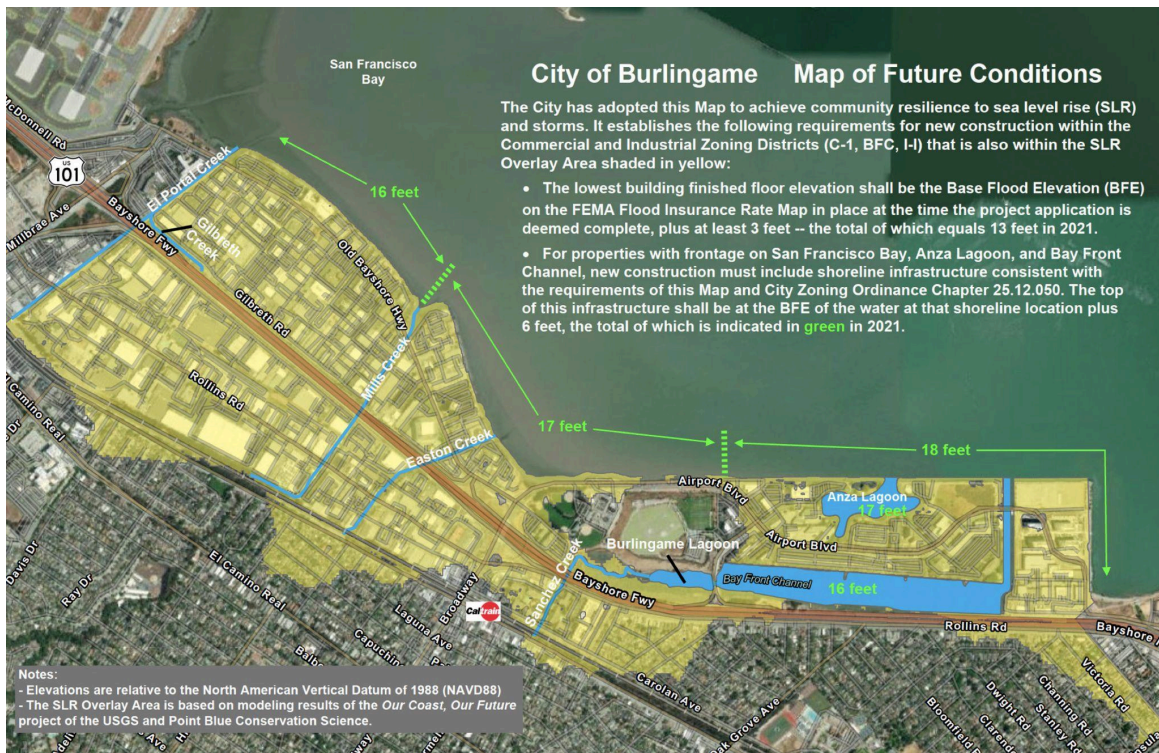


Zoning Ordinances that Address Sea Level Rise

Include zoning requirements that make development more flood resilient to protect people's safety and reduce repair costs



(Photo courtesy of the City of Burlingame)

The Impact

Zoning ordinances that address sea level rise help ensure that new development is more likely to withstand flooding or extreme weather, thereby protecting people's safety and reducing repair costs for the long term. Sea level rise in San Francisco is projected to be one foot by 2050 and about three feet during the next century, if greenhouse gas emissions are lowered. If high emissions continue at their current levels, sea level rise could be upwards of 4.5 feet during the next century, according to the 2018 State of California Sea-Level Rise Guidance. San Mateo County is considered the county in California most vulnerable to climate change due to its exposure to erosion on the Pacific coast and flooding on the San Francisco Bay front.

Description

Zoning ordinances that address sea level rise include requirements for land use planning and development standards that mitigate the impacts of rising sea levels on coastal and vulnerable areas. Zoning ordinances for sea level rise can have a range of requirements depending on the unique features of the area. The City of Burlingame's 2021 Zoning Ordinance includes requirements for storm water drainage, a 100 ft. buffer zone from shorelines, a 25 ft. buffer zone from creek banks and

elevated first floors of new buildings within a Sea Level Rise (SLR) Overlay Area. As an additional benefit, it considers public access and trail connectivity to support community well-being. South San Francisco's 2022 Zoning Update prohibits the construction of new critical structures such as emergency shelters, fire stations, schools, and healthcare facilities within the SLR overlay district. The state of Maine restricts the size of new buildings within its coastal dune system unless it can be proven the site will remain stable with regard to sea level rise.

Where It's Been Implemented

Burlingame was the first city in the Bay Area to address sea level rise in its zoning ordinance with its December 2021 update. The San Mateo County Flood and Sea Level Rise Resiliency District, known as OneShoreline, assisted in the development of the update. In June 2023, OneShoreline completed a Planning Policy Guidance for the protection of the entire San Mateo County bay front.

The update was the result of a two-year effort known as Sea Change Burlingame, which studied how sea level rise might impact the bay front and what strategies could be adopted to reduce the risk of flood. The effort included community engagement and was supported by Climate Ready SMC, an initiative by the County of San Mateo Office of Sustainability.

Key Drivers

According to the County of San Mateo's Sea Level Rise Vulnerability Assessment, more than 30,000 residential parcels, 3,000 commercial parcels, critical infrastructure, transportation networks such as BART and Highway 101 and natural assets may be vulnerable to flooding from sea level rise in the future.

The San Francisco Bay Conservation and Development Commission (BCDC) estimates \$110 billion is needed to fully protect the Bay Area from damage related to the predicted 2050 sea level. So far, only \$5.5 billion in public funds have been committed. According to the BCDC commission chair, if no action is taken the cost of repairing damage caused by rising sea levels could be \$230 billion.

Key Factors for Success

One key factor to the success of adding requirements that address sea level rise to zoning ordinances is to address concerns that the increased cost of such requirements will make development less financially feasible. The City of Burlingame addressed this concern by pairing community-benefit incentives with the potential for increased floor area ratios (FARs; a ratio that determines how much building area can be created on a property) available to developers through a discretionary review and public hearing process. If developers include in their development proposals provisions for or contributions to elements that benefit the community at large, they may be allowed to build larger buildings than would otherwise be allowed. Increased FAR allows developers to build more income-generating square footage on a lot to mitigate increased cost.

A second key factor to the success of adding requirements that address sea level rise to zoning ordinances is the coordination of agencies that oversee development. Cities and counties establish zoning ordinances that address development in areas under their jurisdiction, yet many other agencies have overlapping and adjacent areas of control. In the Bay Area, these agencies include the BCDC, the California Coastal Commission and the Army Corp of Engineers. Efforts to achieve flood-resistant development through zoning ordinance requirements will be effective only if the many agencies strategize and coordinate their efforts along the entire ocean and bay fronts. Across agencies, equity must be prioritized to ensure that sea level rise does not disproportionately affect those less privileged.

Key Obstacles

A key obstacle to addressing sea level rise through both flood-resistant development and shoreline protection infrastructure is cost and funding. The City of Burlingame addressed this obstacle by including climate change measures and sea level rise infrastructure in the list of community-benefit incentives available to developers in their requests for increased FAR. These incentives include elements required for developments located in the Sea Level Rise Overlay Area, and thereby directly address cost issues related to the development itself. Funding shoreline protection infrastructure in general is complicated as the community as a whole benefits from the infrastructure, not only people and developments located on the shoreline. In Burlingame, developers contribute to infrastructure funding in three ways. One is through the general development fees they pay. Another is by directly bearing the cost of infrastructure included as part of new development. A third way is when developers choose sea level rise infrastructure from the list of incentives available to them when their proposed development is not located on the bay front. Additional funding comes from sources such as parcel taxes, assessment districts, and county, state, and federal agencies.

Timeline to Implementation

The City of Burlingame began studying sea level rise and flood mitigation strategies in 2019. After a high-level assessment, the updated Zoning Ordinance was adopted by the City Council on December 6th, 2021.

References and Resources

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