xylem
Let's Solve Water

Case study
Dewatering • Flood drainage

Some say it cannot be done

Using centrifugal and progressive cavity (PC) pumps in the same Pressure Sewage System (PSS)

The Myra community in Sweden, a rural area with no municipal wastewater system, needed to implement a new system that would meet the municipality's requirements and the community's local needs.

When the Myra community was faced with either implementing their own wastewater system or having the municipality implement the system, they contacted our local office. They wanted a reputable and trusted water and wastewater products and services vendor to help them choose and install their own wastewater system that would connect their community to the municipality's pump station.

"Other regional wastewater system vendors claim the two types of pumps cannot be combined."

The Myra community wanted the system to be as affordable as possible for community residents. Additionally, they wanted the wastewater system to be reliable, scalable, and easy to maintain. Flygt engineers worked closely with the Myra community to identify their specific requirements. They visited the area to survey the land and assess how the sewage needs were being met. Approximately 100 homes initially wanted to participate in this project and more joined as the project progressed.

Using the results from our assessment along with a topographical map, information about the municipality's system, volume of wastewater, and other information our engineers started working on a new, unique design to meet the community and municipality requirements. Our engineers also wanted the system to accommodate both short and long distances between the rural homes and the pump stations.

To help with the design process, our engineers overlaid a detailed map of the area and took special care to ensure that we did not

Customer: Myra Community, Sweden
Challenge: Utilize the most reliable and cost-effective wastewater solution
Solution: 80 Flygt compit pump stations; PSS system design
Products: Complete Flygt PSS packages with M3068.170 (centrifugal) or M3068.175 (PC) pumps

put in a larger system than was needed. We specifically design each wastewater system to meet customer and environmental requirements. For the Myra community, we used our computer software, RioGl, to help with planning the area. Using this software we rapidly evaluated our offerings to find the best fit for the Myra community.

During this process, Flygt engineers identified a need for two different types of pumps. Since some of the houses were quite far from the pump stations, we decided to use progressive cavity pumps, a type of Positive Displacement Pump, as these pumps are a better complement for the high pressure requirements of the long distances. Centrifugal pumps are not the natural choice for the high pressure these houses require.

"The system saved the Myra community approximately 120,000 SEK (about 21,000 USD) per home."

We acheived what others said cannot be done

Other regional wastewater system vendors typically use a single type of pump, claiming the two types of pumps cannot be combined. However, our engineers specifically designed the system with two types of pumps to keep the overall system smaller in scale, reduce the project cost, and keep maintenance to a minimum. If we had opted to use only centrifugal pumps for the whole community, too much demand would have been placed on the pumps and they would not have been able to handle the high pressure needed for the long distances. Alternatively, if we had used progressive cavity pumps for the whole community, we would have unnecessarily raised the cost to the Myra community.

We completed the installation in less than a year, from the first dig until everything was operating satisfactorily. The system, which has been operating smoothly since 2009, saved the Myra community approximately 120,000 SEK (about 21,000 USD) per home over what it would have cost them through the municipality.

We achieved what others said could not be done. We combined two different types of grinder pumps, centrifugal pumps and progressive cavity pumps, to meet the Myra community's specific needs. Not only is the Myra community now compliant with the municipality's wastewater regulations, they have a system designed to meet their specific needs and that can grow to meet their future needs.

Trench for the PSS sewer collection network.

Myra Golf Course, adapted PSS installation with minimal impact.

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