



By Clare Pierson

# PIPE DREAMS

**A Las Vegas wastewater treatment plant in the midst of entirely revamping its piping system**

*As is all too common these days, the infrastructure of the piping system at the Clark County Water Reclamation District (WRD) in Las Vegas has been crumbling. In 2007, Doug Drury, deputy director of the Clark County WRD, said the district began a complete investigation of the structural integrity of the piping systems, which consisted of four trunk lines made of unlined concrete pipe that carried approximately 93 million gal per day (mgd) of wastewater influent to the main plant. This investigation came after there was a major collapse in one of the district's trunk lines near the infamous Las Vegas Strip in 2003.*

What they found during this investigation constituted an emergency. The manholes were in complete deterioration, and inspection crew could literally “put their fingers into the walls of the concrete pipes and watch them crumble,” Drury said.

“[Our crew] determined which pipes were unlined concrete pipe, instructed us to replace most of the unlined concrete pipe and pointed out the minimal areas that needed upgrades,” Drury said.

What followed immediately was the 618 Emergency Project, and subsequently, the Flamingo Road project. The 618 Emergency Project was a total replacement of major sanitary sewer intake lines, measuring in at almost 3,900 ft of 84-in.-diameter pipe and 1,000 ft of 60-in.-diameter pipe. The overall footage of replacement pipe totaled more than three miles. The Flamingo Road project intercepted and connected to the 618 Emergency Project and called for three more 84-in. pipes to be replaced.

Both pipe replacement projects were contracted out to Las Vegas Paving, a company that had already done emergency projects for the Clark County WRD. Carollo Engineers, a firm that had been analyzing the trunk lines in the system, continued its work as well, and HOBAS pipe was used for the fiberglass pipe replacements in both projects.

It was a team decision to use HOBAS piping, according to Drury. He said fiberglass was the ideal material for the new pipes because the wastewater influent entering the plant is usually very warm due to the high temperatures in Las Vegas and thus emits a lot of hydrogen sulfide; fiberglass does not corrode under these conditions.

## **Quick Delivery & Challenges**

A fast timeline was put into place for the 618 Emergency Project in April 2007.

“We needed to start delivering our pipe within

four to five weeks of the order,” said Tom Furie, southwestern regional manager at HOBAS pipe. “We had to deliver a ton of large diameter fittings that first had to be built. Las Vegas Paving installed fast and did well, too.”

Another challenge that presented itself to Clark County was the need to perform a total pumping bypass of all incoming wastewater while upgrading and working on the four major trunk lines simultaneously. The flow into the plant wildly fluctuates and sometimes reaches as high as 100 mgd due to the floods of people that flock to Las Vegas on the weekends.

“Multiple pump stations had to pump 100% of our flow for about six to eight months,” said Drury. “Every time you have pump stations like that, you have the possibility of a sanitary sewer overflow, and we did have a large one due to construction around the pumping.”



#### Future Plans

Work is wrapping up on both projects currently, Drury said. The flow has been online for almost two months, but the Clark County WRD is still working on implementing a new odor control system, which is scheduled to be online in a month.

“Before the project, there were odors in various locations and the community noticed,” Drury said.

“With the changes we’ve made, we’ve pulled those gases into the treatment plant and treated the gases here.”

According to him, remaining odor problems, if any, will escalate in the summer when the influent tends to warm up and emit more odor; therefore, it will take six to eight months to gauge whether the community notices a change for better or worse. It is hoped, however, that the new odor control system will mitigate these problems.

“This project was notable for us because it wasn’t Clark County’s first time ever using HOBAS, but it was the first time using us on this large of a scale,” Furie said. “And they trusted us to use their lines for their biggest treatment plant, so that was important to us.”

“The challenges were the fast timeframe with which we had to work, and building relationships between us and Las Vegas Paving and Clark County,” Furie said. “The district seems to be very happy with the outcome, though.”

The Clark County WRD plans on continuing its systematic pipe rehab program by replacing all concrete pipes with fiberglass, project by project, and subsequently lining all pipes. **WWD**

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