MEMORANDUM

Date: March 25, 2026

To: Water Utility Board

From: January Vang, Finance & Administration Manager
Krishna Kumar, General Manager

Subject: Status Report on Advanced Metering Infrastructure

RECOMMENDATION

Informational Item.

BACKGROUND

In 2011, Madison Water Utility (Utility) implemented an Advanced Metering Infrastructure (AMI) system to facilitate water conservation, improve customer service including leak detection and make available self-service consumption data along with increased billing frequency. Various vendors such as Itron, Inc., N. Harris Corporation, Corix Utilities, and Badger Meter of Brown Deer were selected via request for proposal to implement and service this AMI system. The current AMI components and equipment are listed below.

Current AMI Components and Equipment				
Units Name	# of Units Available	Estimated Cost per Unit	End of Life	End of availability for purchase
Collector	15	$7,500.00	2034	12/31/2030
Repeater	167	$5,600.00	2034	12/31/2030
Endpoints	73,000	$100.00	2031-2033	12/31/2030
Software/Hardware Maintenance	N/A	$102,500.00	2034	12/31/2025

Current Challenges:

There are currently two main challenges that warrant an upgrade to the Utility's current AMI system.

- Endpoint Battery Life:

  At the time of the AMI system implementation, expected life cycle for endpoint battery is 20 years. Current system monitoring indicates a gradual failure of endpoint battery life.

  - Focus should be given to replace failing endpoint battery as this will greatly impact our ability to collect accurate data for billing and consumption information.

- Technology Obsolescence for Radio Fixed Network AMI:

  Most vendors, particularly those capable of implementing and sustaining a meter population relative to the Utility's existing meter base, are migrating from radio fixed network to cellular technology.

  - Utility's current AMI system is not compatible with cellular technology system.

These two concerns will require a concerted effort from a dedicated team to research and confirm the best available AMI upgrade for the Utility.

Timeline for AMI upgrade and pre-funding plan:

Estimated timeline to implement an upgrade the Utility's AMI system is two years (2030/31). Selected vendors will provide software, hardware and related installation services within this time frame before the end-of-life support for our hardware and software in 2031.

Given the magnitude of estimated funding needed for a complete upgrade ($20 million), the Utility is planning to prefund the project cost in a phased manner over 5 years, using annual operational surpluses, beginning from this year as shown in the table below. This would enable the Utility to implement the upgrade in 2030/31 smoothly.

Milestone	Year	Funding Amount
Project Pre-funding	2026	$4M
Project Pre-funding	2027	$4M
Project Pre-funding	2028	$4M
Project Pre-funding	2029	$4M
RFP / Selection of Vendors	2029	$4M
Implement Project	2030/31	$0M

As per the plan laid out above, Utility has created a new reserve for $4 million this year and will continue to transfer $4M in each of the next four years until the Utility has pre-funded $20M to cover the estimated cost for upgrading the current AMI system, subject to fund balance availability each year.