

# A Lift Station in a Hurry

By Megan Monson

*Public works managers in the city of The Dalles, Ore., knew they had to replace an outdated wastewater lift station serving the east end of the historic town; they just did not know they had to replace it so fast. The sewage pump station was at the end of its useful life. The city had budgeted for a replacement but had delayed the project slightly so that officials could study the impact of a proposed mixed-use development in the service area.*



Installation of the new pump station took place in July 2009.



Features of the new pump station include an emergency generator, onsite control interface and interior lining of the wet well.



The city received a pre-engineered package lift station as part of a package deal, saving a lot of time.

City addresses emergency lift station situation with pre-engineered package system

“We held off on replacing it until we got more detail so we could size it correctly to meet the new demand and loading,” said Public Works Director David Anderson.

Meanwhile, the city was working with the developer and with Romtec Utilities, Roseburg, Ore., to design a sewage pumping system incorporating features the city had identified as important.

“Our intent at that time was to put together a set of specs and go out for a normal design-build contract,” Anderson said.

But the lift station had other ideas. In March 2009, it began to fail. Operators lost the ability to use one of the two pumps in the station, and structural integrity issues prevented it from being changed out.

### Weighing Options

The city faced a critical decision. The paperwork for issuing a design-build request for proposal (RFP) for a replacement station was almost ready. The timeline looked like this: three to four weeks for the RFP review and submittal phase; 10 days for the city to review and recommend; up to three weeks before city council approval; and perhaps two more weeks for necessary certificates and bonds to be issued.

“We would be months down the road before we even started engineering,” Anderson said.

The other option was to declare an emergency, which would allow the city to put out a sole source contract for lift station design and materials, streamlining other internal processes.

With a failing lift station and no quick fix, the city opted for the emergency declaration, which was issued by the city manager on March 31.

### Lift Station Design

The city’s first move was to hire Romtec Utilities for the wastewater lift station design, engineering and supply of the package pump station. The company designs and supplies complete pumping systems for a wide variety of applications, including submersible wastewater pump stations like the one needed by The Dalles.

“Romtec was already familiar with the lift station specs and the details of the installation, so hiring them on a sole source contract saved us all that time of going out to normal bid,” Anderson said.

It was a solution that worked out well. After successfully dealing with some permitting challenges, the city broke ground on the Eastside Lift Station Project on July 1. Materials for the pump station were delivered on July 7 (four and a half weeks after the initial order), and the lift station was installed shortly afterward. The completed sewage pump station began around-the-clock operation on July 29, less than two months after the city ordered it.

The Public Works Department had spent many hours with Romtec Utilities working on the design before the lift station failure made an urgent solution necessary. A brainstorming session with the wastewater collection workers resulted in the addition of several features, including an emergency generator at the site. The alarming system features redundant controls so that if the main pump controller goes out, the backup still operates. It also has redundant sensing for overflow.

The operators were interested in a design that would be easier to clean, which resulted in an interior lining of the wet well. “You hose it down quick, and it’s done,” Anderson said.

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Workers wanted a good onsite control interface rather than an anonymous black-box SCADA system. The MultiTrode MultiSmart pump controller/RTU gave them the capability they needed.

Important for maintenance safety, the new lift station eliminates the need to actually enter the wet well. “The old wet well had an open lid, and you had to get down in there to clean it out,” Anderson said. “With the new lift station, cleanup is done from above, so you can do away with the confined space entry.”

### Making it Happen

The area served by the lift station, a hotel and restaurant complex, is on the north side of Interstate 84. A developer is working on plans for the Lone Pine Village project, a 250-unit mixed-use redevelopment in the same area. The sewer line crosses under I-84 to gravity feed into the lift station, which is located on property owned by the Union Pacific Railroad.

As part of the permitting process, the city had to obtain a construction easement from the railroad. The city also had to negotiate its way through the Department of Environmental Quality (DEQ) permitting process, a process complicated by the fact that the original lift station was very near a creek.

“We needed to locate it in the same spot or we would have been facing a major construction project,” said city engineer Dale McCabe.

City officials were able to put the replacement station in the same spot by demonstrating its safety from floods. At the same time, they satisfied DEQ requirements with design modifications such as the inclusion of sealed lids on the wet well and control valve vault, and raising the vent pipe from the wet well above the level of concern.

The city’s in-house expertise was another important factor in fast-tracking the project. McCabe directed staff in doing all of the survey work and site plans as well as staking the area out for contractor permitting and easement.

### Breaking Ground

After all of that, it was time to break ground on the lift station. The pre-engineering concept, where Romtec supplied the lift station as a package, afforded the city considerable time savings.

“That approach allowed them to fast-track it in house,” Sheldon said. “With the pre-engineered system, they are looking at the design in terms of choosing features and benefits rather than evaluating how it is put together.”

A complete pre-engineered package system also gave the city some peace of mind when it came to controlling costs, which is a particular concern when hiring contractors on a time and materials basis. With most of the work on the lift station being done in the factory, the city retained more control over the final cost in the field.

The excavation and installation contractor for the project was Crestline Construction. CH2M Hill was hired to do the programming



for the remote telemetry system. Hire Electric did the outside electrical work.

The city also appreciated the ease of installation. “The best thing about the pre-engineering aspect was that it all came out to the site together, and it was all preconstructed,” McCabe said. “The contractor basically put the puzzle together, and it was installed in a day—that’s impressive.” **WWD**

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