

Rennes Métropole cuts wastewater overflows into the Vilaine River with Flygt Concertor®

Intelligent pumping handles higher wastewater flows while keeping electricity use stable and simplifying maintenance.

The background

Rennes Métropole provides public services for 450,000 residents across the Rennes metropolitan area in Brittany, France, including wastewater management, transportation, waste collection and public infrastructure. Its Wastewater Department manages 25 treatment plants and a 1,460-kilometer gravity sewer network.

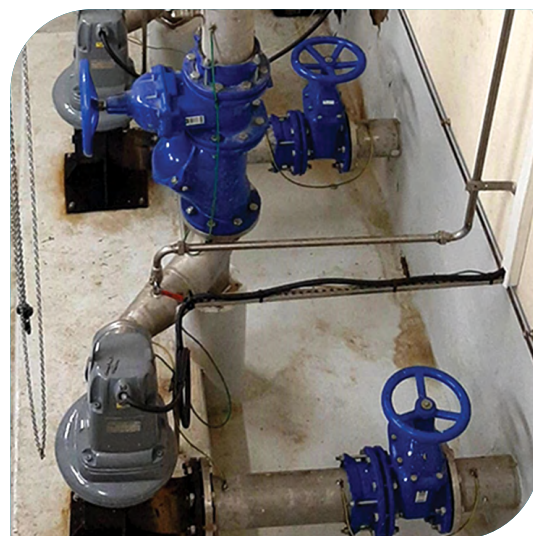
Within this network, the Constant Véron pumping station in central Rennes provides buffer storage upstream of the Beaurade wastewater treatment plant. The largest treatment plant in Brittany, Beaurade treats wastewater from more than 360,000 residents.

Aging pumps at Constant Véron could no longer reliably handle incoming flows, especially during storms. When flows exceeded pumping capacity, wastewater overflowed into the Vilaine River, creating an environmental and operational concern.

Rennes Métropole considered two options: expand the existing buffer basin or replace the aging pumps with more advanced, higher-capacity technology. Enlarging the basin would have required major construction work and caused significant disruption in the surrounding area. The authority therefore chose to modernize the pumping system while retaining the existing basin.

The solution

Building on a technology partnership with Xylem spanning more than 30 years, Rennes Métropole selected two Flygt Concertor pumps for Constant Véron. Installed in a dry pit and paired with Xylem Nexicon pump station control, the new solution entered service in September 2020. It gave the station greater pumping capability and intelligent control to respond automatically as incoming flows changed.



Flygt Concertor pumps in a dry pit at the Constant Véron pumping station.

Client

Rennes Métropole

Xylem's role

To upgrade a capacity-constrained pumping station and reduce wastewater overflows into the Vilaine River.

Results at Constant Véron:

- Wastewater overflows down from 17 in 2018 to 7 in 2021 and 0 in 2022.
- Electricity use remained stable despite significantly higher wastewater throughput.

At Constant Véron, incoming flows can vary sharply, particularly during storms. A radar level sensor in the basin provides real-time input to the control system, which automatically adjusts pump flow and power as conditions change. This allows the station to respond more effectively to peaks in incoming wastewater without any expansion to the existing basin.

Installing the Concertor pumps in a dry pit also improved access for maintenance teams. Rather than working with submerged equipment, staff can reach the pumps directly, helping simplify inspection and maintenance.

The results

Since the new system entered service in 2020, Rennes Métropole has reported major environmental and operational improvements. Wastewater overflows into the Vilaine River fell from 17 in 2018 to seven in 2021 and zero in 2022.

At the same time, electricity consumption remained stable despite a significantly higher volume of wastewater passing through the station. The dry-pit installation has made maintenance easier, while automated control of flow and pump power helps the station respond to changing conditions.

The authority sees the station as a model for similar modernization projects elsewhere in its wastewater network.



Flygt Concertor is a fully integrated, intelligent wastewater pumping system.

Xylem's Flygt Concertor XPC

- Automatically adjusts pump operation as station conditions change.
- Detects clogs and provides automated pump, sump and pipe cleaning.
- Optimizes energy use for up to four pumps using intelligent station control.

“Protecting water and the environment is one of the key missions of Rennes Métropole’s Wastewater Department. Thanks to the innovative technical choices made with Xylem, the Constant Véron pumping station will serve as a model for the metropolitan area, supporting similar modernization projects at other sites.”

Jessy Marais, Electromechanical Renewals Coordinator, Rennes Métropole