City of Cumberland Water/Wastewater
Cumberland, MD

City of Cumberland, MD
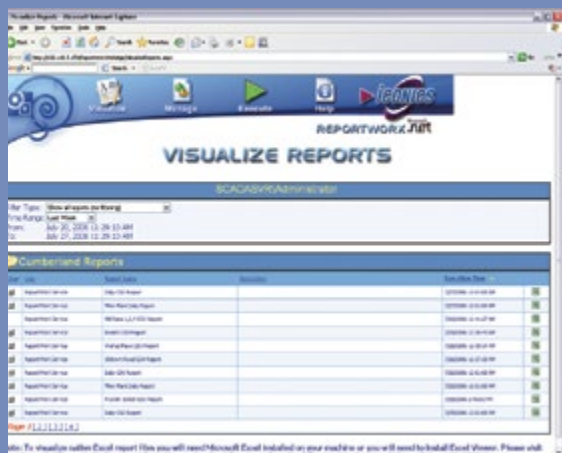
Daily CSO Report in ReportWorX

About City of Cumberland Water/Wastewater

The City of Cumberland, Maryland (population 25,000) is a beautiful little city nestled among the Appalachian Mountains. Established in 1787, it's the home of the first national road, now known as Route 40 or National Highway. Over the years, it has also been home to numerous railroads and was the western terminus of the famous C&O Canal. Cumberland sits approximately 950 feet above sea level and has an annual rainfall of 36.5 inches and an annual snowfall of 34.1 inches.

ICONICS Software Deployed

GENESIS32™ Enterprise Editions are deployed on dedicated workstations at the Water Filtration Plant and the Wastewater Treatment Plant. They utilize GraphWorX™32 for process visualization and opera-

tor runtime information. Both AlarmWorX™32 and TrendWorX™32 are deployed and remotely log data to a main server-class computer running Microsoft SQL Server located downtown.

The server uses ReportWorX™, part of the ICONICS BizViz™ suite, to automatically generate reports for both the Water Filtration Plant and the Wastewater Treatment Plant. AlarmWorX™32 Multimedia runs on the server to provide remote alarm annunciation to plant personnel. ICONICS WebHMI™ also runs on the server allowing plant supervisors remote access to the system, anywhere in the city.

Project Summary

With an existing installation at the Wastewater Treatment Plant, ICONICS was the logical choice for the new system. It was designed to visualize information of remote pumping stations, elevated tanks and reservoir levels for the Water Filtration Plant and for visualizing and reporting information about Combined Sewer Overflow (CSO) events, important to the Wastewater Treatment Plant and the surrounding watershed authorities. When it rains, or when snow melts, there exists potentials for CSO events. Once manual and highly labor intensive, these events are now tracked in real time and reported on as soon as the event has ended.

The system was installed and commissioned by Consolidated Electric, Inc. of Cumberland MD with the help of ARK Systems, Inc. of Columbia, MD and O&M Engineering of Ellicott City, MD, under the supervision of KLH Engineers, Inc. of Pittsburgh, PA.

KEPWare Modbus/TCP OPC Servers installed on both ICONICS GENESIS32 workstations facilitate communications to Schneider Electric M1E PLCs. This is done via wireless broadband Ethernet over the Allegany County ALLCONET. The ALLCONET infrastructure is an IP-based, high speed Intranet providing the security of a world class firewall and the stability and speed of a fully monitored microwave network.

For the CSO events, the PLCs are connected to sensors that determine sewer overflow and begin accumulating that data inside the PLCs that is then logged to the remote server and reported on by ReportWorX. For the Water Filtration Plant purposes, the PLCs are connected

Each site where the tank level is measured and logged has a separate chart plot, on its own sheet, in the report.

Key Features

By deploying ICONICS GENESIS32, the City of Cumberland has seen numerous productivity enhancements. At the Water Filtration Plant, with pump station intrusion alarms and pump failure alarms, plant operators can respond to critical problems as they arise, saving valuable time and money. Having real-time information allows the Wastewater Treatment Plant personnel to provide surrounding watershed authorities with the information they need to respond accord-
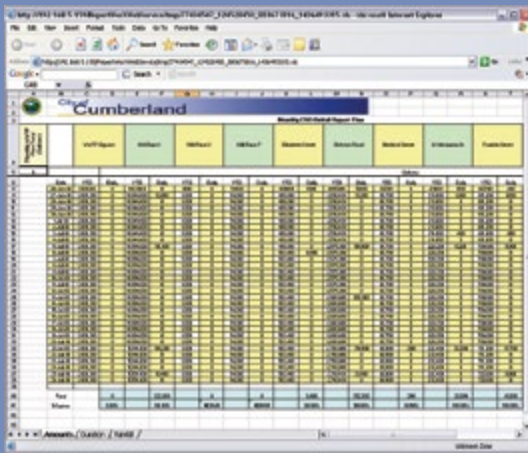
Monthly CSO Outfall Report Flow
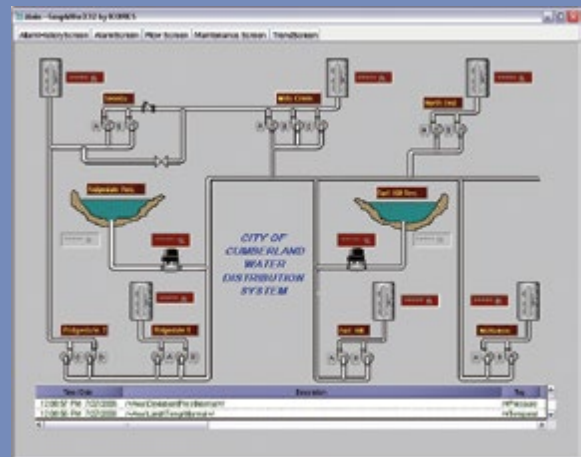
Water Distribution System Screen

to sensors that determine tank levels and pump station water flow usage and accumulate that data inside the PLCs that is then logged to the remote server and reported on by ReportWorX.

On a daily basis, ReportWorX generates a Filter Plant Daily Report. The Filter Plant Daily Report is a combination of sub reports and chart data plots done via separate Excel worksheet tabs. The sub reports are for daily, weekly and month to date totals of motor/pump runtime hours and station flows, in addition to daily tank and reservoir levels listed every one-half (1/2) hour. The chart data plots are for the daily tank levels.

ingly to overflow situations. Additionally, information that has been gathered could possible save the city on future capital expenditures by allowing them to build structures based on actual and not estimated capacities.

Conclusion

Utilizing a combination of ICONICS BizViz Suite and GENESIS32 Enterprise Suite, the City of Cumberland has a system that will pay for itself by enhancing productivity and reducing overall operating costs.