEVELOPER: Waste Management
KNOWN COST: \$39.6 million
INCLUDES: Project cost estimate (for a new energy plant on the premises), land value

In 2006, a group of North Bay residents raised flags over developer Waste Management's interest in expanding its 420-acre landfill and recycling facility. After Marin County certified the project's 2008 environmental impact report, the group sued the county in part because of what it called an inadequate plan for adapting to sea level rise. Under the plan, every five years the facility's operators are to assess, using the latest scientific projections, whether levees surrounding the property are tall enough to prevent ocean waters from flowing in, carrying waste to San Pablo Bay. Per this plan, Waste Management raised a levee once, in 2008, said Rebecca Ng, the county's deputy director of Environmental Health Services. Waste Management did not respond to a request for comment.



Artist rendering of Richmond Terminal One.

Courtesy of Terminal One Development

2 Richmond Terminal One
13 acres, residential with public trail and park
WHERE: Richmond
STATUS: Construction to begin late 2017
DEVELOPER: Terminal One Development and Lacionia
KNOWN COST: \$14 million
INCLUDES: Land value, fees

This project will entail 21 single-family homes, as well as five condominium buildings containing a total of 295 flats, on a former oil- and gas-storage facility next to the Richmond Yacht Club. To adapt to a projected 3-foot increase in sea level and to mitigate storm damage, the buildings will be set inside the Bay Trail, to be built at nearly 11 feet above current sea level.

3 Pier 29, Embarcadero
Approximately 20,000-square-foot commercial development, within 123,000-square-foot pier
WHERE: San Francisco
STATUS: In approval process
DEVELOPER: Jamestown
KNOWN COST: \$5.8 million
INCLUDES: Project cost estimate

This pier, on San Francisco's Embarcadero, was built in 1915 and was to be used as an event space for the 34th America's Cup before a fire damaged the structure in 2012. It has been rebuilt and the Port of San Francisco is negotiating a lease with developer Jamestown to add commercial space to its bulkhead, which is one-fifth of the total building site. The Sierra Club and other groups have objected, saying the space should be for recreational purposes, but the city said it needs the tax revenue it would receive through the planned use. The Port of San Francisco, which owns the land, will work with the developer to make an adaptation plan for future sea level rise, said Port Commission spokesperson Renée Martin.

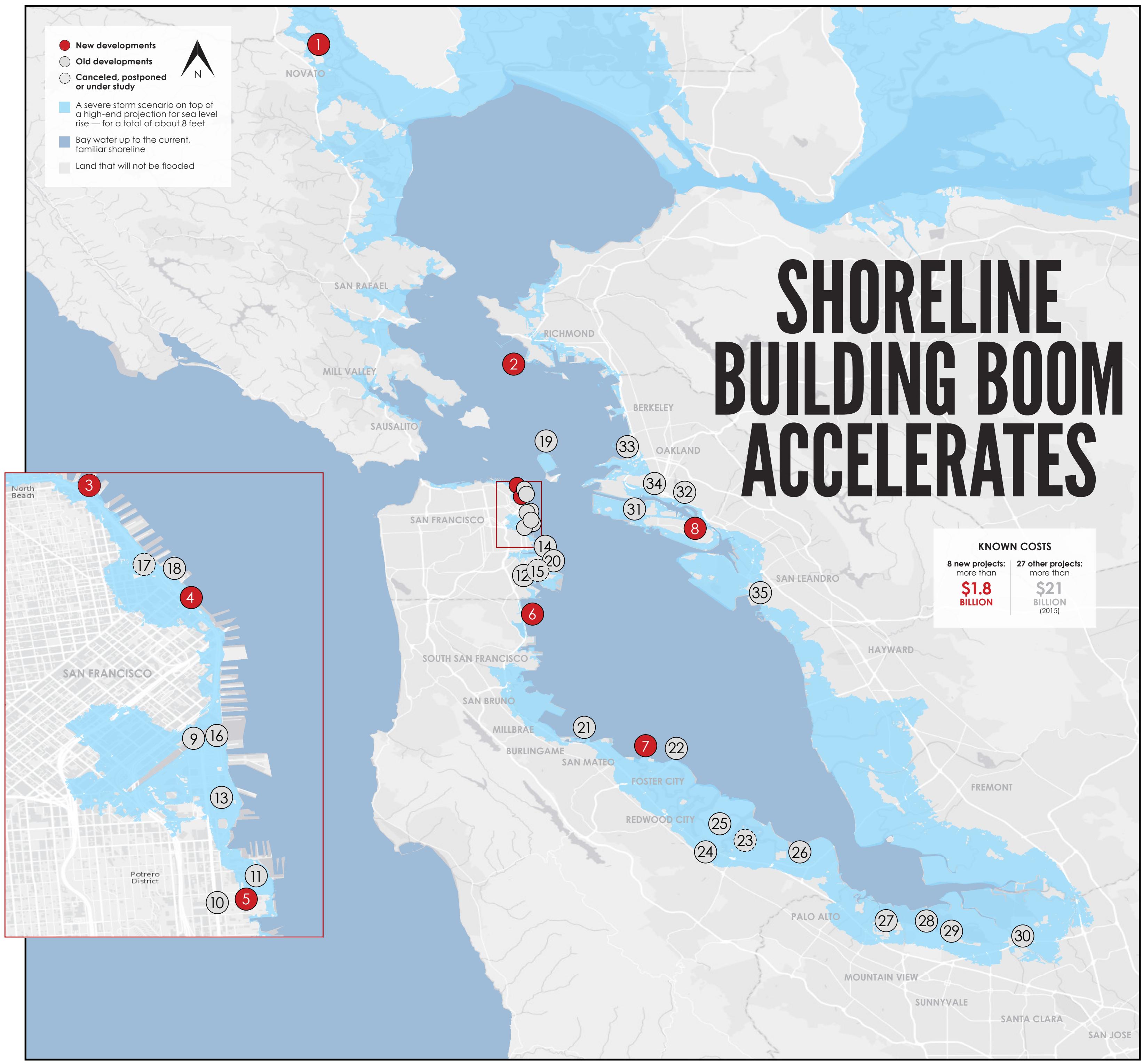
4 75 Howard St.
4-acre lot, residential tower
WHERE: San Francisco
STATUS: Permit granted, demolition of current structure to start soon
DEVELOPER: Paramount Group
KNOWN COST: \$218.6 million
INCLUDES: Project cost estimate, land value, fees

When finished, this 21-story tower will contain 120 luxury condominiums as well as street-level commercial space. The project's environmental impact report notes that, based on current projections, the bottom floor of the building will likely be inundated during a 100-year-flood event by 2050. But developer Paramount Group faces no legal mandate to adapt the design to future sea level rise because the property lies outside the jurisdiction of the Bay Conservation and Development Commission, which requires risks associated with sea level rise to be assessed. Paramount declined a request for comment.



Artist rendering of the 75 Howard St. project from a pier.

Courtesy of the Paramount Group



5 Former Potrero Power Plant
1201 Illinois St.
21 acres, mixed-use development
WHERE: San Francisco
STATUS: In approvals, land remediation phase
DEVELOPER: Associate Capital
KNOWN COST: \$71.5 million
INCLUDES: Land value (partial amount)

This property is owned by Associate Capital, an investment group that includes eBay's Meg Whitman. Real estate developer District Development is remediating toxic soil at the site of this former power plant, as a first step to converting it to 3 million square feet of housing and commercial space, plus public waterfront access. The developer has not yet submitted plans for the site, said spokesman P.J. Johnston, but it will "conform to existing and new planning requirements" around sea level rise.



Artist rendering of the 75 Howard St. project from a pier.

6 Brisbane Baylands
684 acres, mixed-use development
WHERE: Brisbane
STATUS: City reviewing project through June 2017
DEVELOPER: Universal Paragon Corp.
KNOWN COST: \$1.37 billion
INCLUDES: Project cost estimate, associated infrastructure costs

Since 2006, developer Universal Paragon Corp. has been advancing this massive proposal to replace a defunct rail yard and landfill with 4,000 housing units, a large park, and 7 million square feet of commercial space. Some Brisbane residents oppose the plan due to concerns over congestion, but SPUR, a Bay Area urban planning think tank, and other smart-growth proponents endorse it because it would provide dense housing and access to nearby Caltrain, SamTrans, and Muni buses and trains. If approved, construction could start in 2019 and take up to 20 years.



Artist rendering of Brisbane Baylands development. Courtesy of Universal Paragon Corp.

7 Tidelands Condominiums
2.8 acres, 76 condominiums
WHERE: San Mateo
STATUS: Completed, October 2016
DEVELOPER: The New Home Company
KNOWN COST: \$42.6 million
INCLUDES: Project cost estimate (construction only), land value

This 76-condominium project resulted in the removal of one-third of an acre of seasonal wetlands, and the developer, which declined to comment for this story, made up for that by buying credits meant to finance wetland restoration elsewhere. The developer also added two landscape features, called bioswales, to remove pollutants from runoff into adjacent wetlands. The structures were not designed to accommodate rising sea levels.

These eight megadevelopment projects, in areas vulnerable to rising floodwaters on the edge of San Francisco Bay, join 27 we assessed in 2015

By Mary Catherine O'Connor and Kevin Stark // Public Press

But adaptation is not cheap. The firm planning to redevelop the Alameda Marina, for instance, will spend \$44 million to make the 13-acre site resilient to sea level rise and storm surges by rebuilding degraded sections of the landing and erecting a seawall.

In part because long-term forecasting of future climate change is inherently imprecise, the exact amount of sea level rise that Bay Area communities are planning for varies greatly. Most agencies are using 2012 projections by the National Research Council, which predict a rise of anywhere between 3 and 4.6 feet by 2100 — enough to permanently flood the Ferry Building at the foot of Market Street, for example — not counting the possibility of 3.4 feet of surging water during extreme storms.

The Bay Conservation and Development Commission has very limited jurisdiction over the Bay shoreline, from the water's edge to just 100 feet inland. The regional agency requires developers to use climate change projections to assess the risk of structures being flooded by 2050.

"We advise people to be conservative," said Brad McCrary, regulatory director for the commission. "It's easier to build for high water now rather than respond to it later."

But an uptick in the melting of the Antarctic ice fields means that earlier projections could be low. State law does not provide any hard numbers, and developers can pick conservative estimates as long as the science has been peer-reviewed. Bay Area planners are watching this closely.

Since then, developers have crafted plans for another eight large-scale commercial and residential construction projects in that zone. Though not all amounts are yet known, we have tallied more than \$1.8 billion in costs associated with buying land parcels and building these proposed projects.

Regionally, policies guiding sea level rise adaptation and design continue to be inconsistent. Of the new and in-progress waterfront developments, some failed to include any proposals to mitigate future flooding.

For other projects in the permitting and approval process, rising water is a principal design consideration.

27 MAJOR PROJECTS AS OF 2015

- 9 One Mission Bay**
2.7-acre mixed-use development
WHERE: San Francisco
DEVELOPER: Strada Investment
- 18 Ferry Terminal**
3 acres of ferry gates
WHERE: San Francisco
DEVELOPER: WETA
- 10 Central Waterfront Neighborhood**
Mixed-use development
WHERE: San Francisco
- 19 Treasure Island & Yerba Buena Island**
450-acre mixed-use development
WHERE: San Francisco
- 11 Pier 70**
28-acre mixed-use development
WHERE: San Francisco
- 20 Hunters Point Shipyard & Candlestick Point**
750-acre mixed-use development
WHERE: San Francisco
- 12 Executive Park neighborhood**
14-acre mixed-use development
WHERE: San Francisco
- 21 Burlingame Point**
18-acre mixed-use
WHERE: Burlingame
- 13 Golden State Warriors arena**
11-acre sports complex
WHERE: San Francisco
- 22 Lincoln Center Campus**
Mixed-use development (office, lab, manufacturing)
WHERE: Foster City
- 14 India Basin**
Mixed-use development
WHERE: San Francisco
- 23 Redwood City Saltworks**
1,433-acre residential
WHERE: Redwood City
- 15 S.F. State University**
Satellite campus
WHERE: San Francisco
- 24 Crossing 900**
Mixed-use development
WHERE: Redwood City
- 16 Mission Rock**
28-acre mixed-use development
WHERE: San Francisco
- 25 Petal's Harbor/Blu Harbor**
Residential
WHERE: Redwood City
- 17 8 Washington**
3.2-acre mixed-use development
WHERE: San Francisco
- 26 Facebook West**
22-acre corporate headquarters
WHERE: Menlo Park
- 27 North Bayshore Development area**
Mixed-use development
WHERE: Mountain View
- 28 Google Moffett Federal Airfield**
1,000-acre mixed-use development
WHERE: Mountain View
- 29 Google Moffett Place Campus**
55-acre mixed-use development
WHERE: Sunnyvale
- 30 Centennial Gateway**
8.4-acre mixed-use development
WHERE: Santa Clara
- 31 Alameda Point Site A**
68-acre mixed-use development
WHERE: Former Naval Air Station Alameda Point Partners
- 32 Brooklyn Basin Project**
65-acre mixed-use development
WHERE: Oakland
- 33 Redwood City**
Signature Development Group, Zarsion Holdings Group, Reynolds & Brown
- 34 Oakland Army Base**
Mixed-use development
WHERE: West Oakland
- 35 San Leandro Shoreline**
Mixed-use development
WHERE: San Leandro

8 Alameda Marina Redevelopment Proposal
44 acres, mixed-use redevelopment
WHERE: Alameda

STATUS: Master Plan submitted, in approval phase
DEVELOPER: Bay West Development
KNOWN COST: \$44 million
INCLUDES: Site improvements (to prep land for construction)

Almost 90 percent of the Alameda Marina is still undeveloped. This project would fill much of that open space by adding about 670 residential units and 200,000 square feet of commercial space, reconstructing the shoreline in the process. The developer has said it will build seawalls to shield the property from at least 24 inches of projected sea level rise, per the city of Alameda's requirements. Its design accommodates future adaptive measures, such as increasing the seawall height above that level, according to the project plan.



Artist rendering of Tidelands Condominiums development. Courtesy of The New Home Company Inc.