Project

With two decades of data, Haley & Aldrich supports resilient wetland restoration

Summary

- For nearly 20 years, Haley & Aldrich has worked to restore the San Francisco Bay's tidal wetlands.
- At Eden Landing Ecological Reserve, Haley & Aldrich has supported partners through geotechnical and environmental expertise and strong agency relationships.
- Our detailed understanding of the site has informed resilient flood control approaches and habitat restoration.

Client Challenge

During the 20th century, human development and activity severely degraded about 85 percent of the San Francisco Bay's tidal wetlands. For the nearby coastal communities and infrastructure, these wetlands provide essential protection from flooding: They buffer the effects of sea-level rise and storm surges, which are expected to increase

with climate change.

Decades ago, a coalition of public and private partners launched regionwide initiatives to restore the wetlands. At one of these areas — Eden Landing Ecological Reserve, 6,400 acres of public land in Alameda County, California — goals included improving flood control, strengthening sea-level rise resilience, redistributing sediment to feed the health of the marshland, lessening maintenance needs for flood control structures, and restoring habitat for wildlife and recreational use.

This work required geotechnical and environmental expertise, plus a partner that could manage troves of data and communicate effectively with local, state, and federal agencies and other parties. In 2008, Alameda County Flood Control District trusted Haley & Aldrich — which had already advised the county on other flood control infrastructure — to be that partner.

Our approach

In the years since, our team has served as a trusted advisor not just to Alameda County but also to prime contractors, the nonprofit Ducks Unlimited, and other entities working at Eden Landing. We have gathered and stewarded almost 20 years' worth of geotechnical data, building a comprehensive site profile that has informed levee design, construction, and certification; breach analyses; trail improvements; and habitat restoration.

With this deep site knowledge, we've steered plans and implementation to create better results. For example, one design proposal called for the construction of a large berm between the bay and former industrial salt ponds for flood protection. Our geotechnical evaluation showed that this approach wouldn't meet the goal, redirecting the design firm to other features that could route water in a way that would safeguard the habitat.

Our long-standing site knowledge has also made us valuable partners to newer project participants. In the early 2020s, Ducks Unlimited came on board to restore the salt pond habitat for both native and migratory bird populations. Drawing on our extensive site data, we have quickly advised on the design and improvement of other geotechnical and environmental projects within Eden Landing. We also leveraged relationships with Alameda County, the California Department of Fish and Game, and other parties to anticipate their priorities as we prepared recommendations.

Value delivered

- Contributed to an ambitious, decades-long effort to restore the San Francisco Bay's tidal wetlands and make coastal communities more resilient
- Gathered and managed years of data from Eden Landing that made scores of flood management initiatives more efficient and effective
- Advised on habitat restoration that has drawn native species back to the wetlands and improved recreational opportunities

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