



## PROJECT BRIEF

### A Practical Primer on the Many Uses for AMI in Water Conservation & Efficiency

**Challenge:** Advanced Metering Infrastructure (AMI) is becoming more prevalent as utilities upgrade their metering infrastructure. These systems often offer hourly reads on water use, which is 720 times more granular than monthly meter reading. This new wealth of data is exciting but can also be overwhelming to utilities that may not know where to start, how to start, or what tools/skills are needed. At the same, utilities need greater savings from water conservation and strategies to deal with increasingly extreme weather, such as droughts and deep freezes.

**Opportunity:** With great data, comes great opportunity. Utilities can create new programs and enhance existing programs and services designed to increase water savings, manage demand, reduce water loss, and help with internal operations. In a world with a short attention span, being able to connect customers with meaningful data insights in a timely manner has the potential to greatly increase the impact of our work and improve customer satisfaction. Most utilities start with some form of leak or high use notifications. *But what else can be done?*

A summer 2022 survey of water utilities found that AMI is being used with more than two dozen different programs and services, in addition to leak notification and high use programs. These include indoor and outdoor audits, meter sizing, evaluation/setting of rate structures, benchmarking and more. AMI can both **enable** brand new programs and services and **enhance** versions of programs in place prior to AMI. Additionally, AMI data proved useful to many utilities in responding to leaks and pipe breaks from deep freezes like occurred in December 2022 and early January 2023. This project proposes to outline the many potential ways to utilize AMI data for conservation and efficiency purposes including examples, considerations, and recommendations.

#### Research Objectives:

- Empower utilities with AMI data to confidently create and/or enhance programs that deliver greater savings in a more efficient and effective manner.
- Increase knowledge and awareness of the possibilities for using AMI data with specific uses cases and quantifiable data
- Explore and build on utility experience using AMI data to respond to drought and deep-freeze events, among other use cases.
- Provide guidance on the skills, tools, software or other resources needed to enable AMI programs.
- Strengthen a peer network of utilities with AMI.

## Expected Deliverables

### Practical Primer Report:

- Descriptions of use cases for AMI, case studies/real world examples where possible, including specific and quantifiable benefits of all kinds
- Details on the skills, tools, software or other resources needed to enable the use cases
- Examples of policies that may need to be added or adapted with adoption of AMI

### Learning and Engagement Activities:

- Cultivate a peer network to share ideas throughout and after the completion of this project.
  - Bring in agency staff across the different departments that contribute to the AMI system (meters, technology, billing, customer care, etc.).
  - Collect examples of collateral associated with the primer for sharing (e.g. service rules language, liability language, program processes, analytics training resources, etc.)
  - Connect agencies with the same vendors or projects to learn from each other.
- Engagement with technology vendors: help influence market related to AMI.

### How does this complement existing resources?

This primer will compliment and build on existing AMI research (from AWE, AWWA, WRF) on leak notifications, customer portals, billing/high use, and water loss audits by going into depth and providing detailed examples and use cases.

Here are just a few examples:

- Pairing AMI with weather data to flag irrigation during rain events.
- Benchmarking multi-family and commercial properties.
- Indoor and outdoor audits.
- Water loss/revenue recovery efforts like tracking use on inactive accounts
- Optimizing marketing of programs and services to customers who may benefit the most.
- Enhanced messaging and reporting for customers.
- Water use restrictions monitoring and enforcement.
- Demand modeling and forecasting; peak demand analysis.
- Education programs (K-12 and adult).

We expect to discover and document additional use cases through the course of the project.

**Tasks & Proposed Budget:** \$110,000.

Task	Description	Budget
<b>1</b>	<b>Agency Outreach and Research.</b> Conduct interviews with utilities and possible third-party organizations to document current, advanced, novel, and future use cases. Identify the tools, software, skills and any other resources needed to support program development and implementation. Convene focus groups to understand opportunities and challenges. Conduct individual agency outreach to create descriptions of programs and services enabled by or enhanced by AMI, including lessons-learned and recommendations from the implementing agencies.	\$35,000

2	<b>Agency Policy Evaluation.</b> Document considerations for how AMI data might affect existing policies, processes or rules (e.g. leak adjustment policies).	\$15,000
3	<b>Meter and Software Company Outreach.</b> Conduct interviews with meter and software companies, as possible, to document functionality (e.g. what are the reports the meter company generates, software capabilities) and engage vendors insight on the functions, processes, analytics are of value to utilities.	\$10,000
4	<b>Identify Education and Training Opportunities.</b> Identify education and/or training that could be created to assist water conservation and efficiency professionals with making use of AMI data and conducting experiments to understand impact from AMI-enabled programs. Identify opportunities for education, training and partnership with external stakeholders like plumbers, irrigation companies, pool companies, etc.	\$15,000
5	<b>Report; Educational Event(s).</b> Create a report of this information with case studies and/or examples where possible. Host at least one educational event, like a recorded webinar or a workshop.	\$15,000
6	<b>Peer Learning Cohort Coordination.</b> Coordinate regular meetings among project participants to learn and share from each other.	\$5,000
	Project Management	\$10,000
	Contingency	\$10,000
	<b>Estimated Total</b>	<b>\$110,000</b>

**Research Supporter Benefits:**

- Increase utilization of AMI and associated water savings.
- Participate in group conversations and learn what other utilities are doing with AMI.
- Opportunity to serve on the PAC and better ensure your agency’s perspective and issues are addressed.
- Demonstrate agency commitment to progressive technology solutions, improving level of service to customers, and advancing benefits from AMI.
- Individualized results if we can highlight agency as a case study.
- Early access to report findings.
- Professional development and networking.

**Funding and Participation:** The funding structure is designed to allow for a broader range of utilities to participate by scaling based on size of organization.

<b>Research Sponsors (Large Agency, Meter Company, Foundation)</b>	\$7,500 - \$10,000	Participate in PAC, interviews, and focus groups.
<b>Research Sponsors (Small Agency)</b>	\$2,500	

**Estimated Timeline:** Approximately 9-12 months from project kickoff. Projected is expected to launch Spring 2023.