

How Ottawa Met its Environmental Regulation Requirements Using Real Time Control (RTC) and Reduced Their Combined Sewer Overflows (CSOs) by 60%

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FORMAT

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ABSTRACT

When the City of Ottawa needed to reduce their combined sewer overflow (CSO) volume in the Ottawa River to meet environmental requirements, they considered two alternatives: civil upgrades (e.g. tunnel and storage tank) or real time control (RTC) in order to maximize the capacity of the current infrastructure. They turned to Tetra Tech and its partner Stantec to evaluate both options and conduct a feasibility study to evaluate if RTC alone could meet the requirements.

Through site surveys and modelling, the study confirmed that RTC control would meet the City's environmental requirements to capture and treat 90% of the wet weather flow. The City moved forward with the project and upgraded six of their existing regulation sites. Four were equipped with automatic flow control gates, while the other two were set as static sites with a calibrated orifice. All of the sites were instrumented with new redundant level meters, flow meters, programmable logic controllers (PLCs), wireless communication toward a central SCADA, and managed from a new control room using HMI screens.

Since the completion of the project in 2010-2011, the City has helped to improve the water quality of the Ottawa River by respecting the environmental regulations and by reducing their CSO volumes by more than 60%. Real time control demonstrates that impressive gains can be obtained by optimizing the current infrastructure, while saving an estimated \$100 million for the City of Ottawa compared to traditional civil solutions.

This project was awarded the 2012 Environment Award by the Consulting Engineers of Ontario for the major pollution control project undertaken by the City and its partners and it also received the 2012 Public Works Project of the Year award from the Ontario Public Works Association.

ABOUT THE AUTHOR

Maxym Lachance, Eng. is a project engineer with Tetra Tech, holding a college degree in electronics and a bachelor's degree in automated production engineering (Montreal). He has more than 12 years of

experience as both an electronic technician and an engineer, and has developed an expertise in instrumentation and control. Mr. Lachance has successfully commissioned and calibrated more than eight different wastewater real time control (RTC) sites, while providing assistance and guidance for many more.