City of Houston, TX

A Quest to be the Best: Itron Technology Helps Houston Utility Achieve Ambitious Operational and Customer Service Goals

BACKGROUND

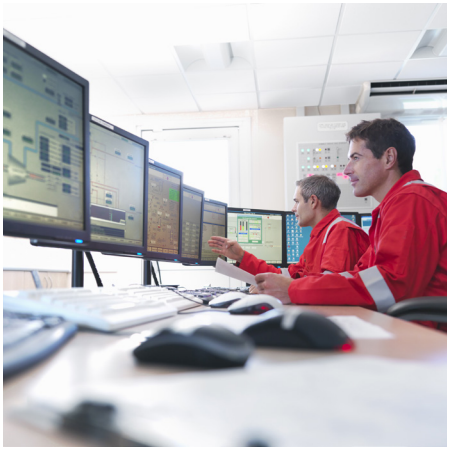
The City of Houston Public Works and Engineering Department delivers drinking water to nearly 3 million residents over a four-county, 600-square-mile service area. On its website, the Department defines its mission as "protecting public health, protecting the environment and providing superior customer service."

The Department has earned the reputation of being among the most innovative water utilities in the country. As such, the City of Houston was one of the first to adopt Itron's on-site billing solution in 1986, which streamlined the billing process by allowing meter readers to input consumption data and water service inspectors to print receipts, payment agreements, inspection notices and turn-off notices while still on site. Then, to stem the significant expense of over 200 meter readers, the department deployed Itron's automated meter reading (AMR) system in 1998. Most recently, starting in 2010, the utility migrated its AMR system to Itron fixed network advanced metering infrastructure (AMI). The benefits of Itron's AMI system and the new data it produced are extensive and multi-faceted. Most striking, applications for the new data are still being imagined and realized as the City of Houston's needs evolve.

OPPORTUNITY

As part of its ongoing search for improvements, the Houston Public Works and Engineering Department pursues ambitious customer service and operational efficiency goals. Confronted with rising meter reading costs and expanding service territory, the utility has partnered with Itron since 1986 to improve systems and adapt to changing business objectives—first with handhelds, then with drive-by AMR, and most recently with fixed network AMI.

Handheld and drive-by AMR technology have resulted in enormous operational savings. Yet prior to Itron's AMI solution, the City of Houston read and billed usage on a monthly basis, a process that left significant gaps when analyzing usage data. Customer service representatives had inadequate information to answer customer questions about when and how much water was used; bill dispute resolutions lingered unnecessarily and often resulted in labor intensive back office procedures that negatively affected revenue and expenses. Itron's AMI fixed network solution offered an attractive alternative: not only would the system result in operational efficiencies and savings; it would also provide access to granular consumption data which could be used to bridge the gap between customer expectations and the delivery of top-notch service. The utility again partnered with Itron for AMI.



CUSTOMER

City of Houston Public Works and Engineering Department
Houston, TX

CHALLENGE

Achieve ambitious customer service goals Show environmental leadership Improve operational efficiency

SOLUTION

Houston deployed Itron's fixed network solution using a new approach that leveraged its existing mobile system investment to improve operational efficiency, analyze granular consumption data, find leaks and help resolve billing disputes

"virtual connect and disconnect features eliminate the need for expensive truck rolls—in effect 1,000 work orders each day that don't have to go out to field"

SOLUTION

In partnership with Itron, the City of Houston Public Works and Engineering Department started to deploy Itron's Fixed Network system in September 2010, which included Network Administration Application (NAA) software, Cell Control Units (CCUs), repeaters and 60W ERTs, all dispersed around the greater Houston area. With fixed network technology, the utility acquired the ability to collect hourly consumption data from the 60W ERTs and send the data over the network to the utility for bill creation and analytic applications.

The September 2010 deployment allowed 54,000 accounts to be read over the fixed network. More than 310,000 of the total population of 465,000 metered accounts transmit over the fixed network. Reliably read every hour, the data generated over the network spectrum is staggering: 6 million hourly reads each and every day.

The City of Houston aims to expand the fixed network footprint and achieve close to 100 percent network coverage of its service territory by mid-2014. To accomplish this objective, the utility utilizes a special software application to plot service gaps and add equipment as necessary. In cases where the department does not have rights to public infrastructure optimally positioned for mounting additional equipment, partnerships with other city offices or utilities are negotiated through mutually beneficial "joint-use" installation agreements. Examples include electric or telephone poles, public buildings and radio towers. This process will ensure that all water meters in Houston will be read over the Itron fixed network.

BENEFITS

The benefits of AMI and datalogging have proven extensive, impacting a number of departments and programs. The access to an array of data points for account consumption has proven extraordinarily valuable to the City of Houston. A number of examples exemplify this value.

AMI deployment has resulted in immediate operational cost savings. Weather and traffic, continual impediments to timely meter reading and service calls with conventional systems, are no longer a factor with fixed network technology: meter reads take place on schedule, indifferent to the whims of Mother Nature and the uncertainty of Houston travel times. With fewer operations personnel and trucks needed for meter reads, costs fall. More staggering, virtual connect and disconnect features eliminate the need for expensive truck rolls—in effect 1,000 work orders each day that don't have to go out to the field. With these features, the utility uses the "on-demand" read attribute of Itron network software by sending a two-way command to the CCU, which extracts the most recent consumption data from the meter and sends it back to the utility over the fixed network. Using this last read, Itron's Billing Gateway software calculates the final bill. Through this process, Itron AMI solutions translate into real savings for the Houston utility, effectively reducing or eliminating the operational expenses associated with fleet maintenance (fuel, insurance, repairs), employees' risk and exposure and insurance costs. Operational costs rarely go down, so these savings will likely increase over time.

The customer service department was one of the first to reap benefits from the new AMI technology. Customer services representatives (CSRs) could share water usage with customers in greater detail—hourly, daily, weekly, monthly—in order to show trends and comparisons. Armed with this data, representatives could more quickly and effectively resolve billing questions and concerns. Now, billing issues are often resolved over the phone when the customer correlates his or her water usage with significant events like filling the pool or turning on the outdoor sprinkler system.

Itron's Network Administration Application (NAA) is used to manage network infrastructure. This powerful software provides the utility with easy access to CCU reports and repeater and ERT module performance on a daily basis. Using the application, the utility can track network performance trends and manage exceptions and fault conditions as they are encountered. Operations and maintenance protocols thus rely on proactive strategies to mitigate costs and risk.

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CONCLUSION

With the benefits of Itron AMI just being realized, the City of Houston Public Works and Engineering Department is looking at a number of new applications for the system. Among the first was to develop a utility web portal that would allow consumers to see their consumption data over specified periods. The initiative coined The Consumption Awareness Program (CAP) sends out more than 70,000 weekly consumption summaries and more than 18,000 weekly consumption alerts. These numbers are with a small initial adoption rate but it is projected that an active marketing campaign could increase adoption of this program to more than 50% of the customer base.

Looking ahead, another project being considered would bridge the gap between office and field by equipping field personnel with mobile data terminals (MDT's) like tablet computers so they could see consumption data for endpoints in real time. They would have mobile access to customer accounts and payment information and be able to interact face-to-face with customers on premise. Lastly, the utility has or plans to look into using the fixed network to integrate acoustic leak detection and/or pressure monitoring of water mains.

Itron's AMI solution has proven integral to the City of Houston Public Works and Engineering Department's commitment to customer service, environmental stewardship, system integrity and operational efficiencies. In facilitating the meter reading, billing and collection processes, Itron AMI technology frees the utility to dedicate time and resources to its most fundamental function: providing accurate on-time billing while assuring, reliable distribution of water to residents of the City of Houston. The power of datalogging and regular communications over the fixed network empowers Houston to turn data into actionable knowledge—now, and as the utility's needs changes over time.

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