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# City of Toronto – Water and Waste Water Services

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*Client:* As a publicly owned and operated utility, City of Toronto Water and Waste Water Services supplies water and sewage treatment services through 4 water filtration plants and 4 sewage treatment plants to the City of Toronto.

*Application:* Performance Management configured using **Alacrity Results Management (ARM)**

*Requirement:* The City of Toronto Works and Emergency Services Department embarked on the Works Best Practices Program (WBPP) to transform their Water and Wastewater Services Division into a competitive public business. The goal of the WBPP is to re-examine existing functions and operations and to identify and implement “best practices” that improve the delivery of services as a business-driven, public utility. A focus on performance assures that these practices are measured and continuously improved.

Any performance management system provided would need to provide at least these high level objectives:

- Provide information relevant to operators, middle management and executives in both tabular and graphical form
- Provide easy navigation tools to find the various pieces of information needed by its wide variety of users
- Accept information in real time from process control machinery
- Support security control to protect sensitive information
- Be scalable to support large numbers of datapoints (currently 3000) each entered on an hourly or a daily basis
- Be configurable and modifiable by non-programmers

*Solution:* A configured performance management system based on Alacrity Results Management (ARM) was implemented as part of the WBPP implementation.

The system can be viewed at the operations level to analyze plant process performance and at a management level to track overall performance trends. These performance center “dashboards” give utility managers and operators the tools for ongoing continued performance improvement and are based on **measures of efficiency, quality, and effectiveness** at each level of the performance framework.

*Result:* The system has met or exceeded all the requirements. The WBPP implementation (consisting of 8 majors system, including ARM), provided the ability to increase efficiency:

To date, **cumulative cost reductions of more than \$65 million** (\$Canadian) have been realized and reflected in the 2002 budget, and annual savings are expected to reach \$36 million per year upon full implementation of WBPP. Cost reductions come mainly through reductions in payroll, energy, chemicals, and parts.

The Highland Creek plant began the works best practices project with 120 staff. It now operates with 79 staff. When plant automation is completed, it will require only 55 staff. Additionally, **significant energy savings were achievable** by shutting down the heat treatment process in the solids work area without jeopardizing regulatory targets.

With respect to application performance, it also achieved exceptional results.

In order to see if ARM (and its object database) was an excellent choice for this project, a prototype of what ARM did was developed in PowerBuilder 5 with a SQL\*Server database. The team discovered that the prototype took approximately two hours to calculate a week's worth of derived measurements at shift, daily and weekly frequencies on a Windows NT server. On a comparable server, **ARM calculations were approximately 50 times faster.**