



# ADVANCED METERING INFRASTRUCTURE (AMI)

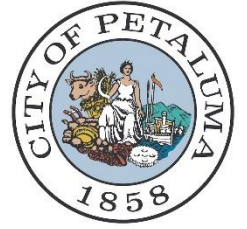
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COUNCIL MEETING PRESENTATION

MAY 1, 2023

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LUCAS PEREIRA



# Agenda

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- What is AMI?
- Eye on Water (Customer Online Portal)
- When is it happening?
- Q&A

What is AMI?



# Water Meter Components

Register/Encoder:  
records the water usage



Endpoint:  
transmits  
the water  
usage data

Meter body: measures  
water usage

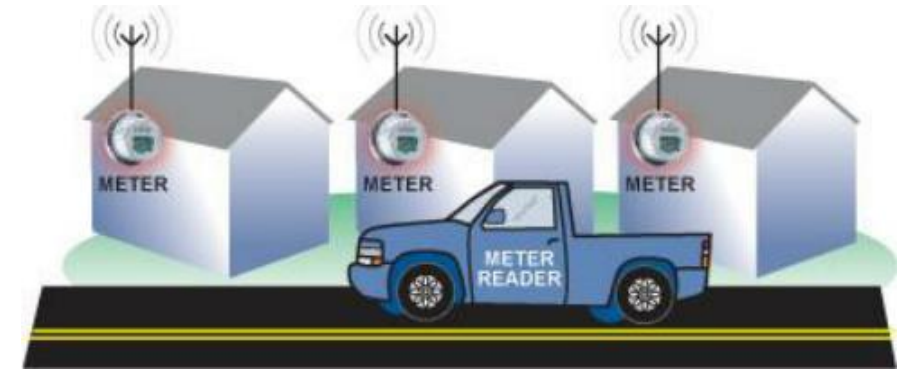


Water meter inside  
water meter box

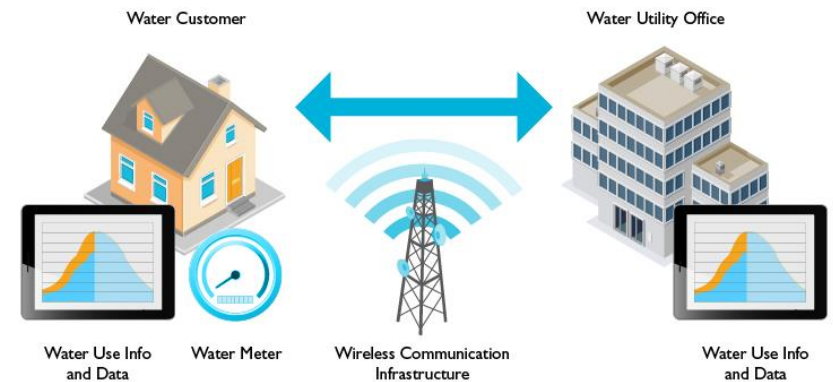
# Encoder-Endpoint Science 101: AMR vs AMI



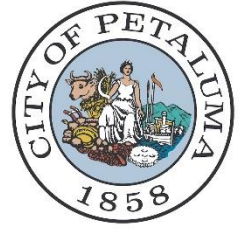
- **AMR (Automated Meter Reading):** Current technology
  - Requires monthly drive-by
  - Limited and infrequent water usage data
  - Limited access to water data for customers
- **AMI (Advanced Metering Infrastructure):** New technology
  - Water use data sent automatically – no drive-by required
  - Water consumption available in 15-minute intervals uploaded 4x/day.
  - Online and quick access for City and customers



AMR



AMI



# What is AMI?

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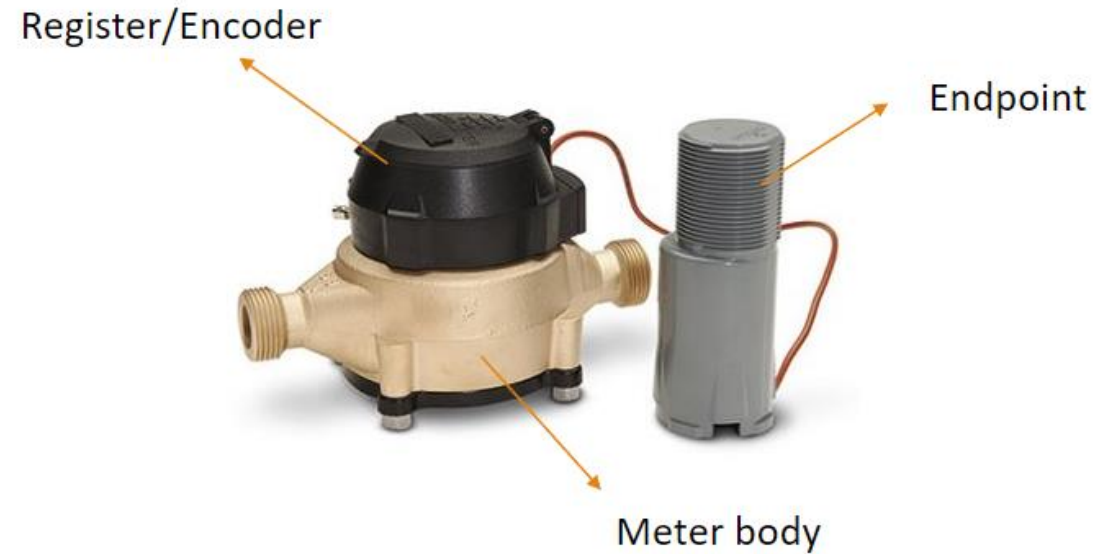
A new kind of water meter technology designed to:

- Collect information remotely and in near real time
- Detect leaks early for quicker repairs
- Empower our community to:
  - Understand, manage, and optimize water usage
  - Increase water conservation



# AMI Upgrade

- The upgrade to AMI consists of replacing two meter components:
  - Endpoint
  - Register/encoder (as needed)







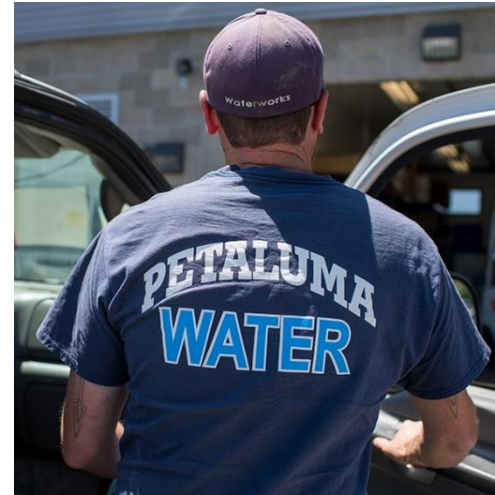
# Why AMI?



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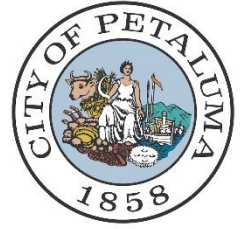
Online Quick Access to  
Water Usage Information

Early Leak  
Detection

Operational Efficiencies

Water Conservation  
Opportunities



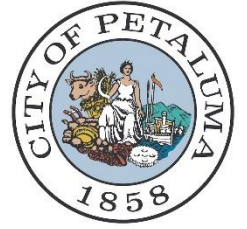


# Why AMI?

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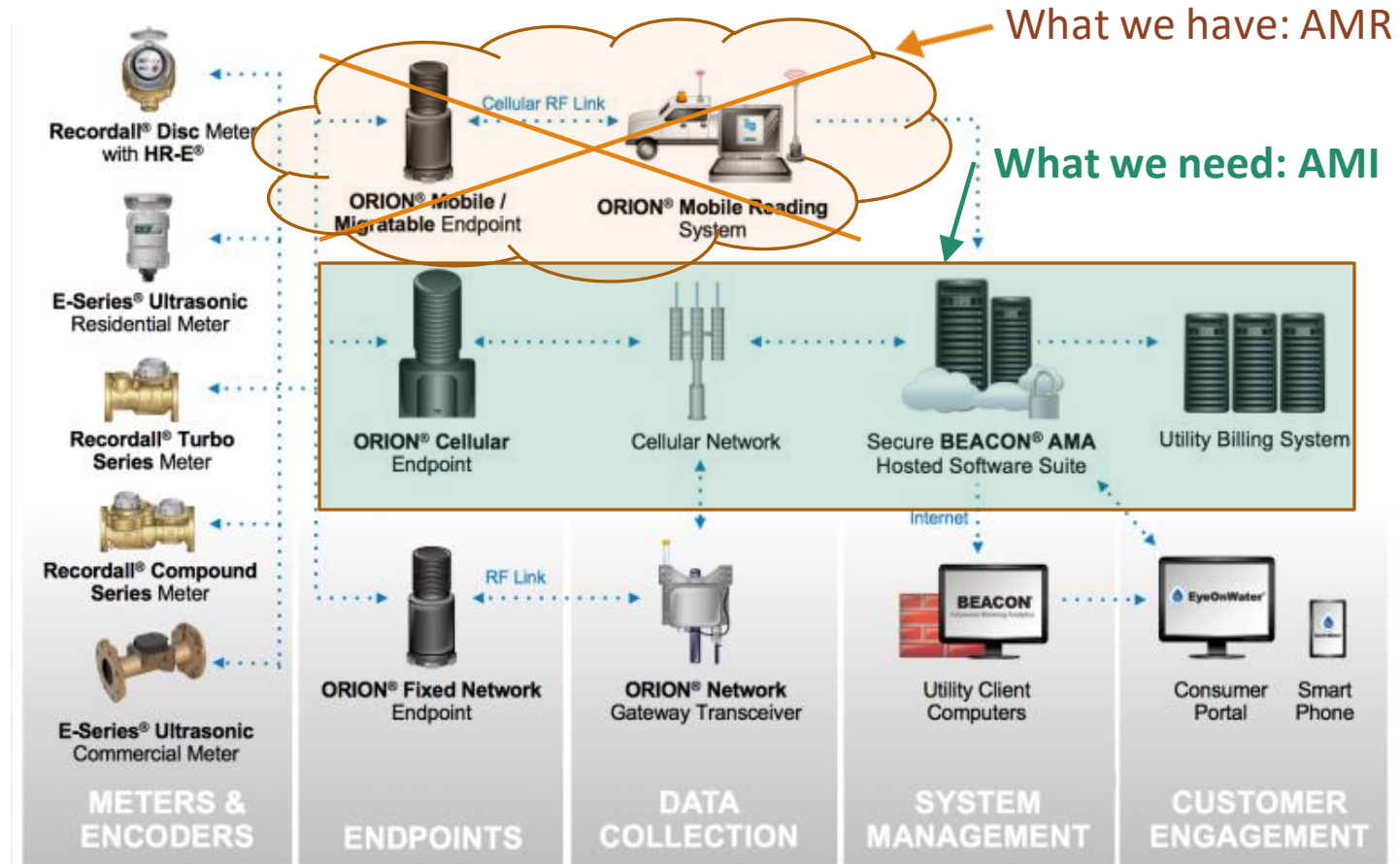
- AMI is one action we are taking today to save water for tomorrow
- Together, we can achieve greater water conservation and improve water supply reliability for our City





# Why AMI?

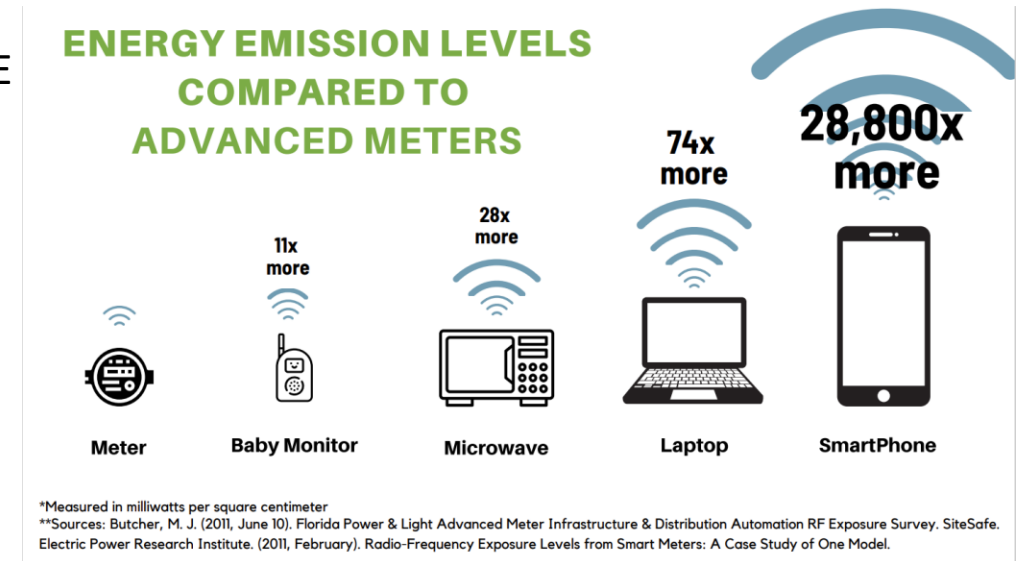
- AMR components need to be replaced anyway
  - Current encoders and endpoints are at the end of their life and due for replacement
  - AMR is outdated and parts are hard to procure
- AMI is the next step in water meter technology
  - Real-time data is increasingly important
  - Considered best practice in the industry
  - Empowers customers





# AMI Signal

- **Broadcast Network:** LTE-M (machine to machine applications)
  - Better power efficiency and signal range than standard LTE (used for cell phones)
  - Handles more data through better bandwidth and lower latency
  - Drastically reduces power consumption of devices
- **Signal Strength:**
  - Significantly less than common household devices
  - Signal emitted 4x/day - equivalent to short text message
  - Exposure is minimal due to meter location





# How will AMI benefit you?

- Access to near real-time water usage information – Eye on Water (online portal)
- Leak detection
  - Prevents surprise water bills
  - Enhances water conservation
- Less vehicles on the road – reducing greenhouse gas emissions





# Who else uses AMI?

- City of Santa Rosa – 2017
- Valley of the Moon Water District (Sonoma) - 2015
- North Marin Water District - 2018
- Alameda County Water District – 2021
- City of Sacramento - 2017
- City of Santa Barbara - 2014
- And many others across the state and nationwide



# Eye on Water (online portal)

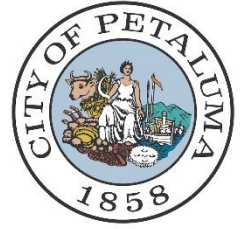


# Eye on Water

- **Direct Water Consumption Data**
  - Allows customers to easily view, understand and manage their water usage.
- **Improved Customer Service**
  - Quicker and easy access to information for City staff and customers.
- **Promotes Water Conservation**
  - Creates opportunities for changing behavior related to water conservation.

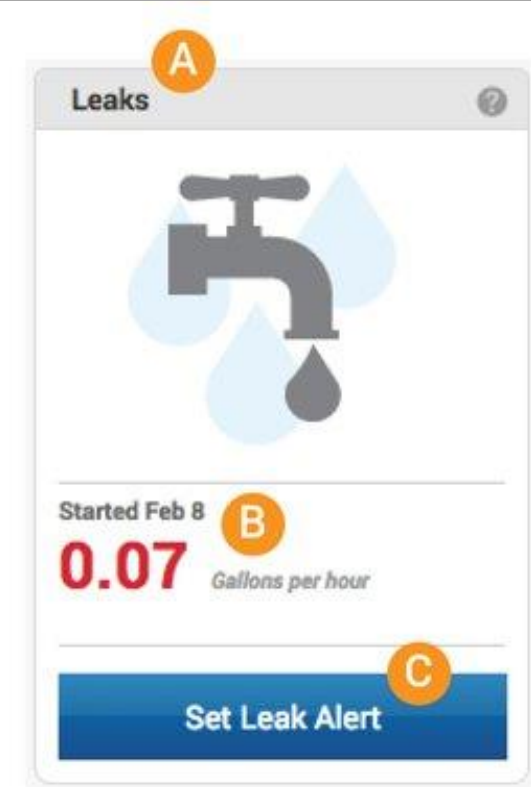






# Eye on Water

- **Features:**
  - Web-based consumer portal, plus Android and iOS mobile app
  - Configurable leak alerts by email or SMS text
  - Secure, cloud-based platform
  - Hourly, daily, monthly, and yearly data and charts
  - Temperature and precipitation overlays
  - Week-over-week consumption comparisons



When is it happening?



# When is it happening?

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- Pilot program started in January 2022
  - 58 City and City staff meters have been converted to AMI
  - Positive feedback from residential and commercial customers



# When is it happening?

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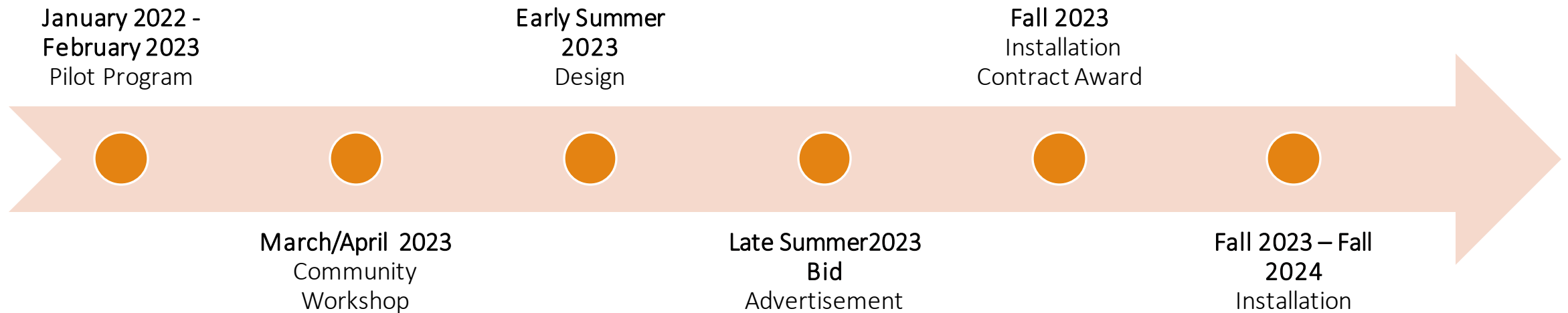
- City-wide AMI roll out to begin later in 2023
  - There will be an opt out option. Sign up to receive more info at: [cityofpetaluma.org/ami](https://cityofpetaluma.org/ami)
- Some failing AMR registers were replaced with AMI registers (paused replacement for now)





# When is it happening?

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# How will you know?



- **MAIL/EMAIL:**
  - Letter a few weeks in advance of your upgrade
- **DOOR HANGER:**
  - The day your register is upgraded with instructions on how to sign up for "Eye on Water" to start monitoring your water usage.
- **CITY WEBSITE:**
  - The City of Petaluma will have project updates available on the project website: [cityofpetaluma.org/ami](http://cityofpetaluma.org/ami)



## AMI WATER MEDIA TECHNOLOGY

The City of Petaluma is pleased to announce a leap forward in our water meter technology: the launch of our Advanced Metering Infrastructure (AMI) water meter program. AMI is designed to collect water meter information remotely and in real time - empowering our community to:

- Identify water use trends and irregular use patterns
- Detect potential leaks early (preventing costly water bills)
- View daily and hourly household water usage via an online "Eye on Water" portal

The real-time data collected from AMI meters can help the City and your household improve water use efficiency and conservation.

Our previous system required City staff to drive by each water customer's meter periodically to collect data via scan technology. Through the use of the remote collection Eye on Water system, AMI eliminates the need for drive-by collections, saving time and staff resources. AMI also helps reduce the City's carbon footprint by keeping City vehicles off the road.

AMI meters send a signal to our water department. We make the data available to you on your bill as well as through an online Eye on Water portal that is updated frequently.

### WANT TO LEARN MORE?

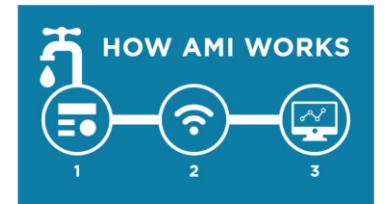
#### JOIN US FOR A VIRTUAL INFORMATIONAL MEETING

In the coming weeks, we will hold a virtual meeting on Zoom to share information and answer questions about the transition to AMI for Petaluma water customers. Please enter your information in the sign-up form below so we can share Open House details as they become available.

#### SIGN UP FOR UPDATES

Name \*

First  Last



GRAPHIC: HOW AMI WORKS

1. Water usage data is captured at your AMI meter.
2. Data is sent via secure signal to the City of Petaluma Water Department.
3. Daily and hourly water use data is available for customers to view through an online portal.



**Steps to Create an EyeOnWater Account**

1. Enter your service or billing address ZIP/Postal Code.
2. Enter your account number as it appears on your water bill. Don't have a copy of your water bill? Contact your utility.
3. Enter and confirm your email address.
4. Create and confirm your password.
5. Read and accept the Terms of Use.
6. Verify your email address in the confirmation email.
7. Enjoy using EyeOnWater!

**SAMPLE WATER BILL**

CUSTOMER NAME	SERVICE LOCATION	ACCOUNT NUMBER
JOHN DOE	123 MAIN STREET	123456789

**BILL DATE** 01/13/2017 **CURRENT CHARGE** \$45.00

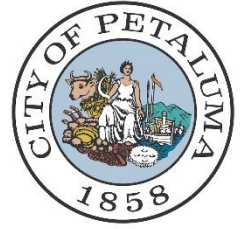
**Service or Billing ZIP/Postal Code:**

**Account Number:**

**Next**

Already have an account? Sign in here.



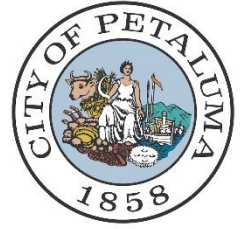


# How will the installation impact you?

- Water meters are typically located on sidewalk, driveway, or front yard
- Only access required for upgrade is to water meter box







# How will the installation impact you?

- **Temporary Water Shut-Off**

- **Residential** water customers will most likely NOT require to have their water shut off. If required, service interruptions typically last 30-minutes
- **Commercial, Industrial, and Agricultural** customers may have their water shut off temporarily for approximately 1-hour. Service interruptions will be coordinated with property owners to minimize impacts



- **Clear/Unobstructed Access**

- Please trim overgrown landscaping and remove objects that are blocking access to the water meter box



# In conclusion...

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## AMI

- ✓ Empowers customers to monitor their water usage in real-time
- ✓ Collects data more efficiently
- ✓ Helps detect leaks early and easily
- ✓ Allows for water conservation and potential savings through water use management

## AMI DOES NOT

- ✗ Change how you are billed for water usage
- ✗ Require drive-by data collection – data is collected remotely
- ✗ Transmit or monitor any personal customer information

# Questions & Answers

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