

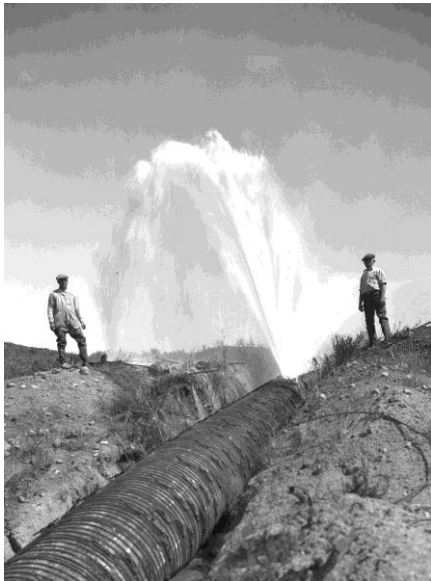
## “The Wooden Pipeline to San Diego”

*There wasn't a lawn in the city. But some people went without baths so they could water their pet shrubs. Everybody with money left town. Those who remained became water experts.*

--Fred Heilbron, city councilman and water crusader.

With a population of less than 18,000 at the turn of the century, San Diego's water needs should have been simple. But after several years of drought in the late 1890s, the thirsty city struggled for a reliable water supply.

Even the great wooden flume built in 1888 that brought rainwater from the Cuyamaca Mountains to San Diego was running almost dry after three years of rainfall that averaged barely five inches. The San Diego Water Company maintained a meager supply in 1900 by pumping from wells in the bed of the San Diego River in Mission Valley.



Wooden pipe often failed

To ensure dependable sources the City of San Diego looked to the private companies that supplied all of the region's water. In late 1900, the City Council approved the purchase of the 28-year-old San Diego Water Company, and the distributing system of the Southern California Mountain Water Company for water delivered within San Diego. City voters passed bond measures the following spring to finance the purchases.

The Southern California Mountain Water Company, owned by capitalists John D. Spreckels and Elisha S. Babcock, had recently built the Lower Otay Dam (1897), started work on the Morena Dam, and planned construction on Barrett Dam. The *Union* predicted the string of new reservoirs—perhaps the largest water project in the United States at the time-- would create “an immense storage capacity” with a “practically exhaustless” water supply.

To get that water to San Diego the Southern California Mountain Water Company began construction of a pipeline. Remarkably, the pipe would be made of wood, stretching nearly twenty miles from Otay to San Diego, with additional branch lines to supply farmers in the Otay Valley and residents of Coronado.

In the early century wood-stave pipes were the modern method for bringing water to cities. The first public water system in America had brought water to Boston, Massachusetts through wood pipe in 1652. Two and half centuries later, the technique was still state of the art. “It is common knowledge that wood pipe,” noted the American Water Works Association in 1922, “buried in the ground or kept saturated with water, has an indefinitely long life.”

For the San Diego project, engineers designed 40-inch diameter pipe made from Humboldt County redwood. The pipeline would run northward from Lower Otay for nineteen miles, ending

at a new city reservoir being built at Chollas Heights. From Chollas the water would run four miles northwest through cast iron pipes to the city filtration plant at University Heights at Howard Avenue and Oregon Street. There the water would be aerated in a fountain and then piped to city users.

Construction began in December 1900, when laborers from the Mountain Water Company began building tunnels and trestles in preparation for the redwood pipe, which was being cured on Coronado. The contract for trimming the lumber into pipe staves went to the Russ Lumber Company of San Diego.

Building the pipeline required series of work camps that moved along as the conduit was laid. Tents, cookhouses, and livestock corrals supplied the laborers who earned \$2 a day, minus \$4.50 a week for board. The poorly paid work was manual and low-tech. Mules dragged excavating “machines” and horse teams delivered materials by wagon.

With the trenches dug the workers assembled the redwood pipe like a cooper building a barrel. The tapered, wedge-shaped staves--12 to 16 feet in length--were formed into a cylinder held together by iron bands. Water pressure usually kept the pipe tight, though blown-out staves and broken bands could create spectacular geysers. Properly maintained, engineers expected the wood pipe to last about 25 years.

“Neither men nor money will be spared in hurrying the water into San Diego at the earliest possible moment,” reported the *Union* on January 1, 1901. By late summer the pipeline stretched nine miles. Water to Bonita and Chula Vista arrived in August to irrigate the lemon and orange orchards. The *Union* heralded “the great success which attended this first delivery,” and predicted the pipeline would soon reach the city limits of San Diego.



There was also fast progress building a new city reservoir in Chollas Heights to serve as the terminus of the pipeline. An earth-fill dam with a steel and masonry core was built over the summer of 1901. The reservoir held enough water to supply the city for two months.

But the water to fill Chollas was slow in coming. The Mountain Water Company finished its pipeline to Bonita and then stopped. Decent rainfall in 1901 diminished demand for water from Lower Otay and the pipeline project lagged. In the meantime, San Diego’s first municipal water department--organized in August 1901--continued to rely on supplies from the San Diego Flume Company and well water from Mission Valley.

The City of San Diego agreed to a new contract with the Mountain Water Company in the fall of 1905, to purchase water from Otay for the price of four cents per 1,000 gallons—a price low enough for the city to close its Mission Valley pumping plant and end the purchase of water from the flume company. Work started up again on the wooden conduit to Chollas and the branch line to Coronado.

The completed pipeline opened on August 13, 1906. In a grand public ceremony at University Heights, Mayor John Sehon turned a six-foot long ceremonial key, which opened a gate to release water that had traveled twenty miles via redwood pipe. Drinking glasses of Otay water were passed among assembled dignitaries. Unfortunately, the soil filters were not working. The cloudy water was politely overlooked and “its excellent quality was generally commented on.”

San Diego’s wooden pipeline lasted until 1930, when it was replaced by a new pipeline of cast iron and steel. By that time the city’s population had grown to nearly 148,000 and plans were being made for a massive reservoir at El Capitan in a new attempt to address the insatiable demand for water in San Diego.



The construction of wood stave pipe near Chollas.

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From Richard Crawford, *The Way We Were in San Diego* (Charleston, S.C.: The History Press, 2011), pgs. 70-74.