



WPA 2.0 Working Public Architecture

Water Economies/Ecologies

Renewing the Salton Sea

The United States has 6.5 percent of the world's fresh water within its borders, yet despite this abundance the country is entering a period of crippling water shortages. Even without factoring in the expected drought effects of climate change, thirty-six states predict shortfalls in the next ten years that will put their environmental and economic health at serious risk. Making the problem more acute, the driest states are also the fastest growing; six of the ten fastest-growing cities in the US—Dallas/Forth Worth, Phoenix, Houston, San Bernardino, Houston, and Las Vegas—are located in water-strapped regions of the southwest.

Manufactured Ecologies: Salton Sea

Perhaps the most striking aspect of the water infrastructure sustaining the southwest is the accelerated rate at which landscapes and ecologies are created, erased, and redefined. An extreme example of this environmental impact is the Salton Sea, southeast of San Diego. Salton Sea is a 932 km² sea with 177 km of shoreline. It is a terminal lake, with no natural outlet, and high evaporation rates operating informally as an agricultural sump for the Imperial Valley, one of the US' largest agricultural regions, artificially sustained in the desert. Currently the Salton Sea is 25 percent more saline than the ocean and increasing by a rate of approximately 1 percent annually.

Thirsty Cities, Wet Farms

In 2003, a federally mandated requirement to transfer over 10 percent of the Imperial Valley's water allocation to San Diego threatened the Salton's future. Massive and costly infrastructure projects are proposed in which the sea is partitioned, to preserve a portion of the sea's ecology, while allowing the rest to become a salt sink. California has until 2018 to come up with a long-term restoration plan for the Salton; without such a plan the sea will decline rapidly, losing roughly 60 percent of its volume, tripling its salinity, and exposing nearly 300 km² of lakebed within a dozen years. All of this will lead to massive die-offs of birds and fish as they are displaced from their habitats.

Water Economies

The issue of water demand across the region is central to the sea's future. With urban areas competing for Imperial Valley's allocated use of Colorado River water, this proposal establishes the Salton Sea as a site for water harvesting. Rather than a single partitioning of the sea as many have proposed, our plan populates it with floating pools or waterpads of various sizes and salinities. The four pool types are dedicated to production, harvesting, recreation, and habitat. The floating pool systems generate micro-ecologies that capitalize on the benefits of higher-salinity water, including a rich growth of kelp and algae, a fertile environment for tilapia farming, and salt crystallization. Freshwater harvesting converts ocean saline water into salt crystals and potable water, addressing the water quality issue within the Salton while also generating an economy of water trade for thirsty cities.

These micro-ecologies are partially moored in place but can also migrate within a territorial range of the Salton. When maintenance or substantive harvesting is necessary, they are brought to shore for collection or upgrade. Along the east and west shoreline of the Salton, the gridded landscape of the Imperial Valley is extended northward to generate a new water-efficient landscape sustained by the Salton and the Coachella Canal. A series of bays, jetties and docks articulate this renewed edge.

The opportunity for projecting a future infrastructure lies in bundling multiple processes with spatial experiences. The intention is to declare infrastructures as soft systems, adaptive and responsive to environments and use. Rather than a New Deal approach of massive engineering or iconic infrastructure, we set the way forward to privilege adaptable, small-scale interventions that can operate at a territorial scale. More easily upgraded, these infrastructures double as landscape life supports, creating new sites for production and recreation. The ambition is to supplement ecologies at risk rather than overhaul them so that they may generate their own entrepreneurial economy.

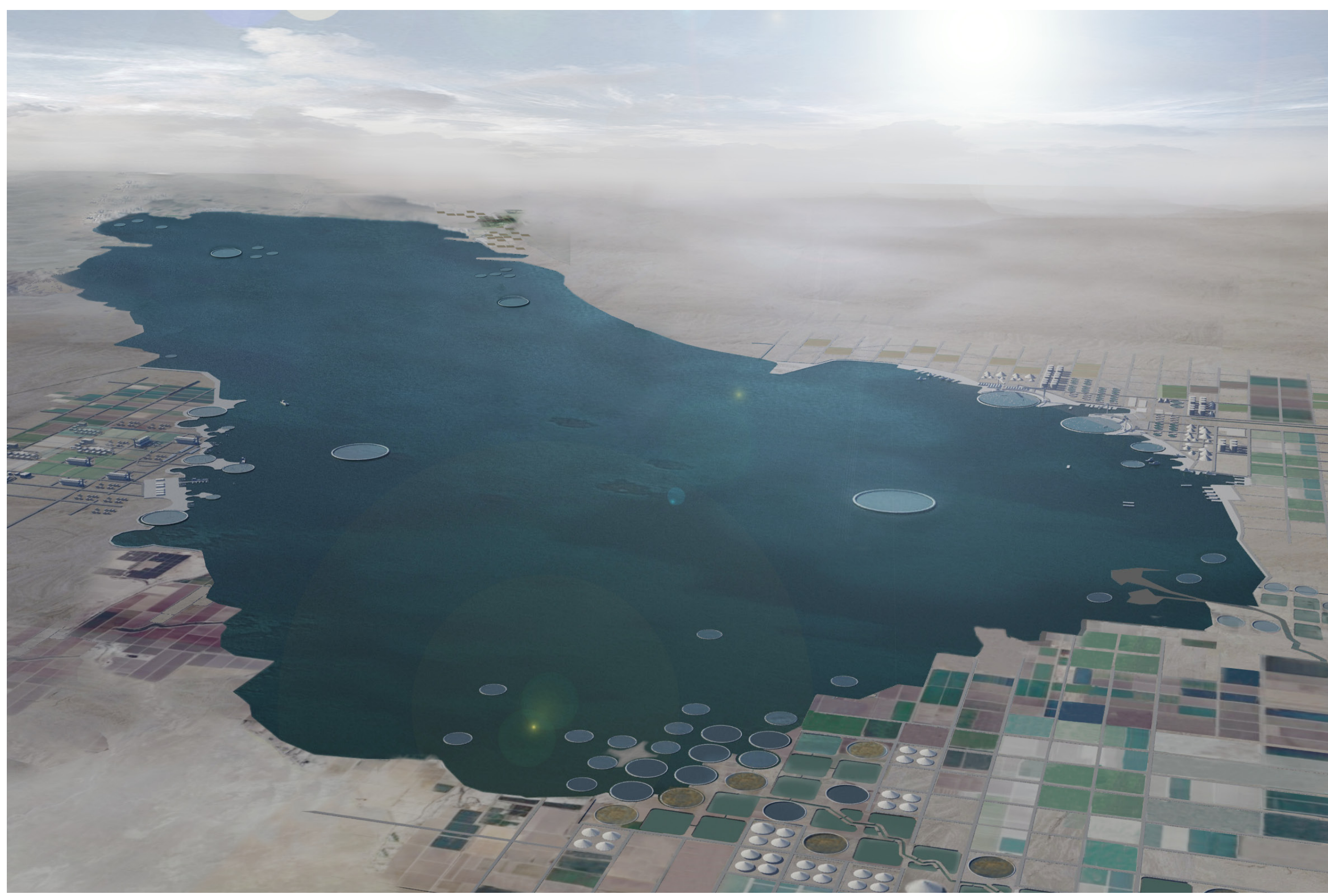
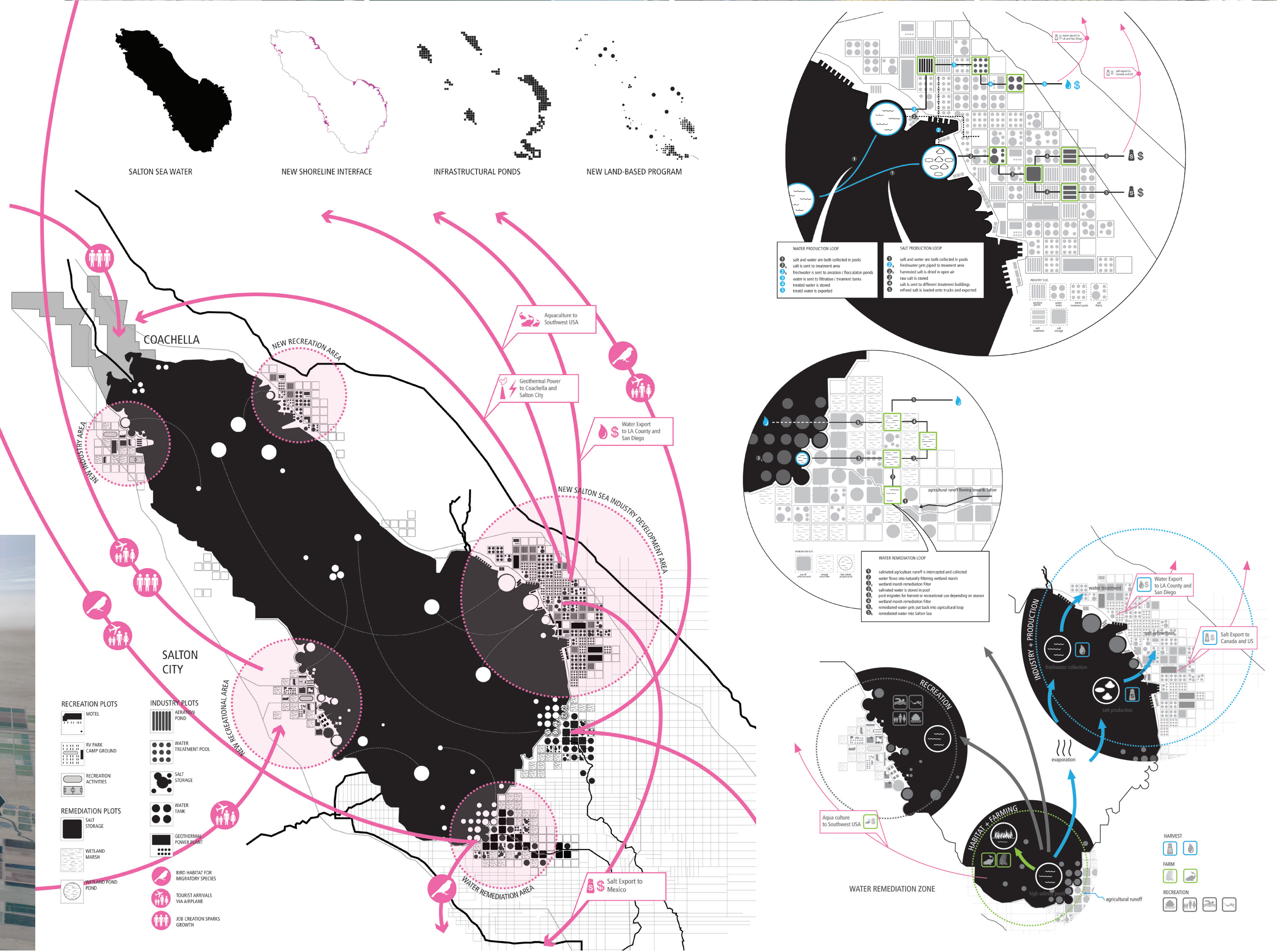
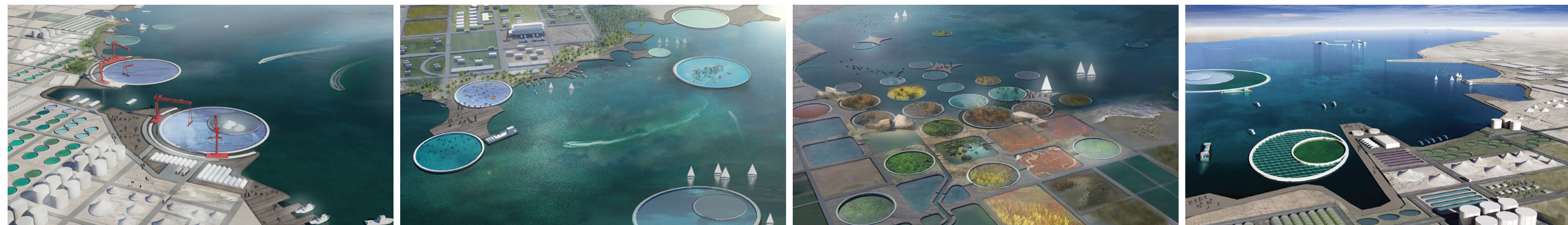


Fig. 1 Population growth and river networks

Fig. 2 Water diversion in the Colorado watershed

Fig. 3 The All-American Canal and its dependent economy, the Imperial Valley.

Fig. 4 Old and new typologies of the Salton region.

Fig. 5 Renewing the Salton Sea with water economies.

