FILLMORE WASTEWATER TREATMENT PLANT

AMERICAN WATER

FILLMORE, CALIFORNIA

Public-Private Partnership saves money as it produces water that is ten times cleaner.

Exterior photo of the recycled water storage tank.

Project: Through a contract with the City of Fillmore, California, American Water is designing, building and operating a new, state-of-the art zero-discharge wastewater treatment plant to replace the existing, outdated facility originally constructed in 1955. The new plant will be highly efficient and will eliminate discharge into the Santa Clara River.

Key Attributes: This project is being executed faster than plants of similar size and operation, at 15% less cost. It features today's most precise and advanced treatment processes.

Project Type: Design/Build/Operate (DBO), Public-Private Partnership (PPP)

Project Timeline: November 2006 – August 2009

Challenge: The Fillmore Wastewater Treatment Plant needed significant upgrades in order to comply with stricter environmental standards and to meet the demands of a growing population. The City decided to build a new plant in a different location.

The City chose American Water following a proposal review to lead the DBO project - a $42.5 million, zero-discharge plant that produces recycled water.

Solution: American Water's DBO team worked with the city of Fillmore to ensure a streamlined approach to ensure timely completion. When the project is finished in August 2009, American Water's team will operate the plant until 2029.

High-tech filtration will yield water 10 times cleaner than the old plant. This water will irrigate schools, landscape, city parks and green areas throughout Fillmore. This new plant will recycle 100% of treated water, eliminating any discharge into the nearby Santa Clara River.

American Water achieved this project through a successful PPP – truly an industry model. The DBO model helped the City achieve a $10 million savings on the overall project by working through a single contract with the City with a guaranteed cost. That allowed City officials to effectively manage costs.

Exterior pipes feeds water to the treatment plant.

Interior photo of the plant's pump house.

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Flow chart showing the different stages water goes through to become high-quaility drinking water.

Project Details: Operating at full capacity the Fillmore plant is designed to treat 2.4 million gallons of water daily at final buildout. The current configuration is intended to operate at 1.8 MGD. The plant's peak pumping capacity is 4,146 gallons of effluent per minute. The facilities also include a recycled water tank that has a storage capacity of one million gallons.

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. Wastewater is cycled back into the plant where it is treated during off peak hours - when power demand and cost is lower. A membrane bioreactor system (MBR) and an ultraviolet (UV) disinfection system yield cleaner recycled water suitable for irrigation.

Population Served: About 15,000

Operations: Treated water flow that is regulated through pumps based on pressure and flow measurements. The UV disinfection system features an automated mechanical wiper cleaning system that does not require UV lamps to be out of service during cleaning. Using recycled wastewater significantly reduces demand for potable water. The recycled water irrigation system will be controlled via a fiber optic network using state-of-the-art monitoring and control systems.

The foam and aeration basins water passes through before it reaches the membrane tanks.

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