Table 4-9. Adaptation Planning: Bay Farm Island Lagoon System 1 Outlet Gate and Seawall

Short-Term (<5 years)	1 1 1	• **Conduct a geotechnical study.** Determine the structural condition of the existing shoreline to better understand long-term modifications that may be necessary. • **Elevate existing seawall to provide immediate protection from storms and king tides.** Implement recommendations from previous stormwater system assessments. A new 2' retaining wall built behind the existing seawall will make shoreline protections level with tide gate structure platform and adjacent shoreline. • **Implement upgrades to HBI System 1 Pump Station** identified in previous storm drain master planning efforts and lagoon studies.
Mid-Term (5–10 years)	2 3	• **Investigate options for submerged aquatic vegetation (SAV) at this location.** Bay Area assessments for natural shoreline feasibility identified San Leandro Bay and the canal as potential locations for SAV. • **Begin design of large-scale shoreline modifications along the Bay Farm Island north shore.** After 2 to 3 feet of sea level rise, additional strategies may need to be considered and 10 years of lead time will be needed (for feasibility studies, funding, etc.). Thresholds can be developed to trigger exploration of additional strategies such as elevating the existing shoreline or expanding it outwards into the Bay, as well as converting it into a living or horizontal levee.
Long-Term (>10 years)	ALL	• **Coordinate the approach to flooding across Bay Farm Island.** Flooding on Bay Farm Island is connected to several locations of shoreline overtopping in both Alameda and Oakland. A coordinated approach to shoreline modifications is necessary to reduce the risk of flooding.

BAY FARM ISLAND LAGOON SYSTEM 1 OUTLET GATE & SEAWALL

At the north end of Bay Farm Island Harbor Bay Lagoon System 1 is a narrow, 100-foot long isthmus of land separating the lagoon from San Leandro Bay that can be considered a seawall. It is not a FEMA-certified seawall, and the underlying shoreline's structural competency is unknown. The seawall is not level with the adjacent shoreline, providing a conduit for floodwaters due to sea level rise and storm surge. Overtopping at this location has the potential to compromise the lagoon system, leading to flooding of neighborhoods throughout Bay Farm Island. The tide gate structure at this location is used to drain the lagoon system during low tide. A supplemental pump can also lower lagoon water levels if the tide gate is submerged.