

Atwater Spruces Up: New Life for Aging Wastewater Treatment Plant

Highway 99 travelers taking in the view near the Applegate Road exit in Atwater, Merced County, would see the community's aging wastewater treatment plant. Incongruously located adjacent to plant, they might notice the newly constructed commercial development. If they inhaled—well, there were those odors from the plant's effluent ponds.

For a community that considers itself progressive, the aesthetics of the Applegate Road/Highway 99 area were embarrassing, if not intolerable. Perhaps serendipitously, the City was about to outgrow the wastewater treatment plant's 1- to 12-million gallons-per-day capacity, necessitating either an upgrade or replacement. Combined with this, changes in National Pollutant Discharge Elimination System requirements meant that the City had to boost its level of wastewater tertiary treatment and de-chlorination levels by June 2012. The time for a new wastewater treatment facility had come.

Rather than upgrade its existing wastewater treatment plant at its current location, the City elected to build a new plant 5.7 miles to the south, on Bert Crane Road, a choice that would reduce operating costs with new and efficient technology, increase potential land used for industrial and commercial developments, and eliminate the effluent odor problem. A new plant would also enable the City to increase the volume of raw sewer flows treated for this service area to 24 MGD at maximum build-out.

In May 2012, Quad Knopf, in partnership with Fremming, Parsons and Peccherino, completed design and construction of the new Commerce Avenue Sewer Pump Station and Odor Control Facility to serve the new Bert Crane Wastewater Treatment Plant. This design, bid, build project required construction of a gravity sewer system, a new wet well and pumping station, an odor control facility, and associated electrical components, including a motor control center and stand-by electric generator. Two, 5.7-mile-long, ductile iron force mains convey discharge from the new pumping station to the new plant.

"The engineering team was able to reduce construction costs and meet a stringent construction timeline by performing detailed engineering evaluations for several elements of the project," explains Miguel Barcenas, Quad Knopf's project manager for the project. Among these evaluations was an assessment of the potential for rehabilitating the existing pumping station and wet well. Because this would be a complex and time-consuming process, the team recommended replacing the pumping station instead. After evaluating several potential sites for the project, the team settled on a location that would not significantly impact property development, yet provided enough area for construction of the new facility.

"Aesthetics were a major element of the Commerce Avenue Sewer Pump Station and Odor Control Facility design," says Barcenas. A new landscape screen blocks the view of the new pumping station and aboveground piping. Plantings coordinate with existing commercial landscaping nearby. Slats in the facility's chain link fencing block the view from Highway 99 travelers and passersby.

Incorporating sustainability into the project design wherever possible, the engineering team specified solar fixtures for interior lighting of the electrical building, biofiltration for odor control, and variable frequency pumps for energy efficiency. A gravity line conveys sewer flows part way to the pumping station, reducing the length of force main required. "We are

grateful for the many cost-saving innovations applied to this project,” says Joe Hollstein, PE, City of Atwater, City Engineer, “and with the team’s attention to green solutions.”

Funding for the Commerce Avenue Sewer Pump Station and Odor Control Facility was provided through City Bonds. Proposition 50 (Water Security, Clean Drinking Water, Coastal and Beach Protection Act of 2002; California Water Code Section 79500 et seq.) provided funding for construction of the new wastewater treatment plant and force-main. The new facilities began operation in July 2012.