Meter Replacement Project - Advanced Metering Infrastructure (AMI)
# Current State of Metering

## Total Service Connections - ~32,000

<table>
<thead>
<tr>
<th>Meter Accuracy Problem</th>
<th>Non-revenue Water Loss Problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>95% of meters under-registering:</td>
<td>13%</td>
</tr>
<tr>
<td>~ 3.0% less - Residential meters</td>
<td>466 Million gallons per year</td>
</tr>
<tr>
<td>~ 18.83% less - Large meters</td>
<td>Source: AWWA Water Audit Report evaluated in 2019</td>
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</tbody>
</table>

### Current Meter Reading Capabilities:
- Drive-by and manual (250) upload of meter read files to the billing system

### Current Meter Age:
- 232 Large meters – 20+ yrs old
- 25,103 residential meters - 17+ yrs old
Current Meter-to-Cash Process

1. Meter to Read
2. Meter Read Results
3. Meter to Read Results
4. Meter Read Results
5. Meter Read Results
6. Meter Read Results

Businesses and Households
Meter Staff
Billing Staff
Print Vendor
Advanced metering infrastructure (AMI) is an integrated system of smart meters, communications networks, and data management systems that remote collection of meter data for billing and maintenance purposes allowing for immediate profitability and reliability.
What Makes AMI Valuable?

Data!
AMI provides **hourly, near real-time data** that can be turned into information that empowers employees and customers.

**Meter Reading Approaches**

1. Manual Meter Reading
2. Automated Meter Reading (AMR, one-way meter reading systems, drive by or touch read)
3. Advanced Metering Infrastructure (AMI, two-way communications, Fixed Network)

**Reads per Account per Month**

- 1

- 1 - 4

- 700 - 3,000
What are the **Benefits** of AMI?

### Customer Service
- Improves overall customer service and customer satisfaction
- Streamlined meter-to-cash process
- User Friendly Customer Portal with real-time usage information
- Reduces high bill complaints
- Encourages water conservation programs

### Utility Operations
- Reduces non-revenue water loss
- Reduces truck rolls and field visits
- Improves meter management
- Reduces inaccurate/slow meters and right-sized meters analysis
- Improves detection of water theft and tamper
- Enables distribution system leak detection capabilities
- Enhances sustainability by decreasing carbon footprint

### Engineering & System Planning
- Improves system design and planning which allows for better capital improvement/expansion decisions

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Key Fayette County AMI Goals
Advanced Metering Infrastructure (AMI) is an integrated (architectural) system of smart meters, communications networks, and data management systems that enables two-way communication between utilities (service provider) and (it’s) customers (consumers).

The goal of an AMI is to provide reliable (real-time) data for billing and maintenance purposes, leading to immediate profitability.
### Project Financial - Summary

#### Project Costs (Equipment, Services, Program Management, and Contingency)

- **$11.2 Million**

#### Return on Investment

- **7.3 %**

#### Payback

- **13.5 years**

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#### Revenue Loss due to Accuracy of Meters

<table>
<thead>
<tr>
<th>% Meters</th>
<th># of Customers</th>
<th>Loss Per Meter</th>
<th>Meter Type</th>
<th>Total Loss/Service</th>
<th>Total Loss/Month</th>
<th>Estimated Total Loss/Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>-18.83%</td>
<td>232</td>
<td>66,220</td>
<td>Large</td>
<td>$213.89</td>
<td>$49,622.58</td>
<td>$595,471.02</td>
</tr>
<tr>
<td>-3.00%</td>
<td>25,103</td>
<td>230</td>
<td>Residential</td>
<td>$0.74</td>
<td>$18,655.87</td>
<td>$223,870.46</td>
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<td><strong>$819,341.48</strong></td>
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</tbody>
</table>
Conclusions

AMI transition is an important step for water utilities. Pairing aging meter replacement with an AMI transition is the most cost-effective approach.

The AMI program:

- **Is a cost-effective** approach to address the County’s aging infrastructure
- **Will address significant meter population under-registering** due to meters reaching end of life
- **Allows the Water Department to manage high non-revenue water loss,** and
- **Will benefit many aspects of your organization.**

AMI advances Fayette County Water metering capabilities to industry standards.

*The AMI Program supports Fayette County’s Mission:*

“Provide critical services to protect and enhance the health, safety and welfare of its citizens in a manner that is efficient, fiscally and environmentally responsible, and which perpetuates a quality lifestyle for future generations.”