

# WIRELESS SOLUTIONS:

## Helping municipalities increase efficiency and cut costs

Corie McDougall

Today's public sector is experiencing higher demands on resources than ever before. Accountability, traceability, real-time reporting and access to information, along with networked government are the new buzz words. The ability to achieve these goals, without exceeding budget or negatively disrupting existing business processes, is not as far-reaching as it may initially seem.

How is this possible? Recent developments in wireless telecommunications and information technology have resulted in numerous innovative solutions that resolve the wide range of challenges that Canadian municipalities face. Many have already implemented solutions that are tried, proven and reliable in order to better manage assets and enable employees to complete their work more efficiently.

### Wireless Data Solutions In the Field

Imagine a department's paper forms and clipboards being replaced with a wireless device (cell phone with a large display, PDA, tablet PC or laptop) that has been pre-loaded with electronic versions of the forms. The simple act of converting paper forms and work orders to their digital equivalent,

and enabling a mobile worker to wirelessly access the information in a central database in real-time, results in a number of benefits to the organization including:

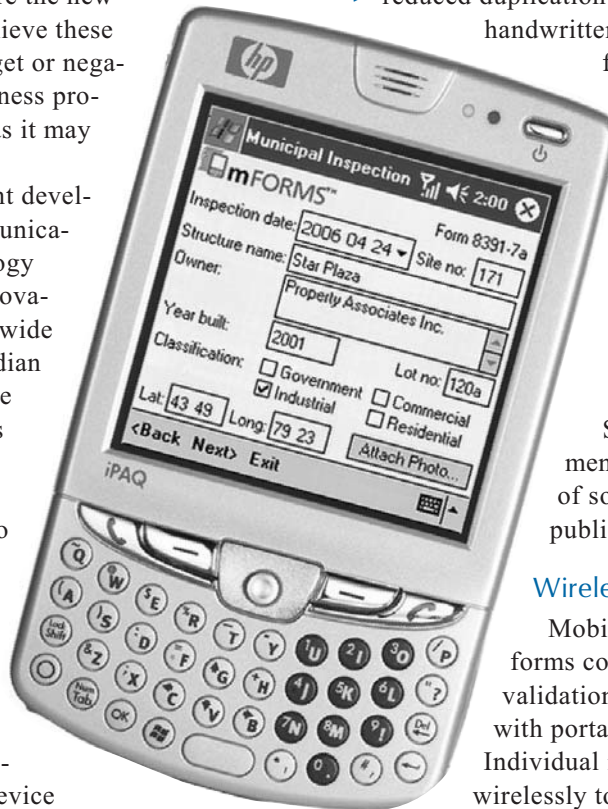
- ▶ reduced duplication of work – no need to key in the handwritten information from the paper forms once back in the office;
- ▶ reduced errors – no more illegible handwriting issues; data is automatically validated through the use of forms with drop down lists and other simplified tasks; and
- ▶ improved service by enabling field staff to access service history, reference information, manuals and diagrams.

Some of the first municipal departments to have implemented this sort of solution include those managing public health and safety inspections.

### Wireless Inspections

Mobile versions of standard inspection forms containing embedded checklists and validation criteria are developed for use with portable devices, laptops or tablet PCs. Individual inspection alerts can be sent wirelessly to the appropriate field inspector with essential location and other default information fields already populated. Data can be gathered quickly and easily, including image or signature capture, and audio notes where necessary. The completed forms are then submitted in real-time back to the office for automatic processing to back-end systems.

If equipped with mobile printing devices, inspectors can even print reports to leave behind at the inspection site. Inspectors can also access data stored in back-end



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systems, such as inspection history, regulatory guidelines and other important information that is often invaluable while still onsite.

Benefits of a wireless data solution for inspections include:

- ▶ reduced travel to and from office to return forms or access information;
- ▶ improved timelines and accuracy of data collected;
- ▶ improved constituent satisfaction; and
- ▶ increased number of inspections per agent per day.

City departments that have benefited from mobile inspection solutions include by-law enforcement, inspection services, business licensing departments, planning, and any department with a service and/or maintenance component to their mandate.

### Wireless Dispatch Solutions

An integral part of the solution outlined above is the ability to manage the dispatch component of a job. Wireless data dispatch solutions eliminate the need for voice and paper-based work-order processes, and result in valuable benefits such as:

- ▶ faster and accurate communication between the operations centre and field personnel – the right information gets to the right person at the right time; and
- ▶ a verifiable electronic record of the call history showing when the call went out, who received it, time of response, record of response, etc.

Wireless dispatch solutions can be of great benefit to the municipality's service and maintenance personnel. Solutions can be either simple, web-based applications, or more complex and tightly integrated systems that are tied into existing back-end systems.

### Fleet Management

Another area of significant opportunity for municipalities lies in fleet management or automated vehicle location (AVL) solutions. Fleet management solutions also make use of the dispatch solution component outlined above. Many Canadian municipalities have implemented AVL solutions that use the wireless data network to enable them to better manage their public works, emergency medical services and transit vehicles.

AVL offers real-time automated positioning of transit and maintenance vehicles using integrated Global Positioning System (GPS) technology. Vehicles can also be monitored for fuel consumption, mileage, speed and var-

ious alarm conditions such as vehicle breakdown or driver panic button. Real-time tracking information is transmitted back to the control centre over a wireless data network.

Features of a general AVL solution include the ability to monitor and track:

- ▶ vehicle location at any time during a given day or route;
- ▶ vehicle speeds, stops, drive times, excessive braking and fuel consumption; and
- ▶ specific vehicle components such as door open/close and rear gate open/close.

This results in financial benefits, such as:

- ▶ reduced operating costs with improved asset utilization, fewer vehicle breakdowns and repairs, and lower fuel consumption; and
- ▶ minimized equipment failure and downtime through preventive maintenance.

Other benefits include the ability to customize the solution to adhere to municipal regulations and legislative requirements. For example, salt trucks can record the amount of salt distributed as per environmental regulations. In addition, the municipality can maintain knowledge of the whereabouts and condition of "lone workers" as per pending "lone worker" or "man down" legislation.

### Transit Signage

The most effective method for communicating passenger information is through display panels at bus stops. These displays show up-to-date information – next expected arrival/departure, for example – in an easy-to-understand format. This solution incorporates GPS technology, and transmits updated scheduling information to the display signs over a wireless data network.

Benefits include:

- ▶ increased passenger satisfaction through clear and reliable information from display panels; and
- ▶ improved scheduling and resource management resulting from the capture of this information.

Passengers can also access the transit authority website from their home, office or on the move, and conveniently gain information about arrival/departure times.

### Parking

Parking is another area where wireless data solutions offer municipalities the ability to improve service, reduce costs and increase revenue. Traditional coin parking meters

can be costly to service and maintain. Wireless parking solutions can facilitate operational improvements in several ways.

Wireless parking meters offer increased options for payment, including debit, credit and smart card transactions. The machines can be monitored remotely for damage, coin capacity and paper and ink supplies for receipts. Parking patrol personnel can be quickly alerted to the location of expired meters.

Beyond meters, enforcement officers can wirelessly access a central database of repeat offenders and other pertinent information in real-time, allowing them to make more effective decisions on the street. They can quickly and efficiently print tickets reducing the amount of errors associated with batch-processing handwritten tickets at the end of the day. Handheld devices transmit ticketing information in real-time throughout the day, allowing for review at the central office in the event vehicle owners call in with ques-

tions regarding citations received.

Benefits of a mobile parking solution include:

- ▶ reduced cost of parking meter maintenance, collection and administration;
- ▶ increased revenues through improved customer payment options; and
- ▶ improved cash flow by reducing invoicing cycles for fines and associated customer billing disputes.

### Conclusion

There is a wide range of wireless data solutions available to Canadian municipalities today. Many of the process changes that improve data management offer the additional advantages of reducing costs and increasing operational efficiencies as the investment made to ensure that more stringent accountability requirements are met also works to increase organizational effectiveness and have the real potential to cut costs for municipalities as well. *MW*

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