

Westermo Technology Enables Cost-Effective Upgrade of Illinois Water Pumping Station Control System

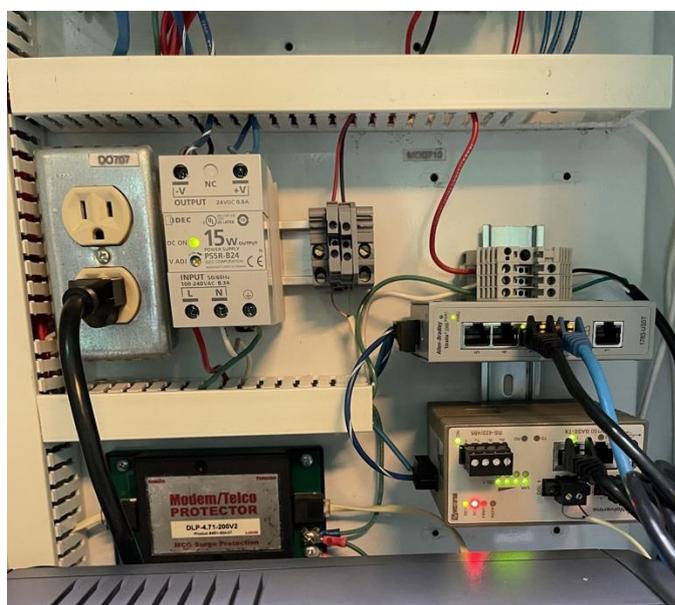
Ethernet line extenders enable existing telecom cables to be used for new resilient data communications network supporting updated PLCs

Westermo technology has enabled a cost-effective upgrade of the data communications network supporting new PLCs at water pumping stations in Bedford Park, Illinois, USA. Westermo Wolverine Line Extenders have enabled the existing cabling to be reused for a new resilient Ethernet network, helping to considerably reduce installation time and costs.

The ageing PLCs that controlled equipment at three pumping stations were becoming obsolete, with maintenance requirements increasing and sourcing spare parts challenging. It was decided that the PLCs would be replaced, along with the supporting data network, which was based on a proprietary protocol and did not offer the necessary reliability or functionality.

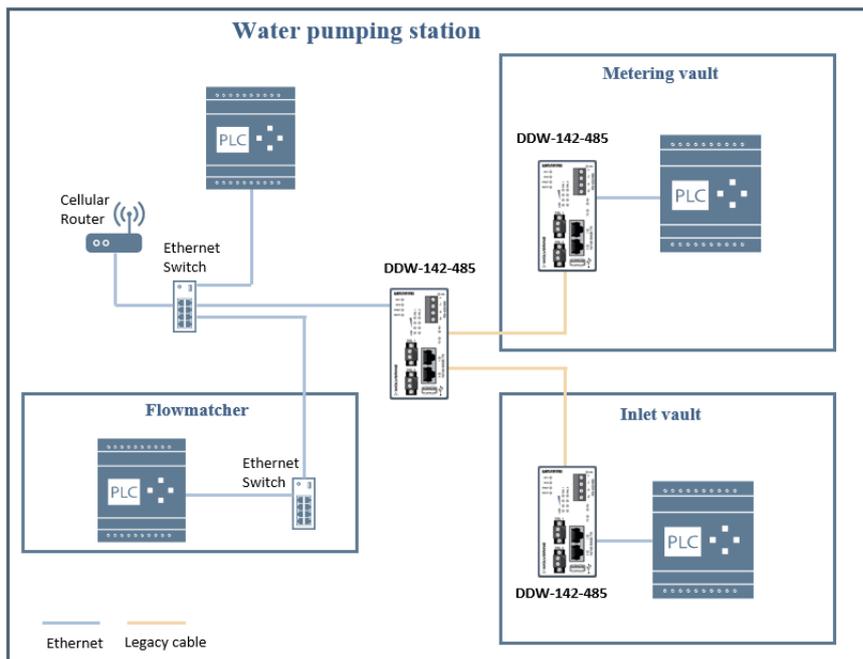
[Concentric Integration](#), a company specializing in utility technology for governments and municipalities, was tasked with upgrading the system to increase its reliability and ensure it could be supported in the future. A new Ethernet network was required, but the cost of replacing existing cabling with fiber was not only very expensive, but also extremely time-consuming.

Concentric Integration turned to Westermo for support and the company's Wolverine range of Ethernet line extenders provided the ideal solution to this issue. The Wolverine extenders utilise SHDSL technology on twisted pair cables to establish a high-speed remote connection between two Ethernet networks. Instead of installing fiber or radio links, the SHDSL technology provides a cost-effective solution using the existing cables.



The Westermo Wolverine Line Extenders (bottom right) remove the need to install new fiber optic cabling.

In total, nine Wolverine DDW-142-485 Line Extenders are being used to create networks supporting PLC to PLC communications for the three pumping stations. A single line extender is installed at the main pump stations and another at each underground metering and inlet vault.



Network architecture at the water pumping station.

The Wolverine line extenders enabled data to be transmitted over a distance of about 0.3 miles from a remote site to each pumping station using an existing two-wire telecom cable. Critically, the Wolverine line extenders are designed to provide extremely reliable and resilient data transmission despite the noisy environment and several surge protectors at the pumping stations. The ability to adjust the data rates helped to create a very stable connection. The built-in tools within the Westermo WeOS operating system showing the signal-to-noise ratio and other statistics of the SHDSL line assisted with troubleshooting and configuring the units.

“The Wolverines can form a network over any type of copper cables, which made it possible to create a very cost-effective solution using the pre-existing telecom cable,” explained Benjamin Campbell, technical engineer at Westermo. “The WeOS operating system, which has been developed to simplify configuration and management of the devices, made the upgrade easy and problem-free.”

“Not only were we able to carry out the project efficiently and successfully, but the Wolverine Ethernet extenders enabled both significant project cost savings and time savings as we did not need to install new cabling,” said Michael Klein, president of Concentric Integration. “We were also very happy with the support provided to us by Westermo during the project.”

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