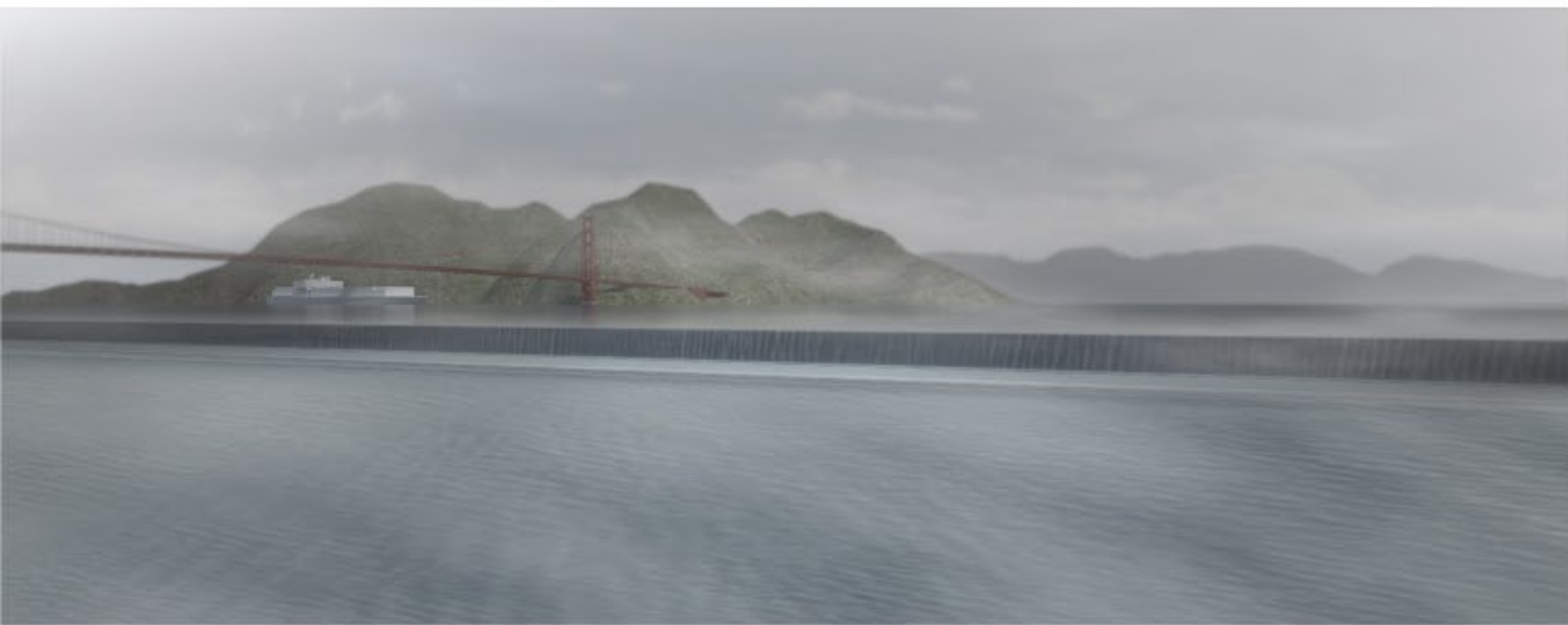
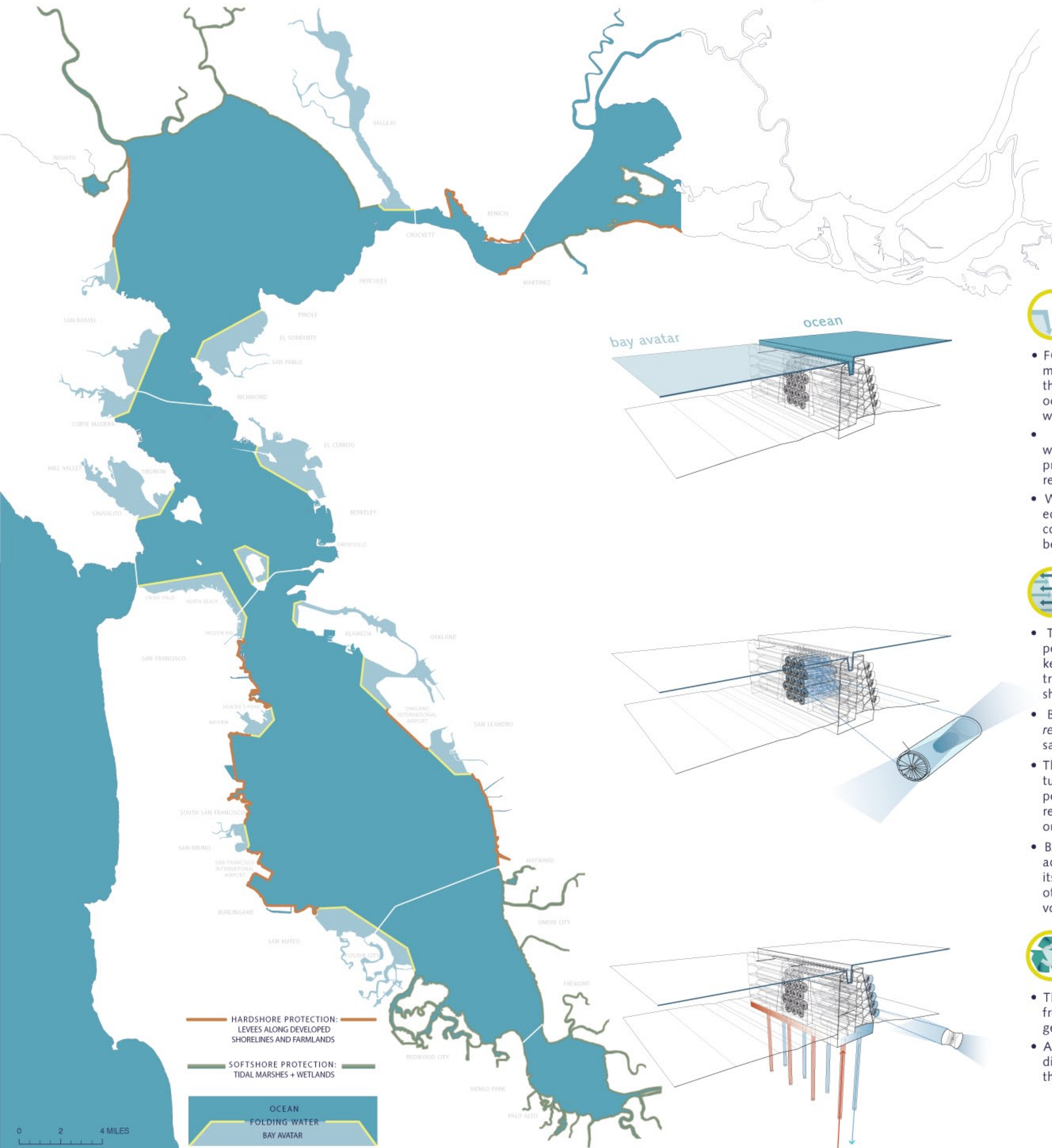




FOLDING WATER: A VENTILATED LEVEE FOR A LIVING ESTUARY



FOLDING WATER is a new "ventilated" levee that protects shorelines by regulating both sides—rising sea levels and the delta and bay waters—mechanically managing tides to create micro-bay estuaries for the shoreline of San Francisco and other key areas within the Bay. Responding to dramatic global and climatic transformations, this *dynamic* levee system meets specific shoreline conditions to preserve waterfront property, activities such as recreation and tourism, and the estuarine ecology dependent on tidal action. It departs from the conventional, static levee—or dam—by exchanging waters through a perforated pump wall to artificially manage tides and to create micro-bay estuaries. These BAY AVATARS essentially maintain the current estuary's levels, activity, and ecology, sustaining the relationship between the estuary and its inhabitants. This mega-scaled civic project provides a vital portal for the cultural and environmental future of the region in the form of a monumental FOLD of water.



WATER LEVEL MANAGEMENT: THE FOLD

- FOLDING WATER is a levee mitigation system that maintains water elevations for existing shorelines that are susceptible to flooding and manages rising ocean waters through the design of a *bifurcated* water surface strategy.
- This *stealth* infrastructural system manages water—and is made of water—artistically preserving the interface of culture and ecology by reforming the bay surface.
- Without a divisive barrier, it extends the natural ecology of the bay and maintains vistas and visual connections that characterize its unique estuarine beauty.



TIDAL MANAGEMENT: THE VENTILATOR

- Tidal cycles are artificially managed through a perforated wall of pump "ventilators," located at key sections along its full height, to allow the transport of the entire water column between the shoreline and ocean waters, creating BAY AVATARS.
- By ventilating the regulated body of water, it *recreates* the ecological exchanges of sediment, salinity, and biota promoted by the tides.
- The perforations are composed of dual-functioning tubes that exploit the high pressure of the ocean to permit the water to enter the BAY AVATAR and reverse this pressure by pumping the mixed water out.
- BAY AVATARS can be specifically/locally tuned to accommodate the variety of shoreline conditions of its estuary, thus it can be universally applied in other estuaries to regulate flow, salinity and volume.



SELF-SUSTAINING ENERGY: GEOTHERMAL AND TIDAL

- The aquatic infrastructure could operate its system from the energy extracted from tidal turbines and/or geo-thermal energy plants.
- Additionally, desalination facilities and waste water disposal could be incorporated within the mass of this levee structure.