

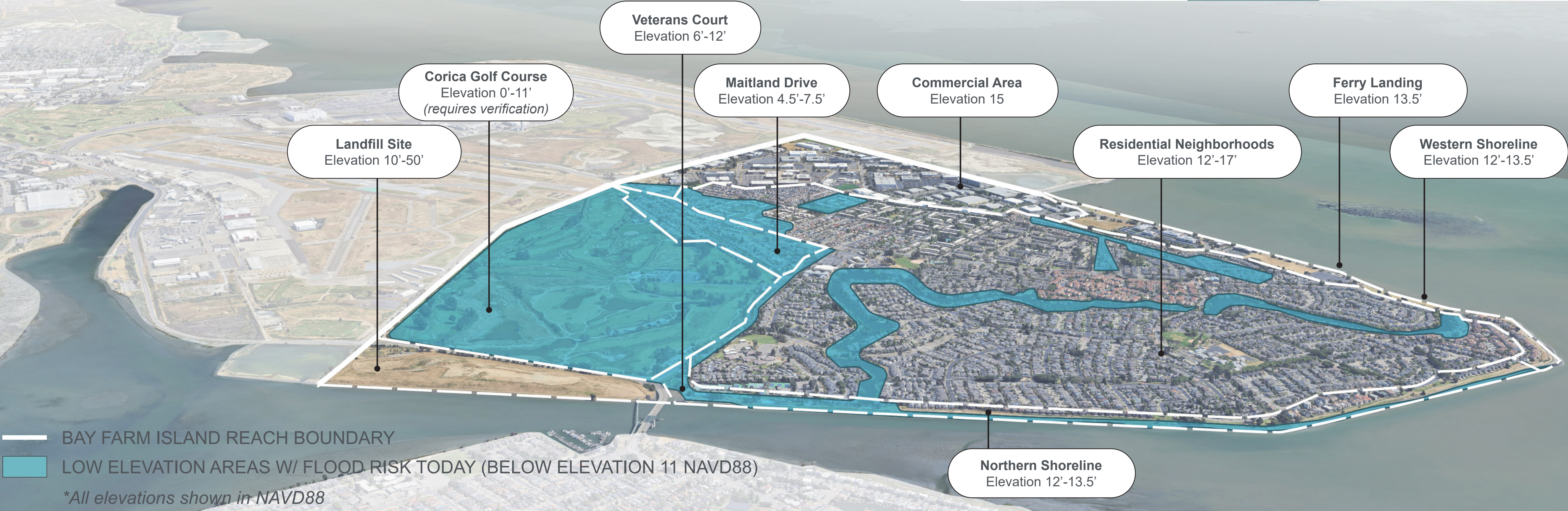
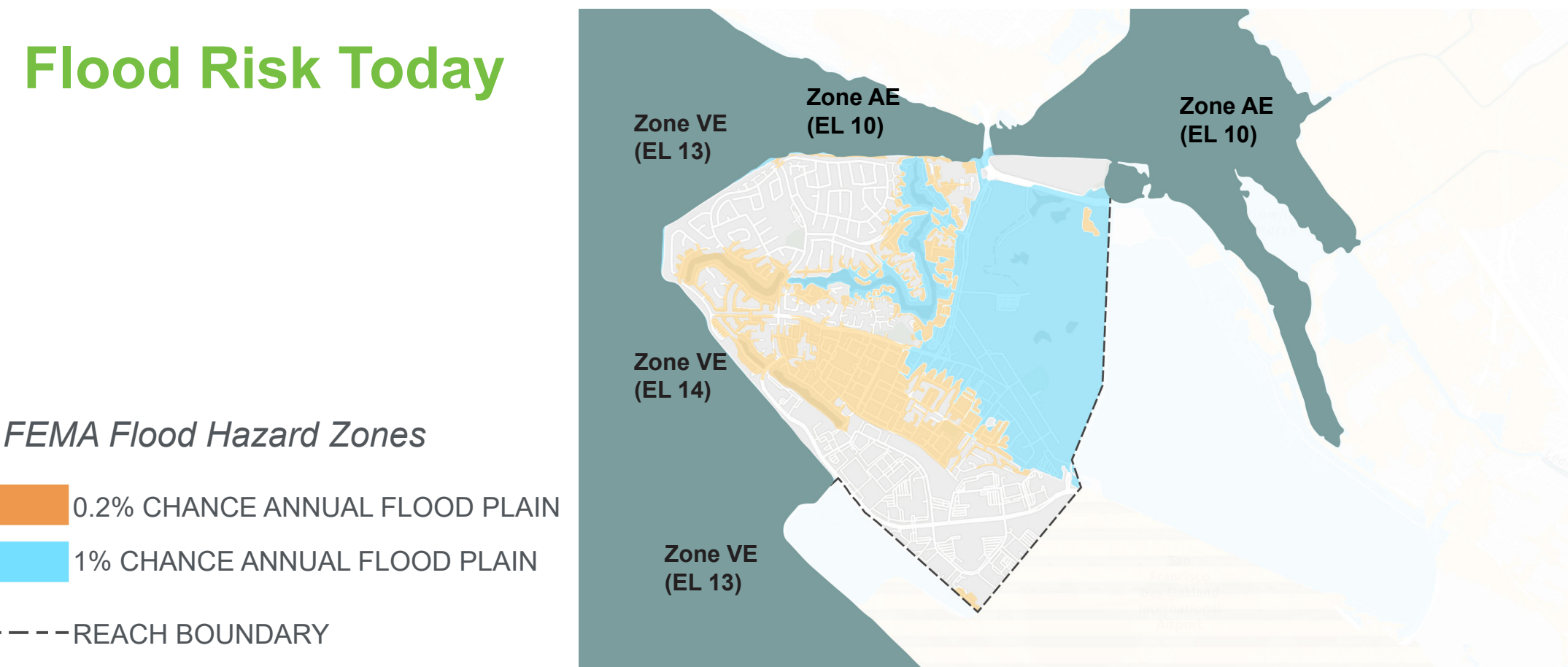
BAY FARM ISLAND

INTRODUCTION

Bay Farm Island is a low-lying neighborhood with variable coastal and inland flood risk today. The entirety of this reach falls within the long-term adaptation zone. Along the western shoreline, overtopping is dominated by wind-driven waves. Along San Leandro Bay, where waters are calmer, overtopping is dominated by storm surge. Inland areas -- especially at elevations below existing high tide -- are also subject to flooding during storms and impacts from rising groundwater. **As sea levels rise, this risk will increase. Adaptation will need to take into account these variable conditions.**

Despite these risks, the landscape has many features which may support future adaptation. Bay Farm Island's shoreline parks can be adapted to provide flood protection. Lagoon systems can also be upgraded to manage increased stormwater volume. **These measures, combined with opportunities to implement nature-based features, will help protect Bay Farm Island over the coming decades.**

Flood Risk Today



ADAPTATION PLANNING - KEY CONSIDERATIONS

Shoreline Transformation

Bay Farm Island has changed significantly over the past century. Tidal marsh and mudflats were filled to create farmland that eventually grew into the shoreline community we encounter today. The area's historic transformation points to the range of possibilities for the future.



There are many opportunities to protect the Bay Farm Island community via adaptation while also delivering co-benefits, such as increasing habitat and public access. What sort of changes would you like to see here?

Are we missing anything? Please let us know!



IMMEDIATE ACTIONS



Ongoing Efforts

The City of Alameda has identified strategies for urgent implementation on Bay Farm Island in the Local Hazard Mitigation Plan (LHMP, 2025). Future adaptation efforts will build on this work.

- 1 Golf Course and Eastshore / Central Pump Station Drainage Study
- 2 Shoreline Maintenance (e.g., erosion management)
- 3 South Shore and northern shoreline of Bay Farm Island Geomorphology and Ecological Study
- 4 Citywide projects including stormwater management improvements



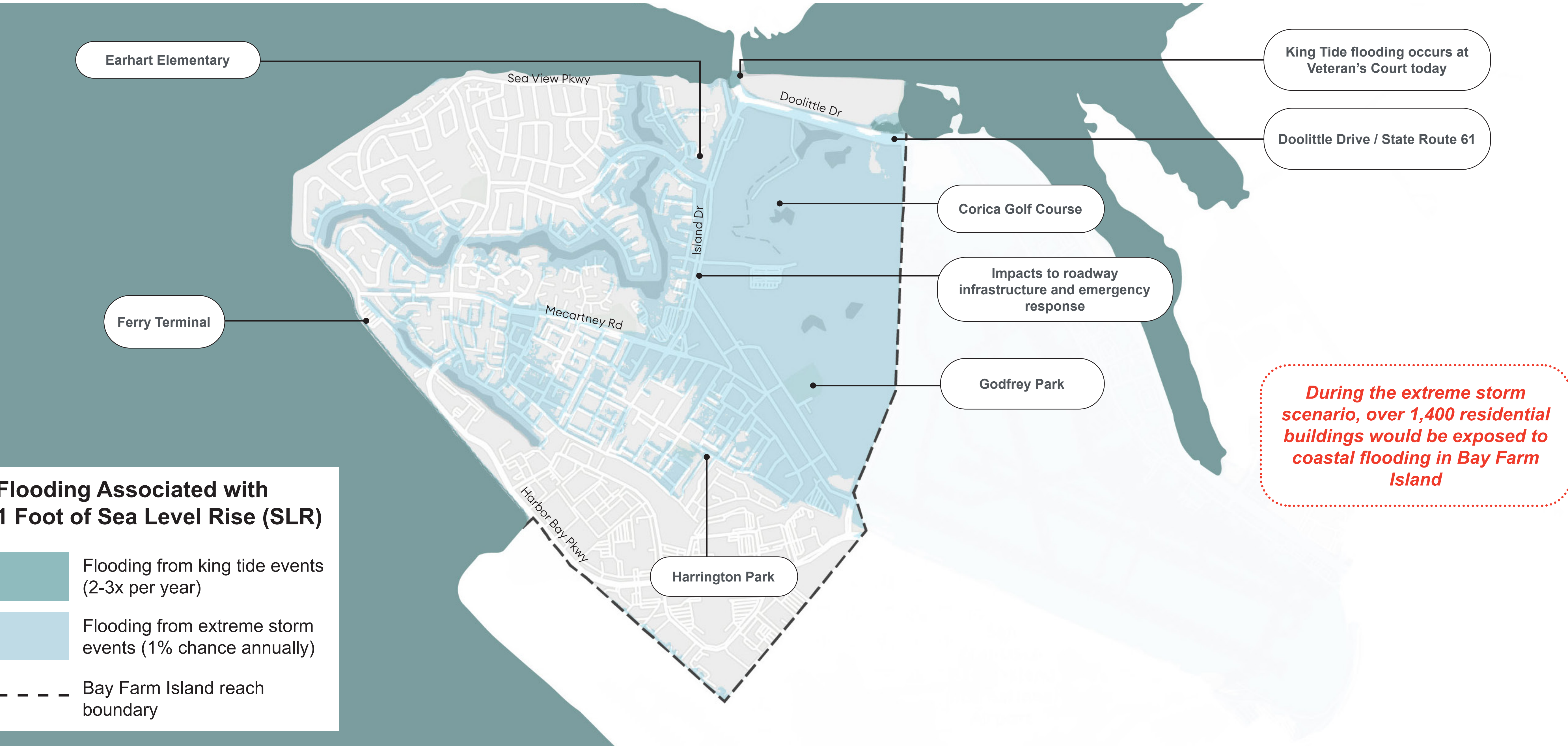
BAY FARM ISLAND

NEAR-TERM ADAPTATION ALTERNATIVES

1 FOOT OF SEA LEVEL RISE: THE ‘DO NOTHING’ ALTERNATIVE (2040-2060)

The lowest portions of this shoreline area already at risk of inundation during a major coastal flood. Sea level rise of 1 foot may occur by 2040-2060.* Increasingly frequent and intense extreme rainfall events, combined with rising groundwater, are anticipated to cause flooding in low-lying areas. With 1 foot of sea level rise, king tide flooding will largely remain confined to the shoreline. However, an extreme storm would have major impacts to much of Bay Farm Island’s built environment, including residences and public open space.

*Based on approximate High and Intermediate projections (OPC, OST, and CA Sea Level Rise Task Force 2024) in comparison to a 2000 baseline



NEAR-TERM ADAPTATION STRATEGIES (2040-2060)

The proposed near-term adaptation strategies address erosion and coastal flooding risk along Bay Farm Island’s northern shoreline. Strategies should be implemented by 2035. Improvements include constructing a shoreline levee coupled with nature-based features designed to reduce risk and expand habitat. Pump station improvements are also included. Roadway adaptation is required along Island Drive to raise low areas that are vulnerable to flooding. Measures to address inland flooding within the Maitland Drive neighborhood are proposed.



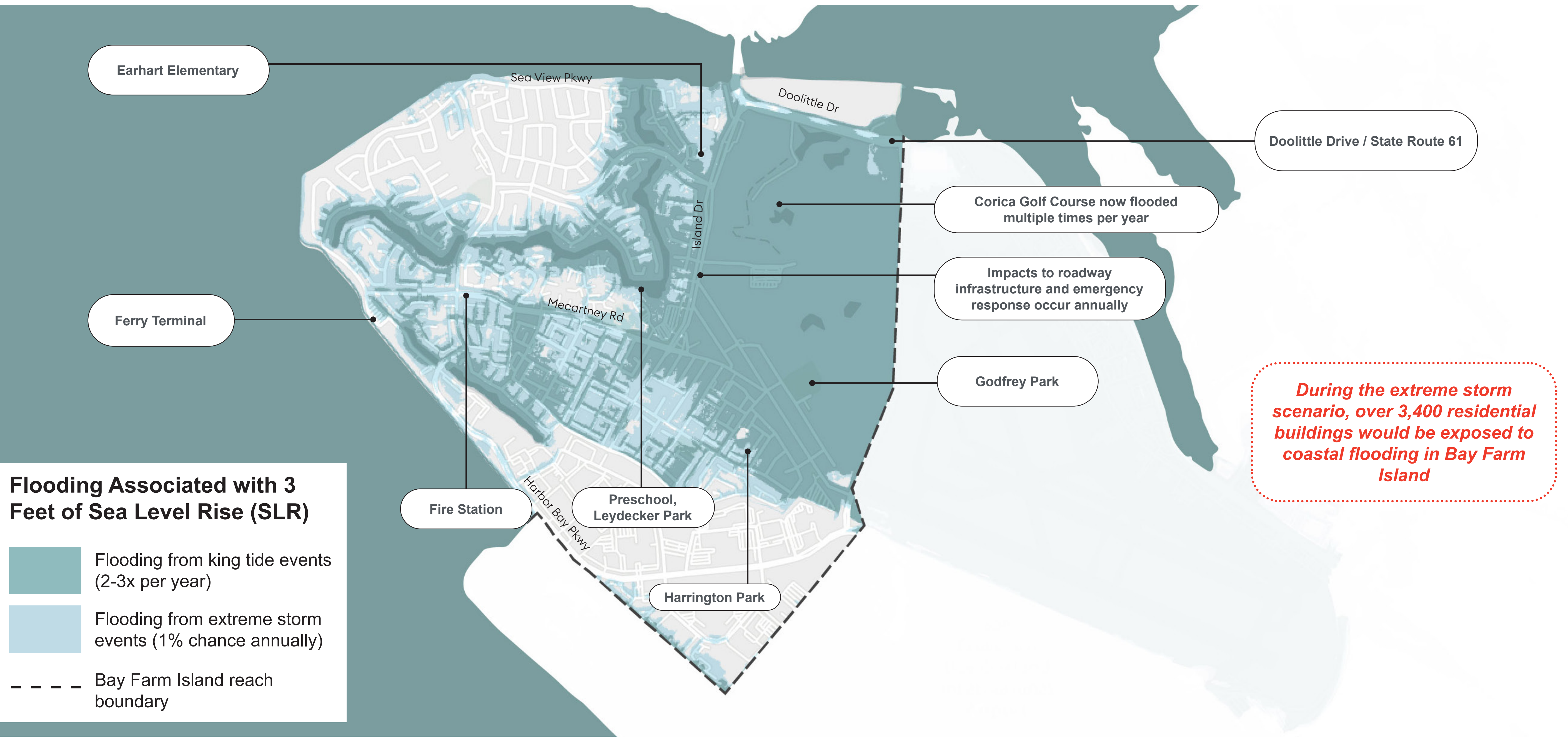
BAY FARM ISLAND

MID- TO LONG-TERM ADAPTATION

3 FEET OF SEA LEVEL RISE: THE ‘DO NOTHING’ ALTERNATIVE (2070-2100)

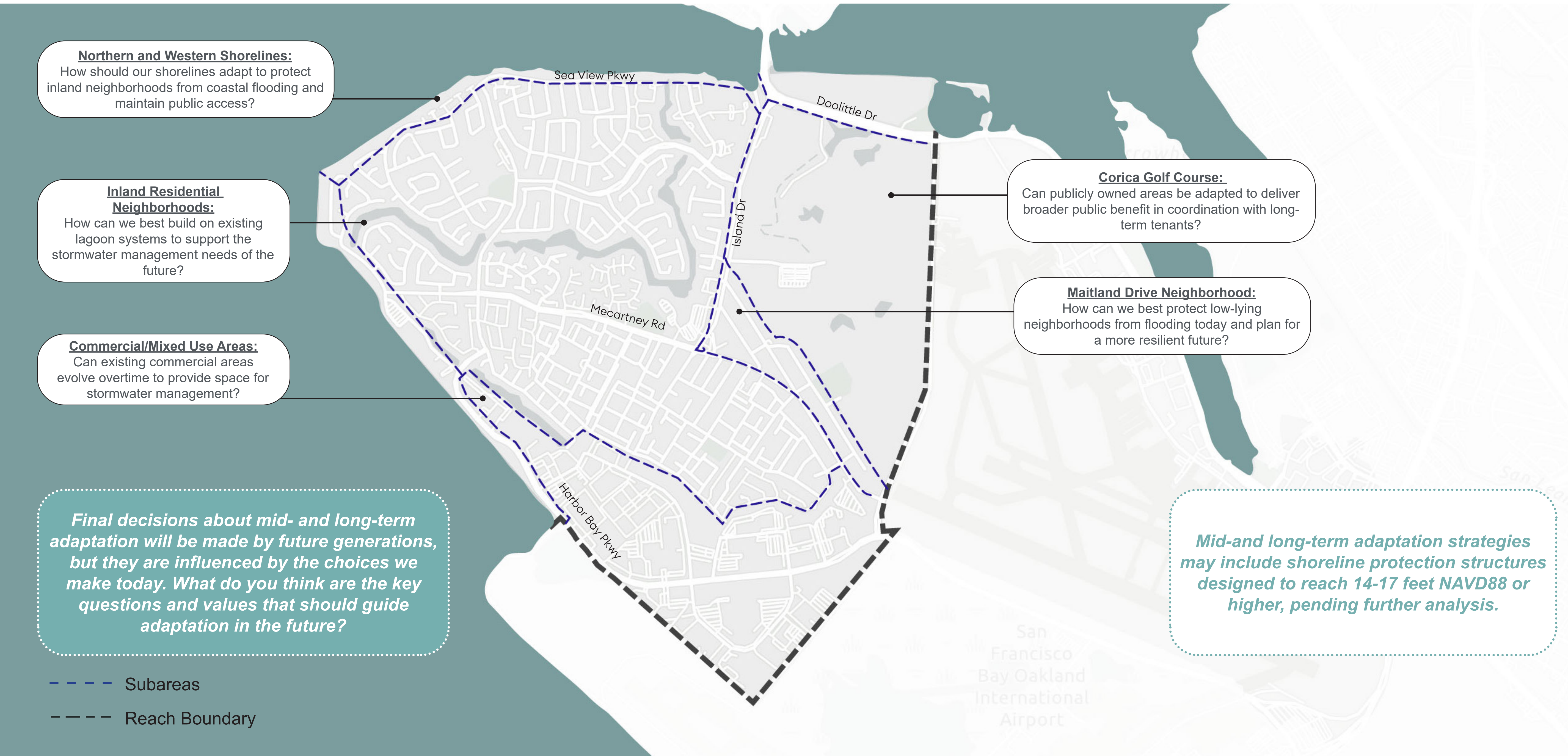
If adaptation measures are not implemented in the near term, coastal flooding will continue to increase in severity and frequency, with flood impacts to the majority of Bay Farm Island. With 3 feet of sea level rise, low lying areas will be exposed to flooding multiple times per year. Coupled with a severe storm, large stretches of the northern shoreline will be overtopped. Additional flooding from wind-driven waves may also occur. Properties that are not directly exposed to floodwater will experience access/transportation limitations.

*Based on approximate High and Intermediate projections (OPC, OST, and CA Sea Level Rise Task Force 2024) in comparison to a 2000 baseline



MID- TO LONG-TERM ADAPTATION (2070-2100)

Two feet of sea level rise is a critical tipping point for Bay Farm Island. In the near-term, we will be able to adapt along our shoreline, with more modest infrastructural and ecological improvements. Beyond that, bigger changes may be required. Adaptation has the potential to transform the Bay Farm Island shoreline and may include construction of additional flood defenses (such as levees), nature-based features, expansion of lagoon systems, and land use change in certain high risk areas.



BAY FARM ISLAND

DEEP DIVE: NORTHERN SHORELINE NEAR-TERM PROJECT

NORTHERN SHORELINE EXISTING CONDITIONS

Rising sea levels are already impacting the Bay Farm Island shoreline. Near-term adaptation must address a variety of issues, including shoreline erosion and tidal flooding in low-lying areas from Veterans Court to the lagoon outfall. The island lagoon stormwater control system is also requires upgrades in order to manage increased water volumes during storms.



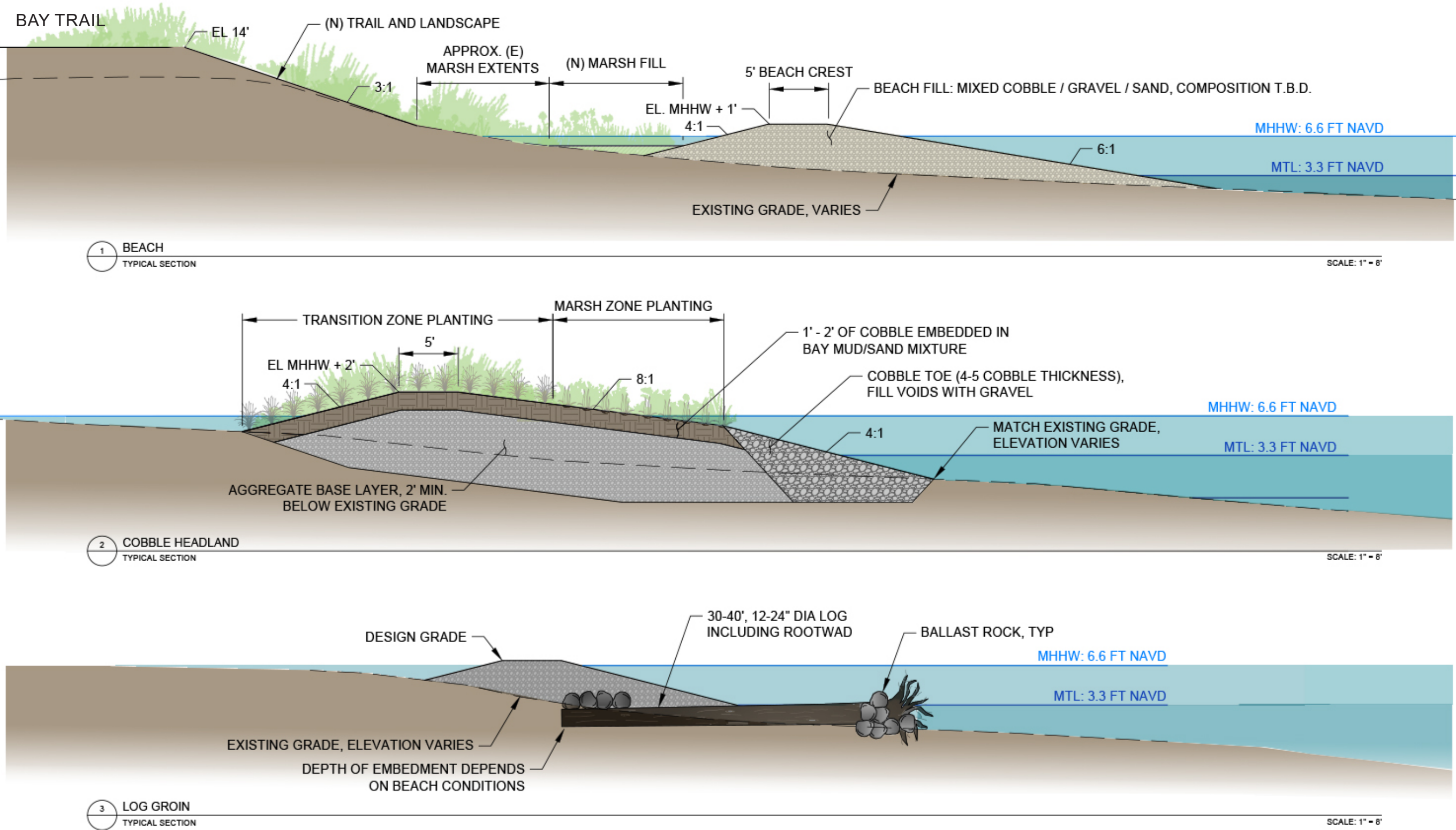
NEAR-TERM PROJECT CONCEPT DESIGN (2040-2060)

The Bay Farm Island Near-Term Improvements Project is a near-term sea level rise adaptation designed to address current flood risk and the increased coastal, stormwater, and groundwater flooding related to two feet of sea level rise projected over the coming decades. It proposes both engineered and natural solutions to address flood risk, coastal erosion, and habitat degradation. Along with coastal protection, the project makes open space and access improvements including gathering spaces, signage and education.

Site Plan



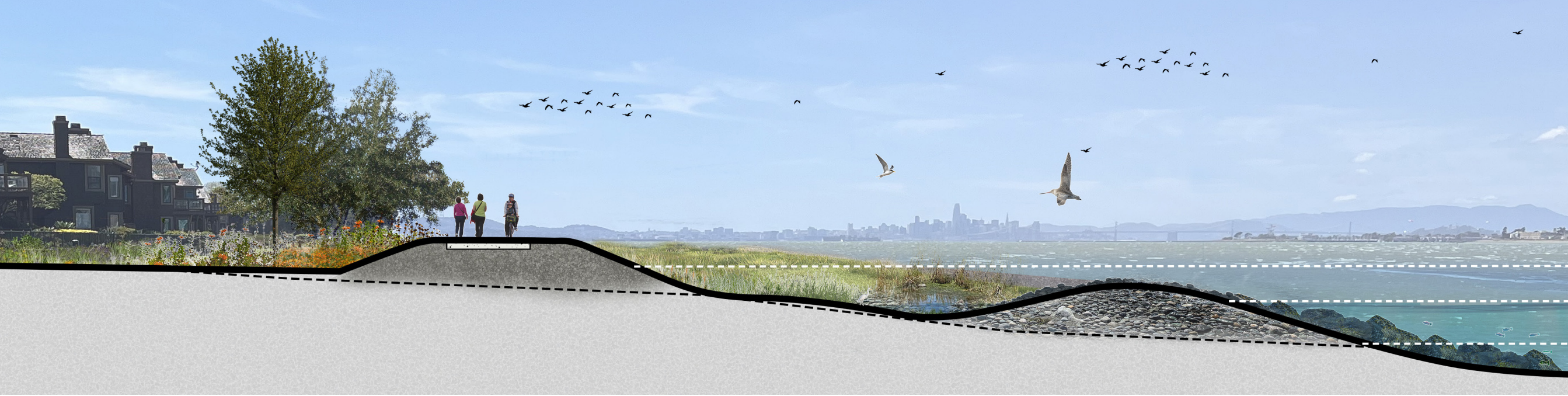
Nature-based Features



Natural features such as gravel beaches, cobble headlands, log groins, and rock islets, proposed as part of the design are intended to be complementary to these other improvements. These features would achieve project goals by limiting further erosion of the existing marsh edge along the site building on natural analogues.

These features would be placed in front of the existing shoreline to create a more complex series of elevations, wave exposures, offshore slopes, surface runoff catchments, and wave shadows than exist currently.

Bay Trail and Levee



The proposed levee will be designed to be recognized by FEMA meeting National Flood Insurance program requirements, as well as provide recreational, ecological and visual benefit. The levee will provide flood protection with a minimum design elevation of 14 feet and will preserve views to the Bay and from eye level of the homes at the shoreline. The levee will also be designed to maintain and improve Bay Trail Access with new seating and gathering areas.

Potential Timeline: Northern Shoreline Adaptation

