



Case Study

**CTSPEC SEWER • MANAGEMENT**

**A NEW VISION ON THE CONDITION OF CITY OF TORONTO'S SEWER NETWORKS**



**SITUATION AND OBJECTIVES**

After the amalgamation of Toronto in 1998, Toronto Water – the department in charge of managing the combined infrastructure systems – was mandated to consolidate all underground facilities data and centralize sewer inspection processes on behalf of the newly merged city. Ten years later, a great deal of work in this regard remained undone. It was a monumental task, especially in that most data was still on paper or in hard-to-use and hard-to-convert electronic format. In 2008, the City therefore retained the services of CTSpec to implement its CTSpec Sewer solution in order to manage the data for the entire sewer system. The objective was to create and facilitate access to a complete asset inventory that virtually eliminated all file-naming errors during the inspection data capture. The resulting data would be of sufficiently high quality to provide up-to-date information on the condition, location, inspection/maintenance history and expected life span of all assets. Functions designed to optimize the link between CTSpec and the ESRI ArcView GIS system would make it possible to create and generate multilayered thematic maps providing an instant visual of the City's systems.



**SOLUTION**

CTSspec Sewer was therefore implemented. The resulting system made it possible to quickly establish a complete inventory of sewer assets and record the condition of pipes and manholes. The solution was also adopted by the contractor responsible for the sewer asset inspections, thereby ensuring continuity and accuracy throughout the chain of information – from the collection of field data to its processing by city analysts and engineers. Being that the software worked in sync with the inspection contractor's computers, inspectors were able to enter pipe and manhole inspection data directly into the system on a weekly basis.

The information gathered in the field was pre-validated and controlled by the application, then automatically entered into the GIS without any changes to the original plans, and made available to all teams. This made it possible for them to have access to information on inspected pipes and manholes and the corresponding videos by way of hyperlinks – all straight from a digital map specific to the City. The ease with which layers

could be created on the thematic maps was particularly useful in planning sewer maintenance operations and justifying budget requirements at the administrative level



**RESULTS**

**INFORMATION-SHARING AND COLLABORATION**

A single system – covering asset inspection all the way through to report preparation – made it possible to provide a consistent, comprehensive approach to information management. As a result, regardless of the department involved, the information in the system always met the specified standards and greatly facilitated communication and collaboration among the various stakeholders.

**INCREASED PRODUCTIVITY**

All of the City's teams were able to considerably increase their productivity because of the automated update of infrastructure conditions (practically real-time), the production of thematic maps and the improvement of information-sharing from team to team. In the final analysis, the City boosted its productivity in this regard by over 40%.

**BETTER-QUALITY DATA**

Given that the solution improved data quality and integrity across the board – from data collection to report generation – the information in the system was highly reliable, allowing analysts to focus their efforts on asset management and operational priorities rather than manual reprocessing.

**ACCESS TO BUSINESS INTELLIGENCE**

Since the resulting data was highly structured and standardized, it was easy to utilize it to produce specific reports on the condition of sewer systems and the need for inspection, maintenance and repair operations. Although it is often difficult to obtain funding for “invisible” infrastructure work (until it becomes “visible”), CTSpec Sewer reports in conjunction with the mapping system, made it possible to bring problems to the surface and made officials more aware of the problems lying right beneath their feet, thereby accelerating the pace of renovations and ensuring the City of Toronto adhered to CCSP requirements.