

# Flygt brand N-pumps in Hartland, WI

Flygt N-pumps eliminate clogging, cut energy bills, and eliminate unscheduled maintenance calls in Hartland, WI

In the village of Hartland, Wisconsin, submersible pumps at the village's lift stations were frequently becoming clogged, resulting in emergency service calls to remove debris. The unscheduled calls had become a major expense, as overtime hours and unplanned maintenance costs increased.

## Scope

Unscheduled service calls arrived at all hours of the day, with crews fielding an average of three or four calls each week. Each call required a minimum of four person-hours, often occurring after hours, thus requiring overtime pay. For each call, the responding crew used a crane to lift the pump out of the station and then manually removed the clog from the pump suction. They would then lower the pump back into place, reconnect it, and return to the shop to disinfect their equipment and dispose of the material removed from the pumps.

The crews found that disposable cleaning wipes and other nonwoven sheet materials were the main cause of the clogs. At one station in particular, a group of newly built homes was found to be a significant source of the clogging materials. Quick response times by the utility operators prevented any basement backups in the surrounding homes, but there was a constant concern about basement flooding. Clearing the pumps also raised health issues for the personnel, since they were potentially exposed to pathogens and hazardous waste each time they cleaned out the stringy debris.

## Solution

The village of Hartland replaced two multi-channel-equipped submersible pumps at its clog-prone Crystal Drive Lift Station with two Flygt brand 5-horsepower pumps. The new pumps feature patented N-technology with self-cleaning impellers and pump housings. Backswept leading edges on the pump impeller shed rags and stringy material with each rotation, and the pump housing has a groove that channels the fibrous material away.



A lift station in the village of Hartland, WI

**END USER:** Village of Hartland, WI  
**CLIENT:** Crystal Drive Lift Station  
**ORDER DATE:** 2003  
**COMPLETION:** 2005

The new Flygt pumps immediately eliminated the clogging problem at the Crystal Drive station, and the village replaced the pumps at a second clog-prone location, its Arlene Drive Lift Station. The new pumps achieved the same positive result, and the village soon converted three additional lift stations to the Flygt N-pumps.

#### Result

While the primary goal of the pump replacement was to resolve the clogging problem and put an end to costly and troublesome emergency service calls, the village of Hartland soon recognized a significant side benefit: a dramatic reduction in energy use.

At the 5-horsepower Crystal Drive Lift Station, electricity costs dropped from \$1,780 per year to \$883 per year, and at the 20-horsepower Arlene Drive Lift Station, electricity charges dropped from \$4,200 per year to \$1,960 per year.

The energy savings can be attributed to the sustained high efficiency of the new pumps, which do not become clogged with stringy material. The old pumps quickly became clogged with the buildup of rags and stringy material, preventing the flow from passing freely through the pump.

Unscheduled service calls to fix clogged pumps were eliminated, saving person-hours and costs in the maintenance budget.

The risk for basement backups caused by pump clogging was alleviated, and worker safety was improved, since personnel no longer need to clean hazardous stringy material from the pump impellers.



Flygt N pumps eliminated the frequent clogging problem caused by the former pumps

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