

# ABOUT RISING TIDES: IT'S THE DELTA STUPID

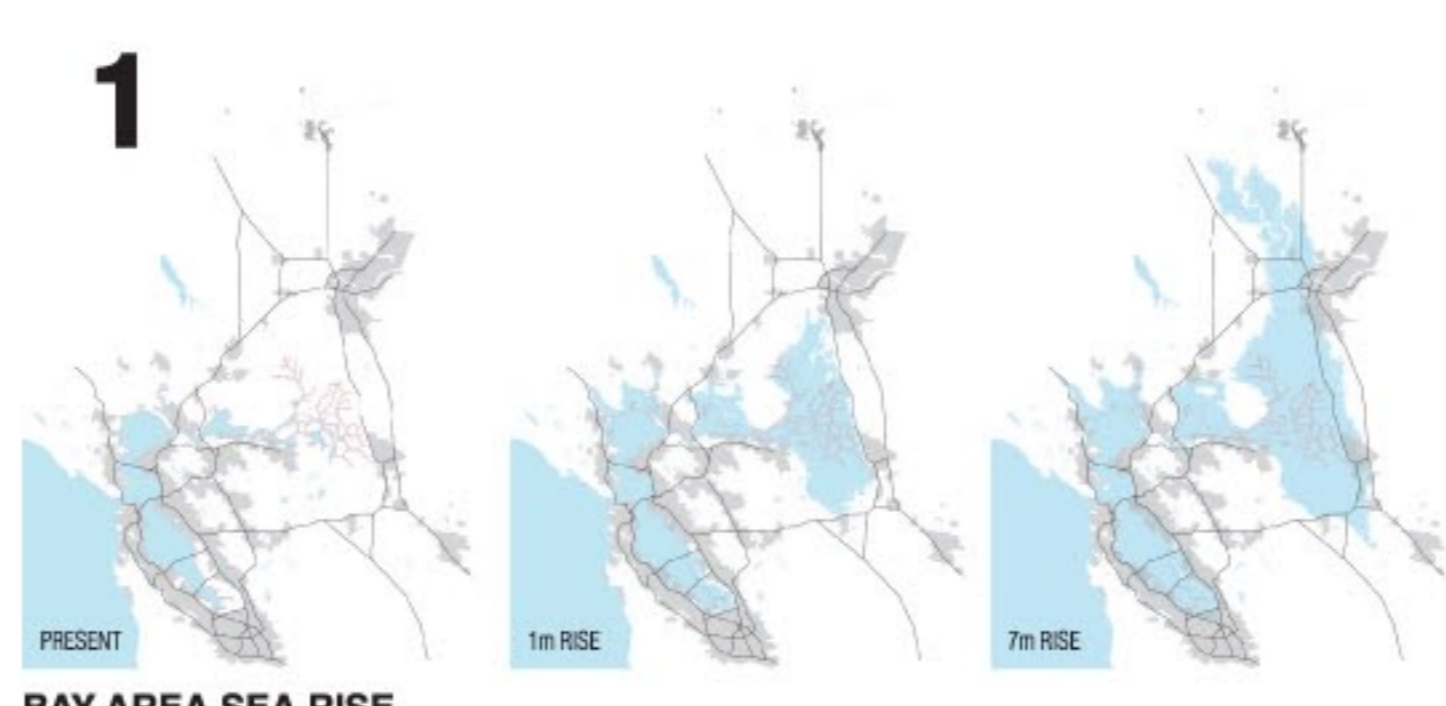
California has reached a crisis point. Yet, the monumental challenge it faces is still relatively unknown.

Sea rise is an unavoidable new reality of 21st century life. Its impacts however will be felt most acutely not in the Bay Area but rather in the Delta. Everyday, this region which sits three times lower than New Orleans is in danger of the aging and fragile levees that protect it failing due to increasing water pressure, seismic events and ever more unpredictable storm surges. Rising tides will not only compound these forces which imperil it but ultimately will assure its inundation. The catastrophe that would result from mass intrusion of saltwater into the Delta is immeasurable. Immediately, it would be ecologically devastating to the already sensitive estuary. More importantly, it would forcibly halt water supply to the two in three of 37 million Californians who get their drinking water from the Delta. And perhaps of greater concern still is the disruption it would cause to the regional agriculture supported by the Delta; a \$5 billion a year industry which alone is responsible for 14% of all U.S. agricultural production including nearly one-half of all American fruits and vegetables. While such impacts are guaranteed without intervention, they are even now a possibility should a major levee breach occur.

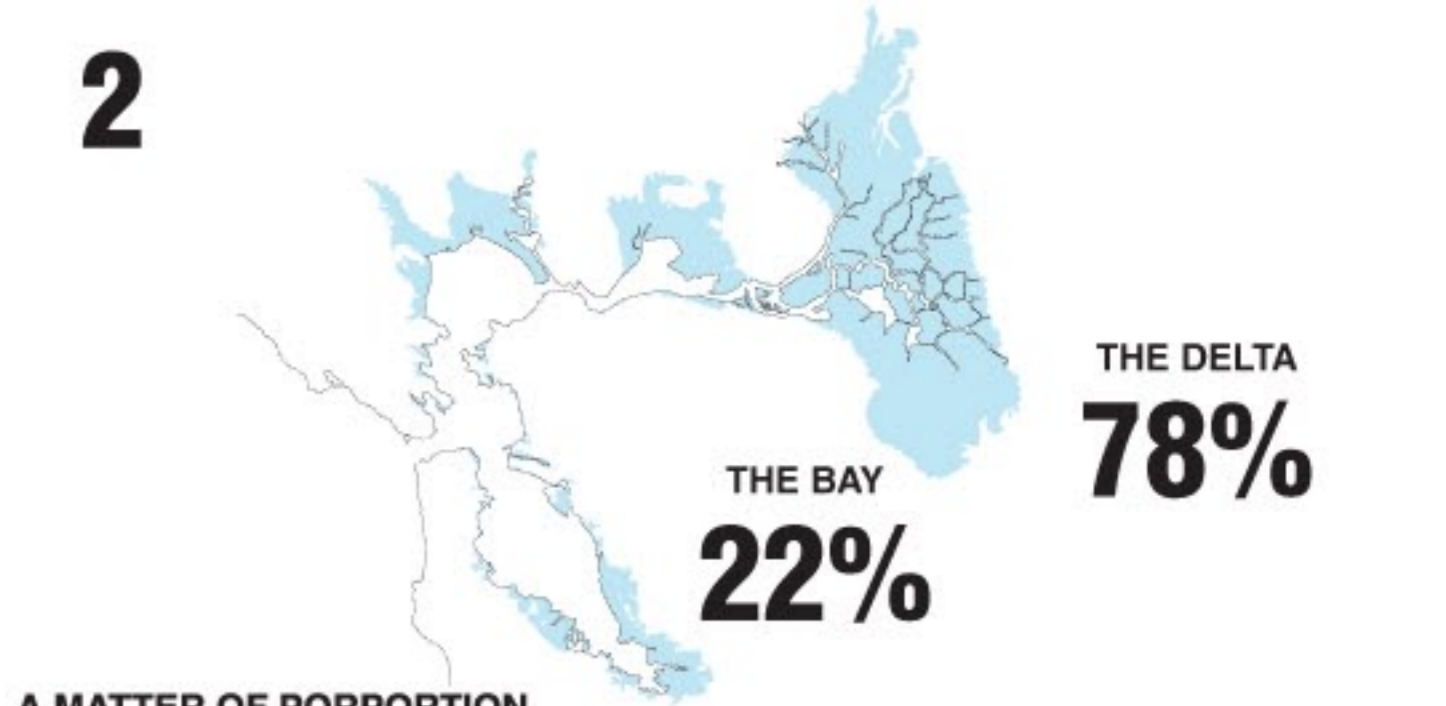
More fundamental than any other consequence of sea rise, this threat to very survival must be confronted. This project adopts a landscape infrastructure approach to confront seawater inundation of the Delta. The response is a 'Living Levee System.' The system expands as multiple lines of defense which seek, at all costs, to prevent a catastrophic intrusion of saltwater into the Delta as well as prevent the rise of water levels. Simultaneously, it must enable the normal flows at the Bay-Delta interface. The system of basins allows it to operate as a permeable barrier - responsive to salinity levels, ecosystem requirements and rising sea levels over time. The water pressure of a new freshwater reservoir at Sherman Lake is further used to buttress against sea rise while increasing both storage capacity and habitat area. This proposal is intentionally aligned with CALFED's objectives of increasing water supply reliability and quality in conjunction with ecosystem restoration and improved levee system integrity. This idea is played out below.

This proposal exists as one available scenario to confront an uncertain future. As with all water and Delta issues it will certainly have enthusiasts and opponents; likely comprised of odd alliances between groups seeking to advance their own interests. Most importantly however, this proposal serves as a starting point for discussion and attention to the California Delta and its fate.

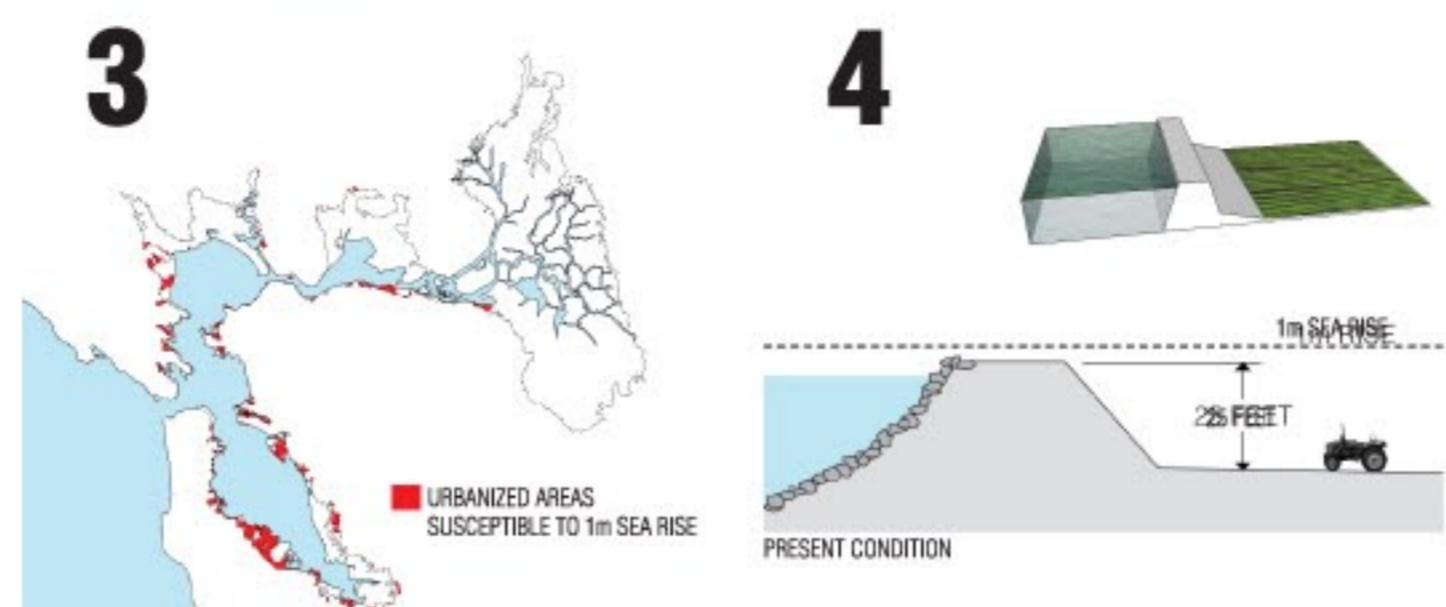
The significance of the California Delta must not be lost. Cities, shorelines and people can adapt and endure. For the San Francisco Bay Area, California, and beyond - the Delta is a matter of survival.



**BAY AREA SEA RISE**  
Sea rise is an unavoidable new reality that will soon become all too apparent to California, America and the world. Rising sea levels will demand a reimagining of the 'Bay Area.' No longer will it be limited to San Francisco, Oakland and San Jose; as areas of inundation grow to claim Sacramento and cause impacts to reach Los Angeles and beyond.

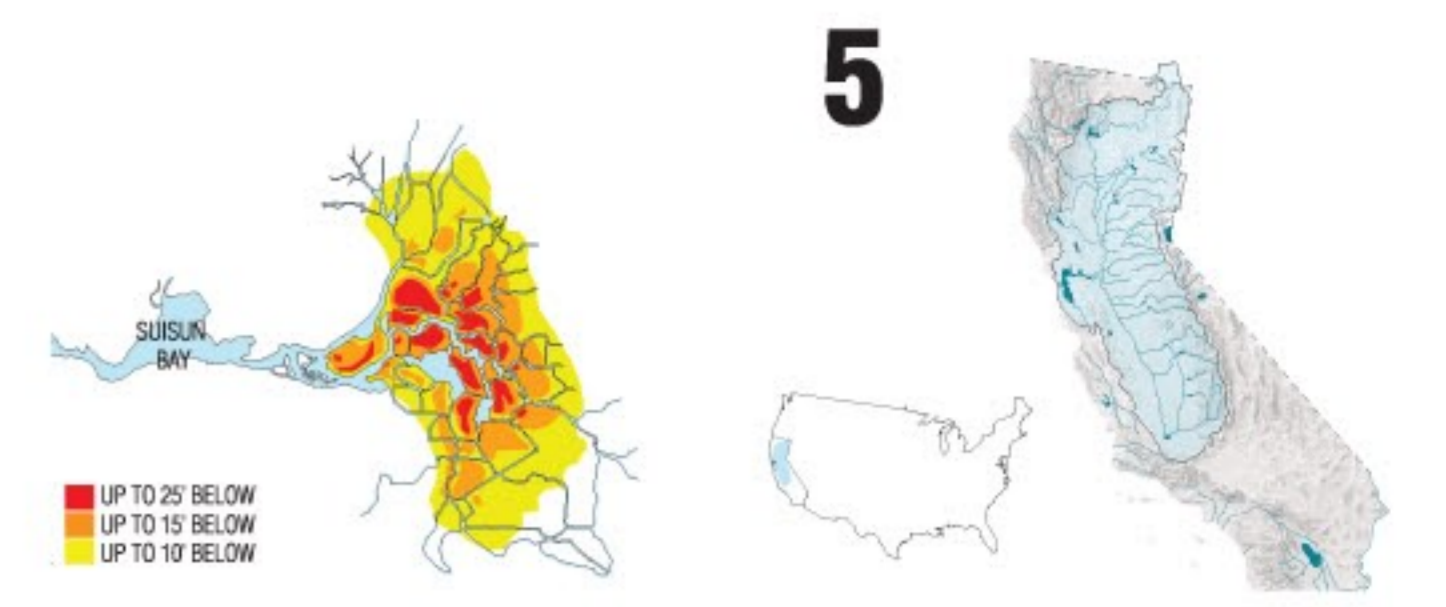


**A MATTER OF PORPORTION**  
Rising sea level poses a great challenge to the Bay Area. However, in the regional context the impact of sea level rise in the Bay Area is dwarfed by the vast area of impact that will be felt in the Delta. Considering the entire area of inundation from a 1m sea rise, over 78% will occur east of the Carquinez Strait in the Delta region.

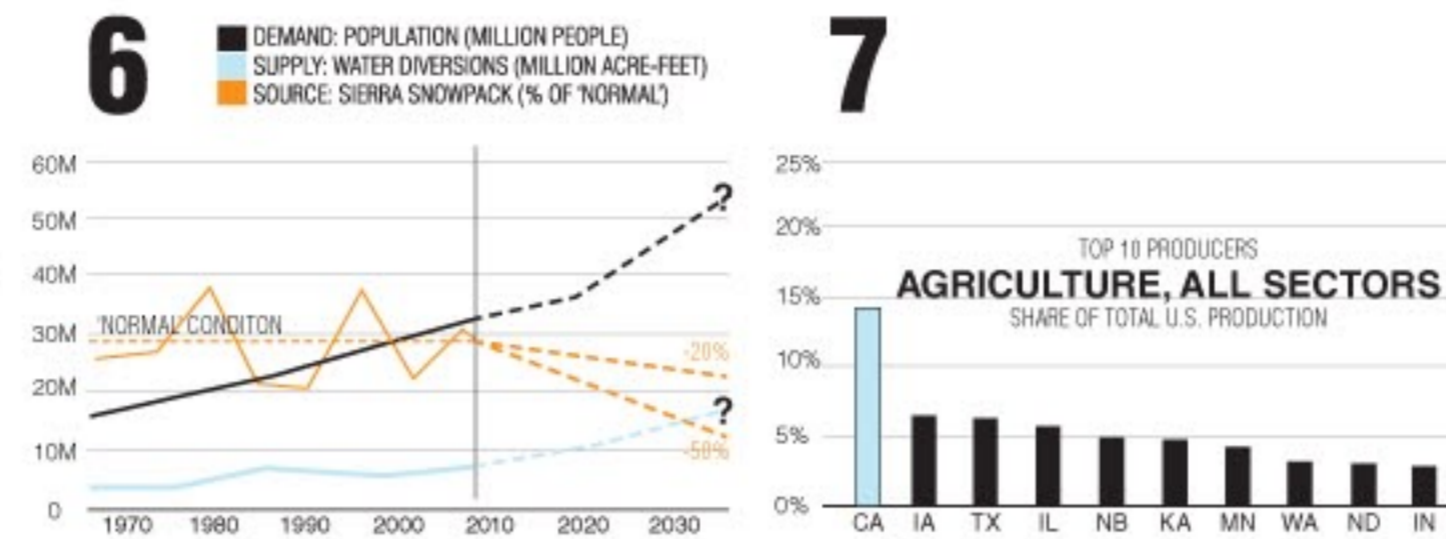


**SUSCEPTIBILITY**  
Closer examination reveals very little urbanized land in the Bay Area will be impacted by a 1m rise at all. Much of what is affected is already at high risk of liquefaction. Future development must avoid such areas of concern entirely.

**SUBSIDENCE & FRAGILITY**  
Over 1,100 miles of levees protect the Delta. The land protected has subsided greatly and is as much as 25' below sea level. Breaches of these fragile levees are not infrequent albeit a significant breach would be catastrophic. With such an occurrence, salt water would rush rapidly into the Delta, the volume would quadruple instantly and freshwater supplies would be contaminated and disrupted for years.

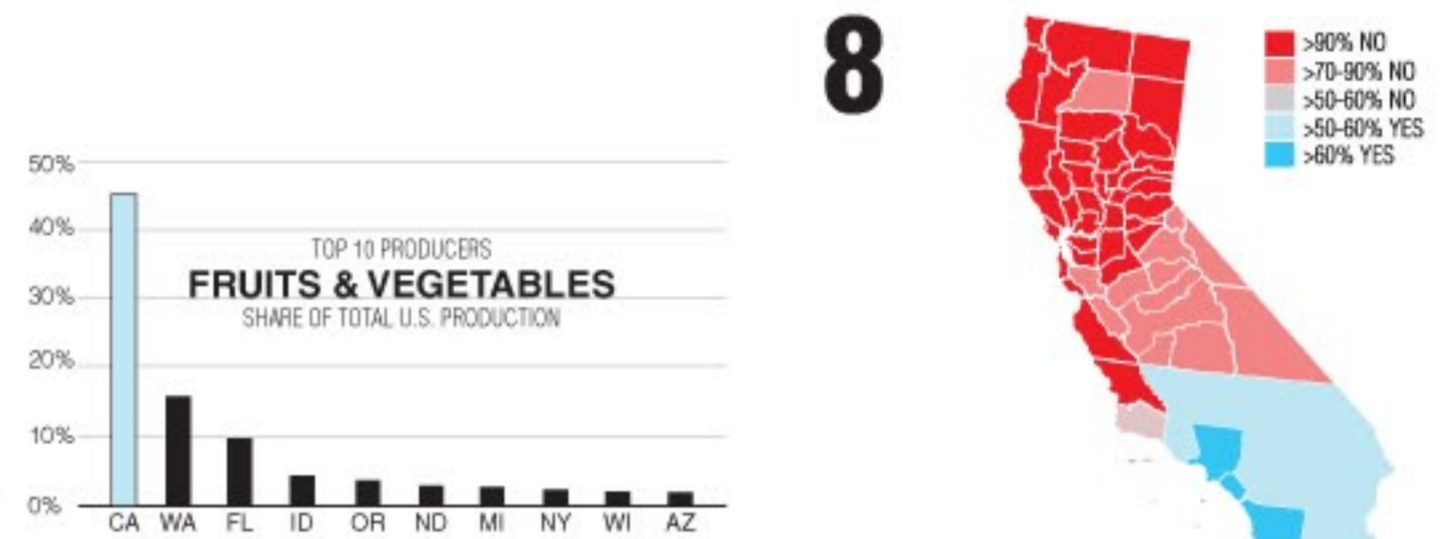


**SCALE**  
The massive Delta watershed drains over 40% of California and crossing state lines, spans 60,000 square miles. Its contamination with salt water would be an ecological disaster.

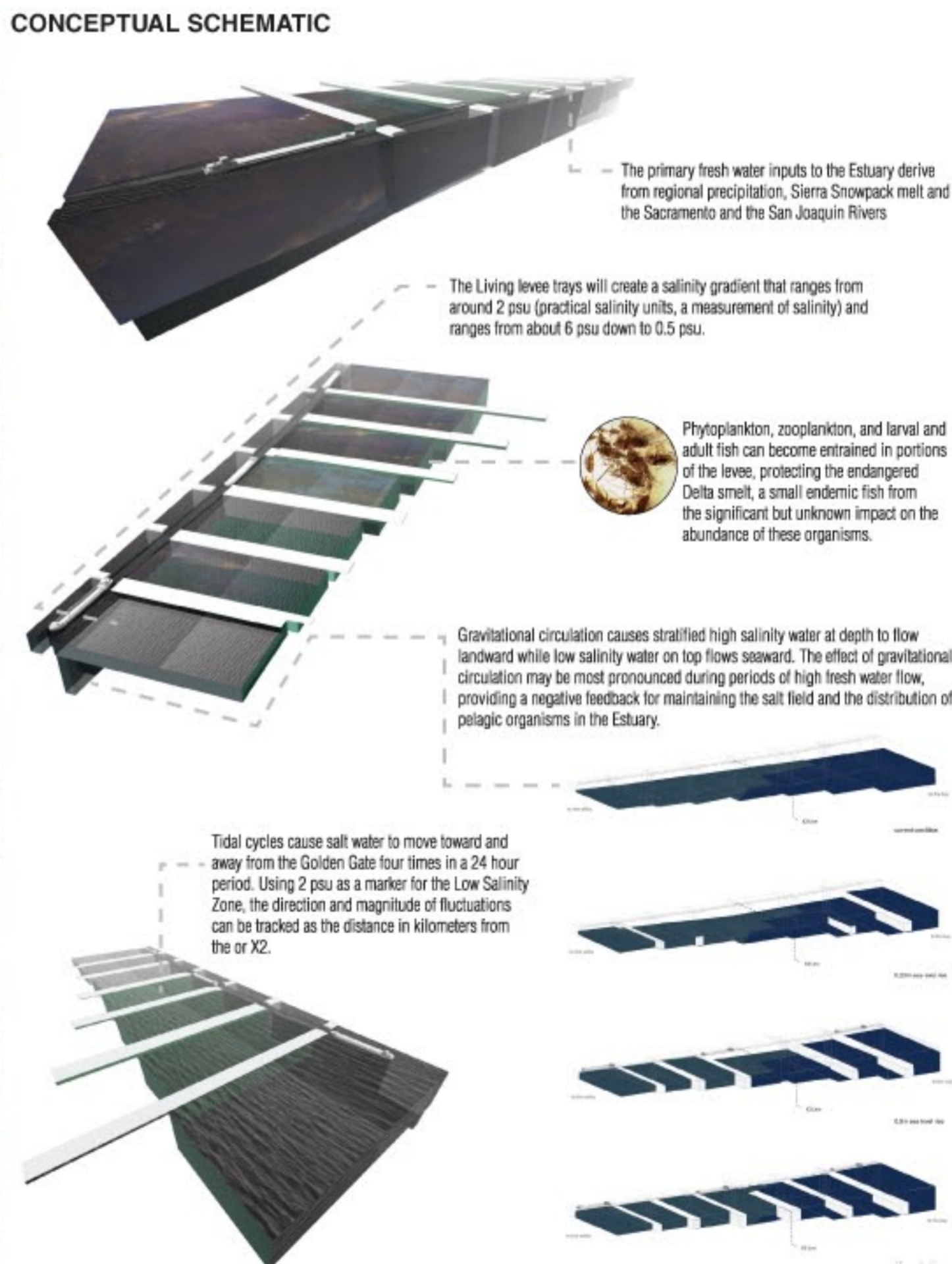
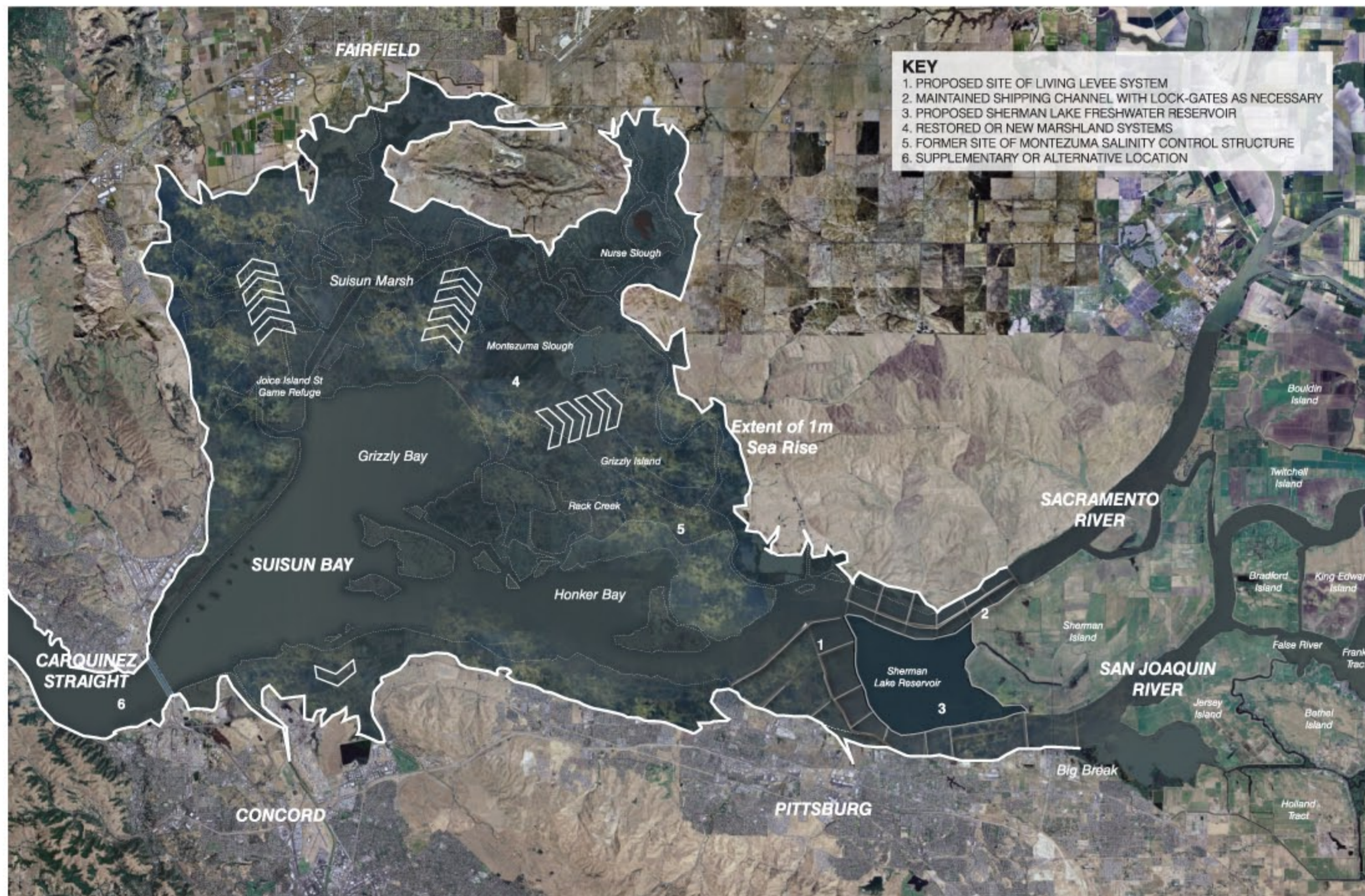


**SUPPLY & DEMAND**  
2 in 3 of 37 million Californians get their drinking water from the Delta. By 2050 the population is to exceed 60 million. With stagnate or dwindling supplies, the Delta is crucial to survival.

**PRODUCTION & ECONOMY**  
California is an agricultural powerhouse. It alone is responsible for 14% of all US agricultural production including nearly one-half of all of American fruits and vegetables. It is a \$5 billion a year industry. This prosperity is enabled by the Delta. Its inundation would not only destroy statewide production capacity, but it would plunge all of America into a devastating food crisis.



**CONTESTATION**  
Sharp lines are drawn when it comes to water, as seen from the June 1992 Proposition 9 (Peripheral Canal) results. Whatever the outcome, it will certainly be controversial.



— Sherman Lake Reservoir, with capacity to hold roughly 96,425 acre-feet of fresh water from the Sacramento and San Joaquin Rivers.

— The Sherman Lake Area is one of the most fertile fishing areas in California with migration of striped bass, sturgeon shad and king salmon taking place throughout the year.

— Maintain levee integrity and stability on Sherman Island.

— Intermediate habitat that resists colonization and establishment by non-native plant and animal species.

— Mason's Illaenopsis (*Illiaenopsis masonii*), a California native rare plant.

— 3.7 acres of functioning intertidal channel margin habitat that will benefit native aquatic species.