

3. *Water desalination.* Taking the salt out of seawater is a technology that has been practiced on a limited scale for at least two decades. There are a number of desalination processes (electrodialysis membrane desalting, reverse osmosis, and so on), but one of the biggest stumbling blocks is making the process commercially feasible. While work goes on in that area, one of the most crucial features is to develop nuclear power, because desalination uses a large amount of energy. Cheap nuclear power, delivered by high temperature gas-cooled reactors (HTGRs), would help spur the process.

But these solutions are not being pursued in the nation or in California. In Figure 10, notice that the amount of

irrigated agricultural land in California has declined 10% since it reached its peak of 9.7 million acres in 1981. If the Newt Gingrichs and Pete Wilsons, and the London oligarchical financiers have their way, this will be slashed further.

The Flood of '97 demonstrates that it is not natural occurrences, but incorrect economic policies, that caused the vast majority of preventable damage. Rather than waiting for the catastrophe of the next flood, and the news media's retailing of ridiculous tales about why it occurred, there is a simple solution: Reverse the trend and put the emphasis back on one of the best examples of man's creative development—infrastructure.

George Chaffey enabled the Imperial Valley to bloom

California was developed by a republican movement's commitment to science. Work to reshape California is exemplified by the Imperial Valley, which was a stretch of sand until developed by George Chaffey, Jr., during the first decade of the 20th century, into a fertile producer of fruits and vegetables.

Chaffey was born in January 1848 in Brockville, Ontario, Canada, the son of George Chaffey, Sr., a shipper and shipbuilder who supplied iron ore to Cleveland, Ohio. Though the members of the Chaffey family were Canadian, their patrons were leaders of the Ohio and Pennsylvanian Republican parties, who strove in Abraham Lincoln's tradition, to populate the American West with farms and industry. Chaffey assimilated this method and this mission as his own. Chaffey went to work for his father as a marine engineer. At 17 years of age, he invented a new type of marine propeller that was faster than existing types and fuel efficient. It was fitted to many oceangoing and Great Lakes steamers.

From 1881 to 1886, Chaffey and his brother William, a horticulturalist, worked with spectacular success on two irrigation settlements in San Bernardino County, California, east of Los Angeles. In both cases, the land for the projects had been considered worthless, except as pastureland. In 1884, Chaffey organized the Los Angeles Electric Company, of which he was president and an engineer, and made Los Angeles the first city in the United States to be lit exclusively by electric light.

During 1886-96, Chaffey worked developing irrigated settlements in Australia.

In 1900, Chaffey became president and chief engineer

of the California Development Company. His job was to develop a desert area in the extreme southeast tip of California, which borders Mexico to its south and Arizona to its east. In its existing form, the desert land was valueless and had defied attempts to develop it. The area, which is now the Imperial Valley (a name Chaffey gave to it), had once been under the northern end of the body of water called the Gulf of California, where the Colorado River ends its run. The lowest part of this desert was called the Salton Sink.

Chaffey's job was to construct irrigation canals capable of diverting 400,000 acre-feet of water per year from the Colorado River to this desert area. He built a canal that crossed sand dunes in California, passed over into Mexico at the Alamo River, then crossed back into the United States. At this second crossing point, Chaffey founded the twin cities of Calexico, California and Mexicali, Mexico. Today, Mexicali has a population of more than 1 million people.

All told, Chaffey built a 70-mile-long irrigation canal, as well as 400 miles of irrigation ditches. He irrigated 250,000 acres, making the desert bloom. Between 1901 and 1904, some 10,000 settlers came to the area to farm.

The project enraged British-controlled President Teddy Roosevelt, who considered the miracle of the Imperial Valley offensive to his conservationist and anti-development sensibilities. Roosevelt used agencies of the U.S. government to break the California Development Company, and drive Chaffey out of it. In 1904, the Imperial Development Company went bankrupt. In 1911, it was taken over by the Imperial Valley Irrigation District, which manages the area to this day.

Chaffey's achievement endures. (See also, "Imperial Valley: The Desert Blooms, Despite Teddy Roosevelt," by Peter Chaitkin, *New Federalist*, Oct. 21, 1988.)

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