ARB® UTILITY MANAGEMENT SYSTEMS™

NEPTUNE
TECHNOLOGY GROUP

TOWN OF PELHAM
CLIENT

ONTARIO, CANADA
LOCATION

Ryan Cook, Water Supervisor; Cari Pupo, Treasurer/Director of Corporate Services;
David Iacocca, Neptune Territory Manager

Decision Makers are Changing

The Town of Pelham is located between Lake Erie and Lake Ontario and is situated in the heart of Ontario's Niagara Region. Leading up to the summer of 2010, the Town of Pelham faced issues that are familiar to many water utilities across Canada. Specifically, issues related to water billing and customer service were mounting; and at the heart of the problem was an antiquated water meter system.

Billing and customer service functions are reliant on the accuracy of meter reading data. The Town's issues stemmed from an aging meter population which consisted of a mix of outdated technologies and failing meters. Meter reading errors and process inefficiencies related to old direct read and pulser-based technologies resulted in inaccurate data, an abundance of estimated bills, customer billing disputes, billing adjustments, and large sums of money being written-off.

Town staff had a plan in place for the replacement of the old meters over a two-year period but despite efforts the target was impossible to meet. The Town knew the system needed a complete overhaul. Concerned that the existing program could take up to eight years to complete using only in-house staff, the Town opted for an alternate approach.

A Time for Change
The Town's treasurer and director of corporate services, Cari Pupo, successfully proposed an upgrade of the existing system to radio frequency automatic meter reading (AMR) technology to the council. As a result, a request for proposal was issued in November 2009 for supply and installation services to replace 3,100 meters and to implement a new AMR system that would meet the Town's current and future needs:

- Timely and accurate billing;
- Address the revenue loss factors in the billing system;
- Address incorrect meter installations, illegal by-passes, and inadequate plumbing;
- Resolve customers not accounted for in the billing system;
- Move from a reactive data entry role to proactive customer service approach.

Neptune Technology Group (Canada) was selected as the preferred vendor to provide complete turnkey project management services for the supply and installation of Neptune's E-Coder)R900*i*™ meters. Neptune's local project team was led by Project Manager Brian

Carman, who began the project in April 2010. The Town valued Neptune's single-source integrated service approach which included project management, installation services, appointment setting and call centre services, public communication, data management, and meter reading system integration. While Neptune's team was assigned the meter replacements, the Town staff was tasked with 1,200 meter register upgrades. The Town later requested assistance from Neptune to complete the remaining meter register upgrades so that Town staff could focus on other priorities. The project was completed on time and the Town was pleased that the project progressed at a rate that exceeded all expectations. The Town's treasurer credits the project's success to the unprecedented support from Town residents, Town Staff, Town Council, and the project team from Neptune Technology Group. Neptune's project team was also asked to return in the spring of 2011 to upgrade 70 of the Town's commercial and industrial (C&I) meter sites. This final initiative is part of the Town's overall plan to maximize revenue and ensure a homogenous system.

With the new Neptune's E-Coder)R900*i* meters fully operational, the benefits were immediate.

Addressing Water Loss: The meter replacement program has resulted in significant findings of water loss. By replacing old, inaccurate meters, the Town is now collecting all of the revenue to which it is entitled. The AMR system improved accountability as reading accuracy issues caused by discrepancies between the outside visual remote versus the inside meter register have now been eliminated. The water loss factor was around 20 percent prior to the program; post-replacement, these levels have already reduced to 10 percent.

Reading and Billing Efficiencies: All meters are now read by radio frequency, specifically Neptune's E-Coder)R900*i*. Using only one meter reader, Town staff can obtain all residential readings in less than a day by simply driving through subdivisions with the meter reading equipment. In comparison, the previous process to read meters took over fifteen days from start to finish and contract service fees were paid to an outside consultant for the service; thus, the new meter program provided an immediate return on

investment. The Town now has the ability to read as often as it wants, and it has chosen to bill every two months in comparison to quarterly. The data entry process prior to the upgrade took a full week. Currently, the water meter readings are stored in Neptune's host software system (ARB® N_SIGHT™ AMR) and are automatically uploaded to the Town's accounting system, reducing the amount of time needed to enter water meter readings. This facilitates faster delivery of reading and billing services and reduces costs.

Proactive Customer Service: Using Neptune's E-Coder)R900*i* as the foundation, the Town can now use mobile radio frequency based technology to access the features and benefits that could otherwise only be offered from an advanced metering infrastructure (AMI) system. One of the objectives set out by the Town's treasurer was to increase the value of the service provided to the Town's residents by transitioning from a position of reactive data entry to one of proactive customer service. When selecting an AMR system, the Town valued the advanced meter information provided by Neptune's E-Coder)R900*i* meter, including the E-Coder)R900*i*'s ability to provide leak, tamper, and reverse flow detection. The Town now has the ability to easily generate an E-Coder)R900*i* report that flags on a per account basis: leaks, backflow, and no flow. For example, E-Coder)R900*i* status flags related to leak detection can be seen in the following graphs based on the Town's most recent reading cycle.
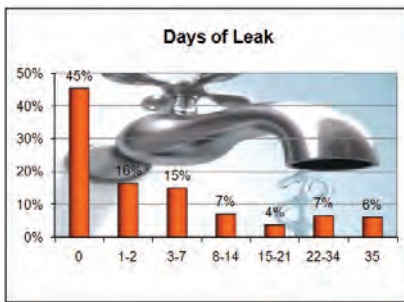

Figure 1.

Days of Leak: Based on 4,230 accounts, the Days of Leak status flag indicated that 6.0 percent of the accounts are showing a continuous or intermittent leak for the last 35 days (equivalent to 258 accounts). Figure 1 shows the percentage of accounts versus the days of leak.

Leak Status in the Last 24-Hour Period: The status of the current leak state is determined by the number of 15-minute intervals during a 24-hour period where the eighth digit of the E-Coder)R900*i* is incremented by one. No leak status flag is set for an installation if less than 50 15-minute intervals indicate a change in the eighth digit. An intermittent leak flag is set when 50 to 95 15-minute intervals indicate a change in the eighth digit. A continuous leak flag is set when all 96 15-minute intervals indicate a change in the eighth digit. In the case of the Town of Pelham, the
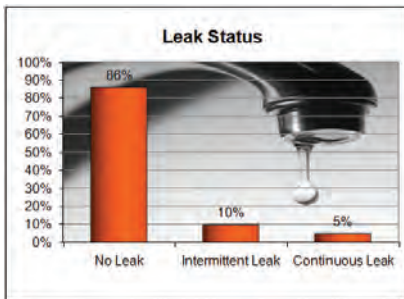

Figure 2.

"leak status in the last 24 hour period" for all 4,230 accounts indicated that 15 percent (603 accounts) developed either an intermittent leak or a continuous leak. Figure 2 shows the percentage of accounts that had an intermittent or continuous leak within the past 24 hours.

It is the Town's goal to use the value-added information provided by the E-Coder)R900*i* flags to proactively communicate with residents. The Town is considering options such as mass voicemail to alert impacted customers with potential leaks.

Additionally, the E-Coder)R900*i* has the capability to flag potential meter tamper or a backflow occurrence. With this information, the Town now has the ability to initiate an investigation and corrective action, if necessary. The E-Coder)R900*i*'s 96 days of hourly data logging capability provides an excellent customer service enhancement tool – specifically to help resolve customer billing inquiries, disputes, and high bill complaints.

The Value Proposition of the System is Growing
As meter technology evolves and the expectations of utility customers increase, the value and impact of the meter reading system continues to grow. Many utility departments are now recognizing the value of the information generated by the system. In some cases, like Pelham's, finance and customer service are driving these types of programs forward and directly impacting the type of information required from the metered system to better service the end-customer. For the Town of Pelham, Neptune's integrated solution, combining complete project management services with the proven advanced functionality of the E-Coder)R900*i*, has helped put the Town on the leading edge of customer service.

Neptune's distributor Evans Supply Limited (ESL) played a significant role in the overall success of the Pelham program by providing the Town with an understanding of radio frequency automatic meter reading (AMR) technology and showcasing the benefits of the advanced functionality provided by the E-Coder)R900*i*. ESL continues to service the ongoing needs of the Town and provide exceptional customer service and support.