Fillmore, California, U.S.A.
Population: 15,000

**Organising authority:** City of Fillmore.

**Water operator:** American Water’s Contract Services Group (American Water).

**Location:** Fillmore, California.

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**Description of contract**

American Water was chosen by the city of Fillmore to design, build and operate (DBO) the new wastewater recycling facility under a public-private partnership. The new facility has replaced Fillmore’s existing 50-year-old facility and serves approximately 15,000 residents and businesses. American Water will operate the facility until 2029. The construction commenced in 2007 and operation started in 2009.

**PPP context and objectives**

As per the new regulations, the city was required to improve the quality of treated wastewater discharges to the Santa Clara River. This threatened the continued operation of the city’s old WWTP in its current state. The Fillmore WRP was undertaken in response to the stricter discharge regulations brought down by the Los Angeles Regional Water Quality Control Board. The Fillmore wastewater treatment plant needed significant upgrades in order to comply with stricter environmental standards.

The objective of the PPP was to design, build and operate a facility to produce high-quality disinfected water to meet the stringent standards required for surface and sub-surface irrigation of public and private utilities.

**Improving energy efficiency**

The plant features state-of-the-art technology that maximizes energy efficiency helping to keep costs down. A flow-equalization system minimizes water flow during the day, when cost and energy use is highest. The facilities also include a recycled water tank that has a storage capacity of 1 million gallons (3,785 m³). Wastewater is cycled back into the plant where it is treated during off peak hours – when power demand and cost is lower. The current configuration is intended to operate at 1.8 million gallons (6,813 m³) of water daily. The plant’s peak pumping capacity is 4,146 gallons (16 m³) of effluent per minute.

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100% of the treated water is recycled.

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**Protecting the environment from wastewater pollution**

The new plant is yielding water 10 times cleaner than other types of modern activated sludge plants, and this water is being used to irrigate multiple properties, which is a true luxury in California, where water supply is always in demand. The plant currently produces up to 1 million gallons of water daily that meets the standards for unrestricted reuse irrigation purposes. About 800,000 gallons (3,028 m³) per day is discharged to percolation ponds and an underground Effluent Disposal System that provides rainy weather disposal. A membrane bioreactor system and an ultraviolet disinfection system yield cleaner recycled water suitable for irrigation.
Improving energy efficiency
Protecting the environment from wastewater pollution
Optimising economics of public services

Optimising economics of public services

The current irrigation system provides 200,000 gallons per day to two public schools, the new Two Rivers Park and a new greenbelt along a historic railroad. Plans for the irrigation water also include areas in new home developments, commercial building developments, the site of the old wastewater treatment plant (being converted into a park), the grounds at City Hall and other public areas. The PPP approach and DBO model helped the City achieve a $4 million savings. Savings and water quality have both turned out to be far superior to initial projections. Costs are lower, life span of the membranes is longer, and use of recycled water is reducing demand upon the potable water system as well as providing additional revenue.

“This is a highly successful partnership. We avoided cost escalation, treatment risks, and obtained excellent operator expertise by engaging in a public private partnership with American Water.” Bert Rapp, Former Public Works Director of Fillmore, California

The plant won eight awards, including two Project-of-the-Year (POY) prizes, within seven months of its operation.