



City of Lawrence  
AMI Assessment & Pilot Planning  
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## Section D - AMI Benefits

AMI technology fundamentally changes the meter-to-cash process. What is not easily recognized is that, depending on the supporting technology and business process changes employed, a Utility can realize even greater benefits through the proactive use of the data and information now available. Leveraging AMI technologies will significantly improve the measurement and management of utility resources and will bring direct benefit and value to customers.

The following section will outline the potential benefits that can be realized with the data yielded from an AMI system along with add-on technologies, such as remote disconnect and leak detection equipment. UtiliWorks worked with staff at Lawrence to derive the necessary data and assumptions in order to calculate the potential benefits and factored those conclusions into the business case analysis in Section E. The potential qualitative benefits that are more difficult to quantify are also discussed.

### 1. Quantitative Benefits

#### a. AMI Benefits

- **Meter Reading Reduction** - Elimination of on-cycle manual meter reading expenses, including staff time, fuel, and vehicle maintenance costs.
- **Customer Call Reduction** - Reduction of cost related to decreased number of customer calls. This reduction occurs from a combination of online usage information that would be available to a CSR to better respond to inquiries, in addition to customers having access to their information via Customer Portal. Customers would also now have the ability to configure usage notifications via text or email.
- **Re-Read Reduction** - Elimination of most check-read/skip/no-read field activities and expenses in reviewing skips report, creating the work orders and rolling a truck to collect the re-read. New billing routines will have a range of dates a read may be pulled to use on bill (e.g. read date or 2 days prior) and/or a read may be collected via On-Demand read functionality.
- **Move-In / Move-Out Reads and Turn Offs Reduction** - Elimination of most off-cycle read field activities when customers move in and out of a premise. Some of these move outs also require a turn off within current policy, and these will not be affected by AMI. The savings will result from new presentation of daily AMI reads and the ability to collect on-demand reads for those occurrences of move in/out that will move to a “soft off” policy.
- **Non-Pay Disconnect Reduction** - Reduction in collections labor and field activities for non-paying customers. The majority of trips to a premise can be avoided due to remote disconnect/connect capability of some AMI meters. The utility may also benefit from the reduction in bad debt when transitioning regular non-pay disconnect customers to a meter with remote disconnect capability especially with the introduction of Prepay service.
- **Billing Expense Reduction** - Reduction in billing service expenses associated with increased efficiencies. The new MDMS will contain advanced Validation, Editing, and Estimation (VEE) routines and accurate real-time and historical meter information. This can translate to fewer bill estimations, billing errors, and adjustments. Furthermore, a customer portal is expected to result in some customers choosing to opt out of paper billing. Thus, there are also anticipated benefits in postage and bill printing cost savings.
- **Lower Pumping Costs** - Reduction in the cost to pump raw water into treatment facilities and throughout distribution system. The cost reduction is anticipated as an outcome of more optimal distribution of water supply with the real-time AMI data that is available.
- **Water/Wastewater Meter Accuracy Improvement** - mechanical water meters experience a degradation of accuracy over time. This degradation is a function of several factors, such as wear, water quality, and throughput volume. This project represents an opportunity to

replace older meters and realize lost revenue, on both the water and wastewater revenue streams.

- **Water Loss Identification Revenue** - Alarms triggered in the AMI software can identify meter tampering and product diversion. This is a valuable tool for any utility to identify theft in near real time as compared to monthly when the meter reader puts eyes on a meter. There is further revenue recovery for other non-billed water losses, such as meter malfunctions.
- **Meter Scrap Revenue** - Added revenue from scrap of old meters during replacement. Local market pricing is utilized for all scrap values and weight is determined by the number and size of meters to be replaced as part of the project.
- **Annual Meter Replacement Savings** - Eliminate current annual meter replacement spending for faulty meters by installing new AMI ready meters with long-term warranties. Any capital cost for new meters will be accounted for in the capital costs of the financial model, so this is added as a benefit to avoid any double counting of the meter replacement budget.

#### b. Water Distribution Pressure Monitoring

- **Distribution System Cost Reduction** - A significant savings can result from efficiency gains from proactive distribution system monitoring via pressure monitoring. Further savings are applied to a decreased annual cost of fixing leaks.

## 2. Qualitative Benefits

In addition to those benefits that can be quantified and included in the business case analysis, the Utility has the opportunity to realize numerous intangible/soft benefits. While many of these benefits are not easily measurable, they are certainly real and achievable with the successful deployment of an AMI system.

- **Improved Customer Service** –Due to the unique nature of the KU rush, staff and customers engage with each other over a particularly stressful time in the summer months. With remote read capabilities, the Utility will now be able to achieve a quicker turnaround of a change of service, which will reduce stress for staff and help improve customer relations over the long term.
- **Improved System Planning Capabilities** - Information that can be analyzed from an AMI system and other technology supported on the AMI network can facilitate the improved management and monitoring of water and wastewater system performance leading to better informed capital investment decisions. System engineering and maintenance programs can be supported with better, more frequent access to the more granular data that will be provided by the AMI system.
- **Improved Water Demand Management** - Through the use of interval consumption data, customers can more proactively and effectively manage their water consumption. The AMI system will enable Lawrence to model the overall system demand, identify customer leaks and facilitate proactive management of the industrial and residential customer base.
- **Meter Right-Sizing** – Data and alarms produced by an AMI system will provide the Utility with the ability to detect if a water meter is over or undersized based on the size of the meter and the water consumption history.
- **Unauthorized Use Detection** - Current generation AMI Systems provide flag or high priority alerts or reports for reverse water flow and tamper detection. This information will be of

significant benefit to the Utility and should also facilitate reduction of unauthorized usage or theft.

- **Improved Safety** - Ensuring safety for both utility employees and customers is essential. With the introduction of automated meter reading, the Utility will have the ability to remotely read meters, initiate on-demand meter reads, and remotely disconnect/reconnect selective customers. This will dramatically reduce exposure to risky conditions on the road and at a customer premise, such as weather conditions, unfriendly pets, physically hard to access meters, and theft.
- **Reduced Carbon Footprint** - Reductions in truck rolls and drive time for Meter Reading and field activities related to non-pay disconnect/reconnect, re-reads, and move in/out reads will all contribute to a reduction in carbon output by the City.
- **Compliance with Future Legislative Requirements** - With the introduction of AMI, the Utility will better prepare itself to address legislative and/or state requirements regarding conservation and other resiliency-related issues.
- **Customer Water Leak Detection and early Notification** –An AMI/MDM system can identify customer leaks as they are occurring. Customers can be notified that they have a leak within their private plumbing system. This allows the customer to investigate and correct the leak before it causes a large monthly bill.
- **Customer Portal** –A customer portal allows customers to monitor their water usage and to establish their own thresholds for notification. They can review their past usage and identify the causes of undesired high water / cost.