

# The Wi-Fi Revolution and Automated Meter Reading: Be Prepared to Take Advantage

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There is a technology revolution underway that will have a profound impact on the day-to-day operations of city agencies, including city-owned utilities. Failure to plan for this revolution may leave utilities stranded with obsolete investments.

Across America, hundreds of cities are being made offers which they cannot, and do not, refuse. They are accepting proposals from Wi-Fi service providers to install city-wide wireless networks. These networks offer a variety of services to the city, its residents, and businesses. Wi-Fi service offers are compelling because in many instances they come free of charge to the city, paid for instead by the service providers, who collect subscription fees from individuals and businesses.

According to Muniwireless.com's report dated September 10, 2006, there are 68 U.S. cities with citywide Wi-Fi networks, and another 135 that have issued Requests For Proposals (RFPs) and plan to go ahead with Wi-Fi implementation. The research firm IDC says the municipal Wi-Fi network market in the United States will grow from \$88 million this year (2006) to \$512 million by 2010, a compound annual growth rate of 55 percent.

## The cities benefit by using the wireless networks for such functions as:

- Police communications including offense reports, accident reporting, transfer of video from in-vehicle cameras, and access to records
- Work order management for building inspectors and public utilities
- Traffic monitoring
- Parking meter reading
- Voice dispatch (replacement of cell phones)
- Transmission of building plans for fire and emergency workers
- Hazmat database access
- SCADA applications

In addition, cities want to use their Wi-Fi networks for utility meter reading. Following are excerpts from RFPs issued for Wi-Fi networks:

**PHILADELPHIA:** "All Proposals must support the following categories of service and should be flexible to accommodate new services over time... Mobile access by City agency users using mobile computing devices... Inspectors, public safety officers, **meter readers**, surveyors, etc."

**CHICAGO:** "The City is likewise interested in emerging municipal technologies, for example, **automatic water meter reading**. Respondents are encouraged to be creative in defining how the Network could address these needs."

**HOUSTON:** "The City's Public Service agencies may use the Network for uses such as those indicated in the following table... **Meter Reading/Telemetry UCS... AMR System.**"

**SAN FRANCISCO:** "Government agencies may use the Network for such uses as automatic vehicle location, access by field staff, **remote meter reading**, public safety, and remote camera/video surveillance."

**SILICON VALLEY:** (Covering 42 cities) "Additional consideration will be afforded solutions which support Supervisory Control And Data Acquisition (SCADA) interfaces and/or industrial human machine interfaces (HMI). These include, but are not limited to, the following devices:.. **Utility meters.**"

These cities recognize that, a well designed Wi-Fi network can very effectively accept meter reading data from RF AMR devices.

Fixed network AMR systems offer significant advantages over walk-by or drive-by meter reading, but the cost of the network infrastructure has inhibited wider adoption. A Wi-Fi system that can also read existing AMR meter transmitters can provide much of the functionality of a fixed network without the added cost if a Wi-Fi provider installs the network free of charge to the City.

Today there is one water/gas AMR system that provides Wi-Fi compatibility - ORION® by Badger Meter. ORION transmitters send meter data at fixed intervals without needing to be prompted by an external signal. The ORION system offers the greatest flexibility of reading technologies in the AMR market. In addition to handheld (walk-by) and mobile (drive-by) data collectors, ORION receivers have already been incorporated into endpoints for fixed networks such as Powerline Carrier (PLC), Broadband over Powerline (BPL), and RF mesh networks.

Badger Meter is now partnering with the major Wi-Fi equipment manufacturers to allow ORION receivers the ability to communicate with their Wi-Fi routers. Installed as part of a citywide Wi-Fi network, these enhanced routers will be able to collect meter data from existing ORION transmitters. The readings will then be available at the utility office over an internet-connected PC.

The bottom line? A water or gas utility using ORION AMR will be able to readily convert to network-reading operation when a citywide Wi-Fi system is installed. Other AMR systems that don't offer this flexibility may leave the utility stranded, outside the network. ■

