

Gorman-Rupp Provides Savings, Efficiency to Pennsylvania Township



Bypass operation allows municipality to fix problems while maintaining services

Hampden Township, located in idyllic southeastern Pennsylvania near Mechanicsburg, is home to more than 25,000 residents. The township is a desirable location for many because of good schools and strong community services. To maintain the township's strong value, municipal leaders pay particular attention to structural maintenance issues while keeping a watchful eye on fiscal responsibility.

The township's wastewater treatment facility is a modern plant fed by suburban transfer stations throughout the area. Pump station No. 8 is a wet well/dry well lift station outfitted with three dry pit submersible pumps. The site is also one of the busiest stations, pumping upwards of 2,500 gallons of sewage per minute. By February 2005, the constant wear and tear on the station's continually working pumps necessitated replacement.

"Due to the frequency and high cost of constantly repairing the dry pit submersible pumps, we decided to replace them with more dependable and efficient Gorman-Rupp T Series pumps," said Tom Fealtman, Township Collection System Foreman. He had good



Three 10" Gorman-Rupp Super T Series® pumps being assembled to replace the old dry pit submersible pumps.

reason; the old pumps were costing the township \$15,000 every four-to-five years for repairs and were using excessive amounts of electricity to complete tasks.

Many municipalities only consider the initial purchase price and installation cost of wastewater pumping equipment. There are many other factors to be considered when deciding on the type of equipment to serve a wastewater pumping station. When considering the options, the township and partners took into consideration the total cost of owning wastewater pumps, which include:

- Initial cost
- Installed cost
- Operating and maintenance costs
- Reliability and the opportunity to standardize
- Ability to obtain spare parts quickly
- Capability to unclog the pump easily

Gannett Fleming consulting engineers, an international consulting firm, was selected to present solutions to the township's challenges. The engineering teams developed a blueprint of how to bring more efficiency to the station, specifying Gorman-Rupp pumps to meet the challenge. General contractor, Pumping Solutions, chose Keystone Power & Pump, Dillsburg, PA, to provide rental pumps for a temporary bypass solution. Envirep, Inc., based near Harrisburg, PA, was chosen to implement the final solution for the station.



Easy access to electric allowed for three motor-driven priming-assisted pumps to be installed for bypass operation during the upgrade. This eliminated the need for refueling engine-driven pumps and reduced noise pollution.

Serving The Public Comes First

The principal problem with taking down pumps (in this scenario) is that the community's wastewater doesn't stop for the maintenance process. Having a solution that continues township services during the renovation was critical.

To maintain services while repairs took place, the team installed three Gorman-Rupp above ground pumps – two 6" and one 4" priming-assisted models to handle the sewage flow as the eight-inch pumps were being replaced. These pumps bypassed the pump station and forwarded, at peak, more than 5.2 million gallons of waste per day to a treatment facility three miles away.

"One pump will do the job," says Scott Webb, President of Keystone. "If needed, the second and third pumps can be used to handle excessive wastewater during a storm or a time of high usage."

All three electric pumps operate on a float system, meaning that if the primary pump's float reaches a certain level due to heavy rain or in the event of a mechanical failure, an alternate pump kicks on. Although each pump is capable of pumping 2,500 gallons per minute (GPM), the main pipeline out of the station is a 16-inch line that transfers 2,500 GPM. Therefore, at peak times, when two pumps are operating, each is driving 1,250 GPM.

Another bottom line benefit for township taxpayers is realized by utilizing electric pumps, which require less manpower to maintain than diesel devices. Electric pumps are also quieter, an important factor due to the pumps being situated above ground and not far from residential areas.

Maintenance Issues, Price & Availability

An efficient and reliable pumping system is dependent on the precise matching of the pumps, motors and controls. The design, engineering and manufacturing of the system must work together to ensure that the system meets requirements and performs reliably year after year.

"The competitor's pumps were expensive to maintain," said Fealtman. "Last year we needed a new impeller



on one pump and the price was \$5,000, and we had to wait for that part. In the past, we have continually had to assume the overhead ourselves by keeping a spare on hand. But with the Gorman-Rupp pumps, the impeller is only \$1,000 and if we need it, G-R can get it to us within hours – not days.”

“In today’s economy, customers need to focus on what they do best,” said Dwight Swan, Envirep’s, Water and Wastewater Equipment Sales Manager. Having to invest resources in inventory and storing it for future needs is not a good use of Hampden Township taxpayer’s money. A more efficient, permanent solution for the township was to use a better quality pump. The pumps they had been using needed overhauled every four to five years at a large investment. Too many times during the year, the seals would fall out, and the impellers were getting beat up.”

The frequent impeller problems can be traced to dry pit submersible pumps being close coupled to the motor. If, for some reason, the pump impeller was abruptly stopped by a solid in the wastewater, damage to the impeller, shaft and/or motor was common. By utilizing v-belt driven T Series pumps, the v-belt drive is forgiving and damage to impeller, shaft and motor became rare when a wastewater solid would abruptly stop the pump impeller.

Water transmission and sewage handling require dependable systems to serve the public. As municipalities are becoming more cognizant of that fact, a great reliance on products and partnerships must be delivered on multiple levels. A company’s commitment to advanced technology, availability and quality is going to continue to be valuable and sought-after resources for communities.



About The Gorman-Rupp Company

The Gorman-Rupp Company is a leading manufacturer of pumps and pumping systems for the municipal, water, wastewater, sewage, industrial, construction, petroleum and OEM markets. The company’s Engineered Systems operation also manufactures a full line of water pressure booster stations including pumps, motors, valves and controls – all housed in weather-proof fiberglass enclosures – meeting about any municipal water supply need.

Ultimately, Gorman-Rupp prides itself on manufacturing and delivering the right pump for the job.



The Pump People®