Strong Woman's Water: To dam water was her thing but in the 19-teens, the U.S. government rejected her patent to detour the Colorado River into a reservoir in the Grand Canyon. Harriet Russell Strong had patents for several different types of dams and water storage systems. She was an engineer who believed in water conservation and irrigation by natural water sources.

Born in 1844 Buffalo, New York, Harriet went west to California as an 8 year old with her family and grew up in mining communities along the California/Nevada border. When she was 17, Harriet's family moved to Carson City, Nevada where she met, and two years later married, Charles Lyman Strong, a man 18 years her senior.

Charles had made a fortune in banking, publishing, and mining but mining had taken its toll on his health. He moved Harriet and their first two daughters to the San Gabriel Valley in California where he and Harriet purchased a 325-acre ranch. She searched for a stable crop to farm and chose walnuts. Walnut plants require constant moisture so Harriet designed a suitable irrigation system.

The key to her design was that each dam section was to be structurally supported by the water pressure from the adjoining, preceding dam. Her design allowed for a controlled and uniform regulation of water flow and introduced continuous winter irrigation on their ranch.

But Charles soon became bored. He often was away from their ranch for extended periods as he followed quixotic leads to strike it rich in mining. But instead of fortune, he found debt, a debt he dramatically increased when, without Harriet's knowledge, he borrowed heavily against their ranch to invest in a number of business ventures that failed. Disparagingly he took his life in 1883 leaving Harriet as a single mom with his mountain of debt and legal fees with which to deal while raising their four daughters and fighting to keep her ranch.

Strong tried to earn income with her inventions but her three patents proved unprofitable. To maintain a cash flow while waiting for the walnut plants to bear walnuts, she developed an innovative process for growing brightly colored pampas plumes that were popular with milliners around the world. Her lucrative plumes' business helped her earn enough money to buy more land, which she leased for truck farming. She also drilled three successful oil wells on her property, formed a water company, and her walnut orchards became the largest in the country. She paid all her husband's debts and formidably supported herself and her daughters.

By 1887 Strong became known as the "Walnut Queen" and her irrigation systems became known throughout the southwest. Her inventions of new types of dams and water storage systems represented major breakthroughs in dry land irrigation and helped farmers during the early land settlement of Southern California and much of the southwest. They were widely adopted throughout the region and were credited with speeding the growth of Southern California's food-producing areas. Strong continued developing her ideas for water irrigation and eventually became an advocate for water conservation.

Her campaigns for conservation that helped to bring water and electricity to southern California also included flood control innovations that greatly improved the safety and well being of those living in the flood-prone Los Angeles basin. She invented and patented a flood control/storage dam system that incorporated several dams to serve as "backups" to one another in case of a break.

Strong was an enterprising female engineer who had patents for many different types of dams and water storage systems. By 1890, she had accumulated a substantial fortune and she began to turn her attention toward societal causes.

Throughout the 1890s, she traveled across the continent with Susan B. Anthony to promote women's suffrage, education, and independence. She became the first female member of the Los Angeles Chamber of Commerce, founded the Ebell Club, was elected the first President of the new feminist Business League of America, and served as a Director of the Los Angeles Philharmonic. Strong was the first woman Trustee of the University of Southern California Law School, and one of the first engineers to advocate diverting water from the Colorado River to Los Angeles.

She appeared before Congress in 1917 to present a plan she designed to control flooding and to help end a dramatic food shortage that had developed during World War I. Her plan was to dam the water of the Colorado River and detour it into a reservoir in the Grand Canyon. She was rejected by the Congressional Committee for a reason Strong could only determine was because she was female, and she spent the rest of her life fighting for women's rights as well as water conservation, farming, and educational improvements.

In 1922, the Reclamation Service presented to Congress a report principally authored by Reclamation Service chief Mr. Arthur Powell Davis calling for development of a dam on the Colorado River to control floods, provide irrigation water, and produce hydroelectric power. It would create a reservoir in the Grand Canyon. In 1928 President Calvin Coolidge signed a bill authorizing this project.

Harriet Russell Strong died in 1929 at age 85. In 1931 Hoover Dam construction began to dam water.

Sources: http://web.mit.edu/invent/iow/strong.html,
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