

# ADVANCED METERING INFRASTRUCTURE (AMI)

## UTILITY CHALLENGES



### AGING METERS

Water meters, whether mechanical or electronic, are subject to wear and eventually lose the ability to correctly measure and record flow. AWWA recommends testing periodically.<sup>1</sup>



### CUSTOMER SERVICE

Overall customer satisfaction score for water utilities is 702 on a 1,000-point index. A score lower than those of airlines and mortgage servicers.<sup>4</sup> Billing questions are among top reasons customers contact their utility.<sup>5</sup>



### LACK OF CAPITAL INVESTMENTS

In 2019, the total capital investment of water infrastructure was approximately \$48 billion while investments totaled \$129 billion creating an \$81 billion gap.<sup>7</sup>



### NON-REVENUE WATER

Water loss (80% real loss + 20% apparent loss) + unbilled consumption<sup>2</sup> Significant cost to US utilities, \$4.9 billion per year.<sup>3</sup>



### AGING WORKFORCE

Retirements in the water sector result in staffing vacancies in utilities of up to 50% in some cases.<sup>6</sup>



### WATER CONSERVATION

Water Conservation / water supply availability is #3 most important issue for utilities.<sup>8</sup>

## WHY METERS ARE IMPORTANT?

1

### They are your cash register

In the U.S. water utilities collect **over \$61.8 billion** in revenue each year. All of this is achievable thanks to meters.<sup>9</sup>

2

### They help you track non-revenue water

We estimate that water systems in the US may have as much as **50% non-revenue water**.<sup>10</sup>

3

### Charge equitable share

Your meter systems allow you to charge customers an equitable share of water they use by **recording actual usage**.

4

### Encourage water conservation

Meters encourage water conservation compared to flat rates. Plus, they help with **detection of water leaks and waterline breaks** in the distribution system.

## METER READING EVOLUTION



Manual reading

**Reactive** : manual monthly reading



AMR

### Advanced Meter Reading (AMR)

Technology used by utilities to collect automatically consumption and status data from meters. AMR systems can be either walk-by or drive-by. An endpoint connected to the meter captures the data, which is collected by utility personnel by walking or driving by with a data receiver in close proximity to the device. Regardless of how the meter is read, the communication is one-way. The meter communicates with the meter-reading device, but the device cannot send a command back to the meter. After collection, the data is transferred to a database where utilities can monitor and analyze usage, troubleshoot issues and bill customers based on actual consumption, rather than estimates as is often the case with manual read systems.



AMI

**Proactive** : online hourly reading

### Advanced Metering Infrastructure (AMI)

Refers to an integrated system comprised of meters, communication network and data management system that enables two-way communication between meter endpoints and utilities. The system automatically transmits the data to the utility via a fixed network either on request or at short fixed intervals. The utility can use the near real-time data to monitor water usage, detect system malfunctions or irregularities and improve overall operational efficiency. Unlike AMR, AMI does not require utility staff to collect the data and more importantly, it enables two-way communication between the meter and the utility, allowing commands to be sent to the meter for different purposes, including remote service disconnects.

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5. Ofwat SIM Survey (2015/16)

6. Renewing the Water Workforce report from Brookings Metropolitan Policy Program (2018)
7. Drinking Water Infrastructure Needs Survey and Assessment: Sixth Report to Congress from EPA (2018)
8. 2019 SOTWI: AWWA State of the Water Industry
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10. What Is Non-Revenue Water?, Fluencecorp

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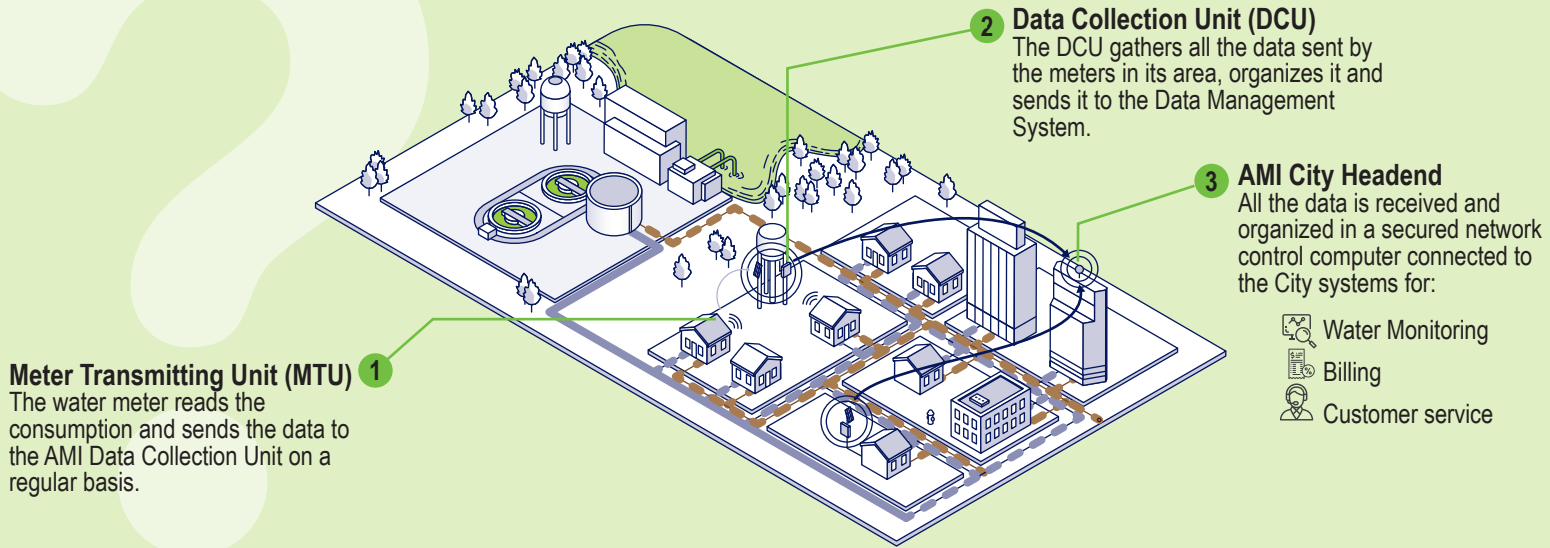
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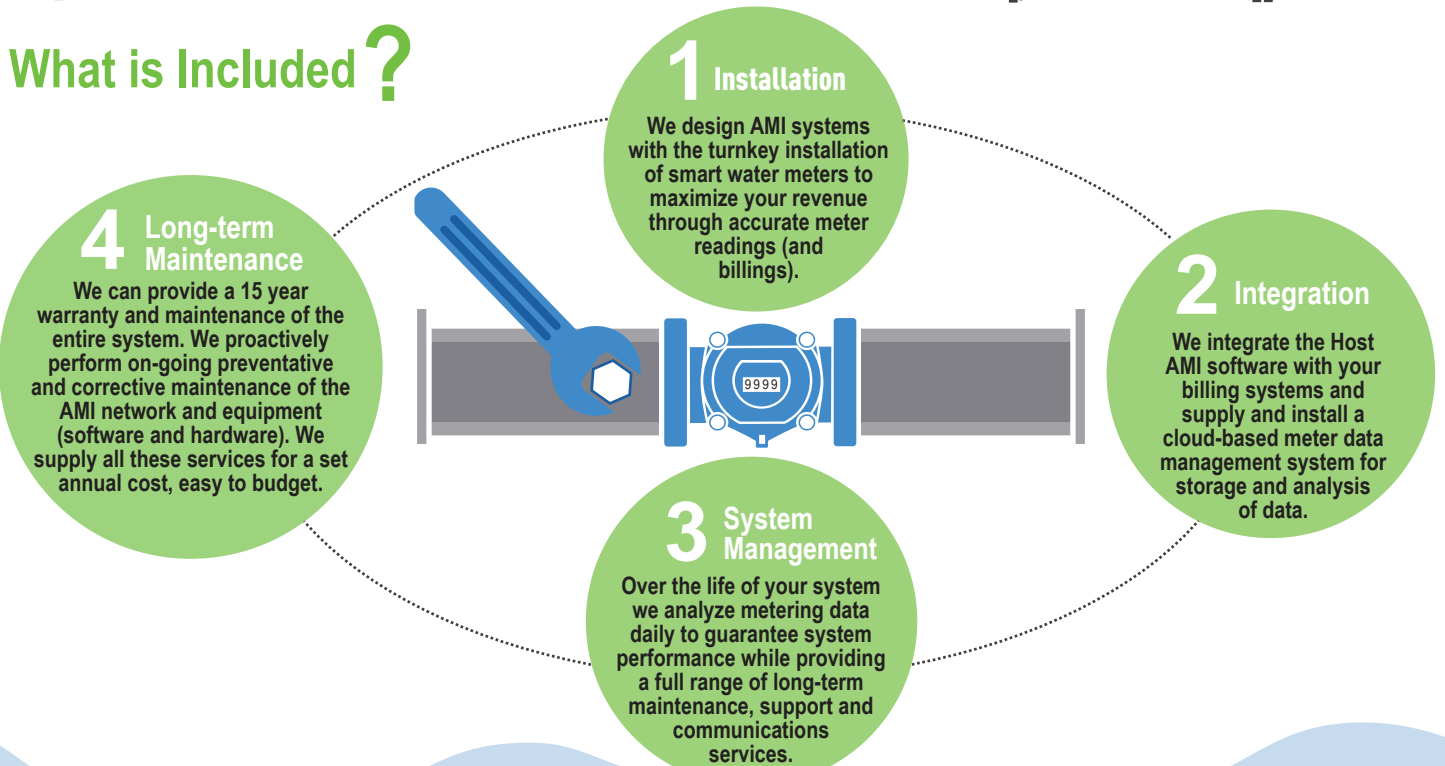
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## HOW DOES AN ADVANCED METERING INFRASTRUCTURE SYSTEM WORK?



## USG METERING ASSET MANAGEMENT PROGRAM

### What is Included?



### What are the Benefits?

- ✓ Revenue enhancement
- ✓ Reduction of water loss
- ✓ Improved customer service
- ✓ Operational peace-of-mind
- ✓ Single point of responsibility
- ✓ Long-term transfer of risk
- ✓ Spread of initial deployment cost
- ✓ Predictable budget

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