Maximizing AMI success with a water meter location survey

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When a water utility considers upgrading a metering system to advanced metering infrastructure (AMI), it might not realize that most of the implementation costs aren't necessarily from implementing the AMI network itself. Instead, many costs come from issues discovered at the meter location.

What do water utilities need to know about changing out meters during an AMI project?

We held a webinar in which we explored what water utilities need to consider when upgrading a metering system to AMI. Topics included pricing AMI deployment and best practices for location surveying.

Watch now

Conducting a water meter location survey can help remedy this. In this blog, we'll dive into some of the useful information a water meter location survey can provide and some tips for dealing with meter locations in an AMI project.

Benefits of a water meter location survey

When an AMI upgrade is being considered, the majority of the implementation cost is incurred at the meter location (about 80% of total capital cost), not the AMI network itself. The meter, endpoint, replacement parts, and installer costs drive this cost factor. The installer costs and replacement parts can vary widely based on several issues.

We recommend utilities perform a meter location survey to assess the true condition inside and surrounding the water meter box and establish a better understanding of the required effort and budget to complete a water AMI deployment.

Typical cost breakdown of a water AMI project

Most of the project costs come from work at the meters, not the network itself.

A location survey provides a better understanding of the current state at the meter location so utilities can mitigate risk. Utilities could conduct a survey of its entire territory or a sample survey of strategic locations.

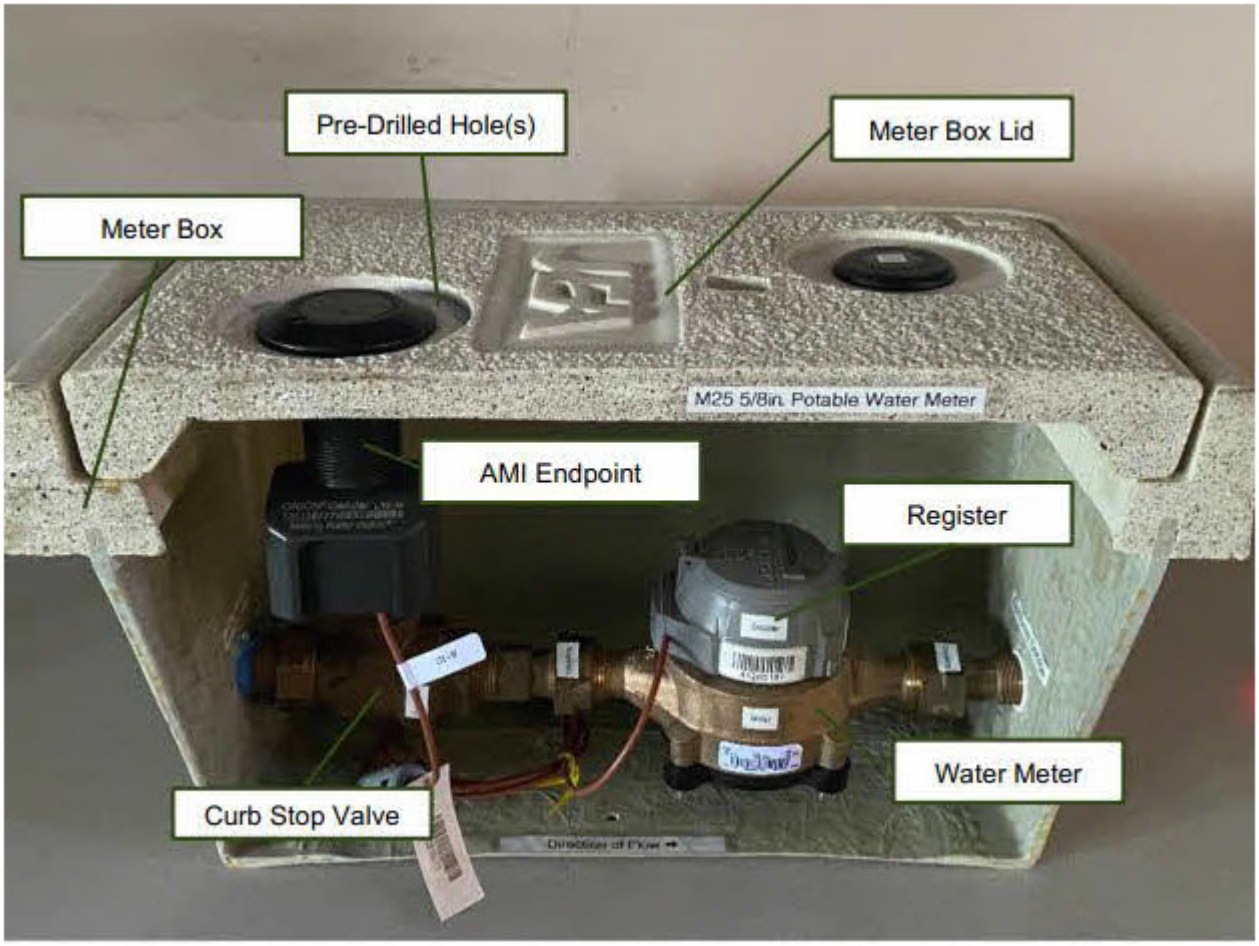
To learn more about what goes into a successful water meter location survey, watch our on-demand webinar with Tacoma Public Utilities, The largest cost drivers in a water AMI project.

Common issues encountered at meter locations

It's difficult to know what to expect upon arriving at a meter location. But before we dive into some of these common challenges, it's important to first establish familiarity with the major components typically found at a meter location.

Major components at a meter location

Besides the normal meter components, an AMI project will add an AMI endpoint that will mount above or next to the meter.



Source: JEA

We've worked alongside many water utilities in their AMI deployments, so it's safe to say we've seen some things. These are several of the typical issues that utilities encounter at the meter location:

- *Mismatches between utility databases and actual in-field information.* Discrepancies in meter size, serial number, box or lid size, and more are common at the meter location.
- *Damaged components.* Meters are often exposed to weather and other incidents that cause inoperable curb stops, corroded water lines, broken meter boxes or lids, and more.
- *Meter buried in the dirt.* If a meter is buried, it'll require more labor (and cost) to dig out dirt from the meter box.
- *Equipment incompatibility.* In some cases, new metering equipment won't fit an existing box. In others, there may not be enough lay length or the endpoint can't be attached to the lid.

  Knowing the conditions at the meter location across the meter population allows you to quantify these conditions in an RFP, getting the best pricing possible.

- *Size restrictions.* The meter box is too small to work within and requires removing the meter box to replace the meter properly
- *Existing leaks.* If a leak is discovered, it'll require extra plumbing and repair.

Knowing the conditions at the meter location across the meter population allows you to quantify these conditions in an RFP, getting the best pricing possible and facilitating the evaluation of costs between installation vendors.

Tips for water meter maintenance and location surveying

Water meter boxes and lids provide protection and access to underground water meters and valves. The condition of a water meter box is crucial in protecting and preventing damage to the meter and providing access to valves.

Water meter boxes should be inspected for the following:

- *Accessibility.* Meter boxes should be clear of any debris, obstructions, or overgrown vegetation.
- *Leveling.* Uneven or unstable boxes can lead to a tripping or falling hazard (especially in high-traffic locations) or cause damage to the meter over time.
- *Lid condition.* Meter lids that aren't flush or securely in place can allow debris, water, or pests to enter the meter box.
- *Lid type.* The meter lid has to allow the endpoint to transmit to the network. Concrete or metal lids can weaken the signal to the network.
- *Drainage.* Depending on the location, meter boxes should have proper drainage to prevent water accumulation, which may lead to corrosion or malfunction of the meter.

Routine maintenance and inspection of water meter boxes are essential in making sure water meter readings are accurate and preventing costly repairs or replacements.

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