Smart Metering - Project Update

City Council

September 21, 2023

Presented by:
Candace Cannistraro — Deputy City Manager
Scott Bouchie — Energy and Sustainability Director
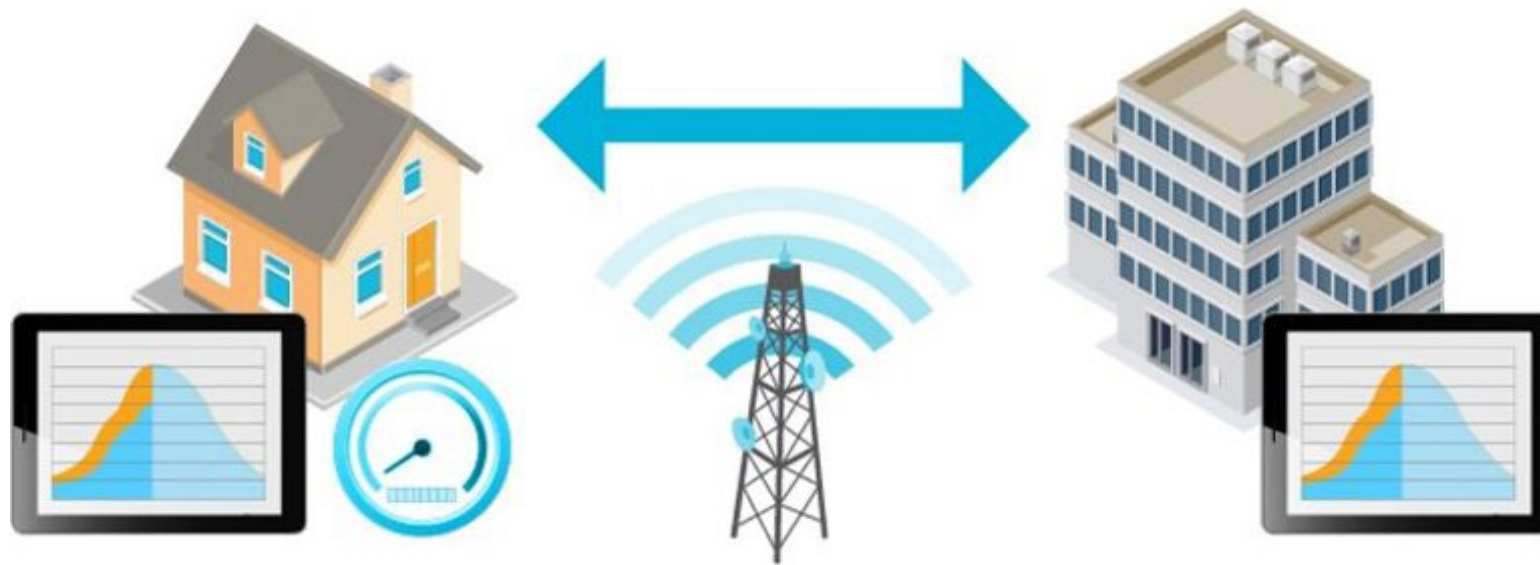Chris Hassert — Water Resources Director
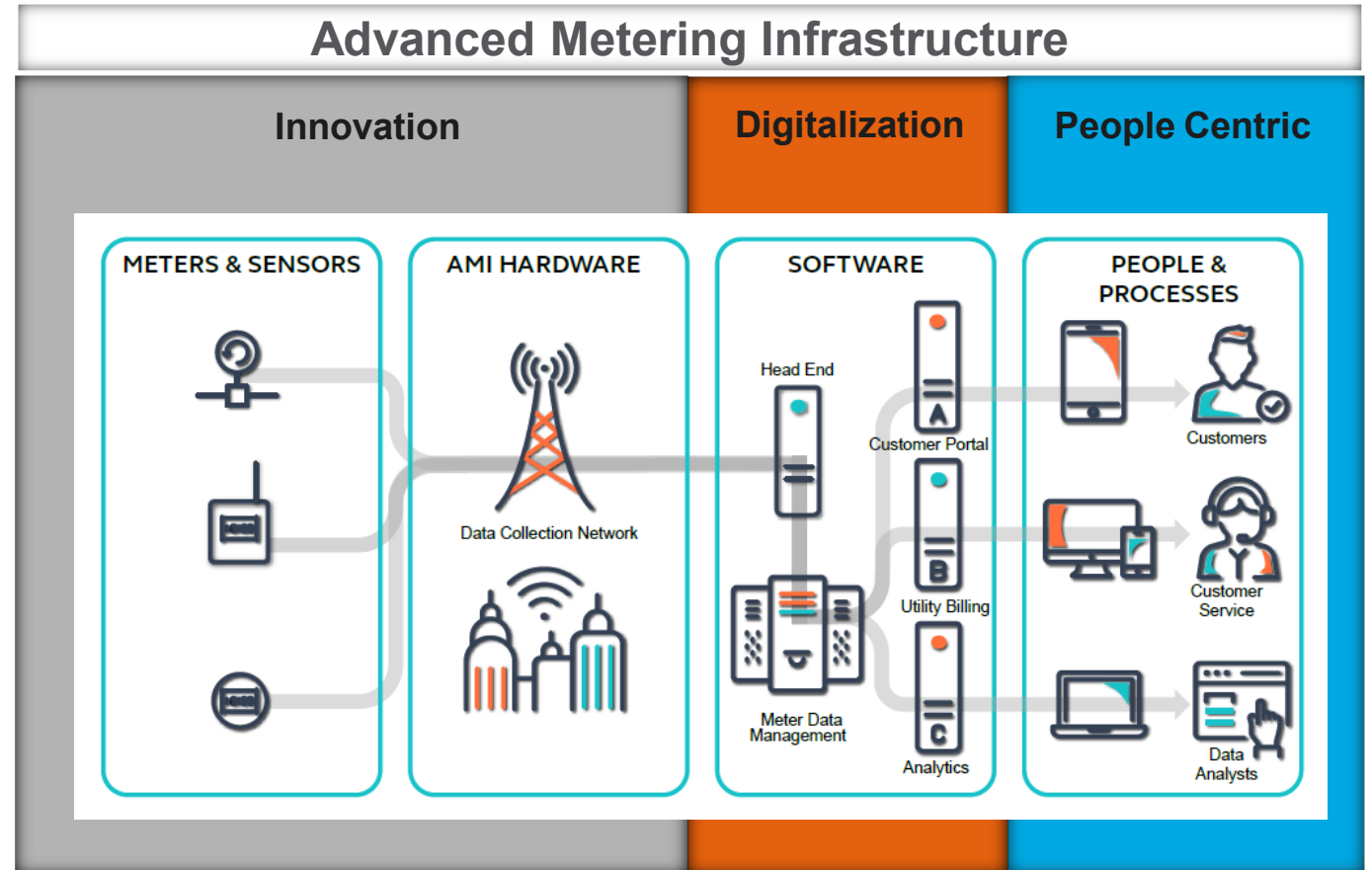Tim Meyer — Assistant Business Services Director

Advanced Metering Infrastructure (AMI)

Advanced metering infrastructure (AMI) is an integrated system of smart meters, communications networks, and data management systems that enables two-way communication between utilities and customers

Smart Metering Overview	Project – Phase 1	Project – Phase 2	Communication	Timeline

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AMI Solution Components

Building a **resilient** and **sustainable** utility to enhance the live, work and play experiences of Mesa residents and employees
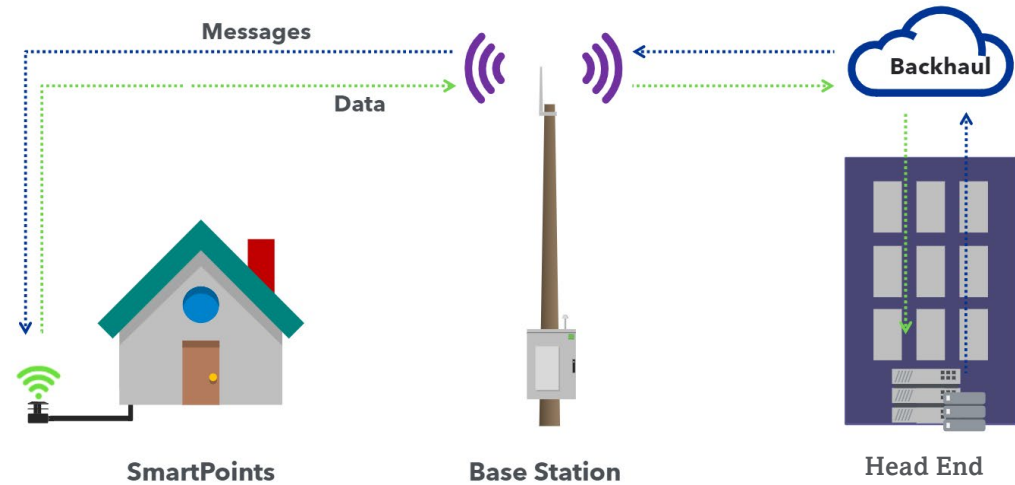
- More than just Smart Meters -

Advanced Metering Infrastructure

Innovation	Digitalization	People Centric

METERS & SENSORS | AMI HARDWARE | SOFTWARE | PEOPLE & PROCESSES

Data Collection Network

Head End

Customer Portal

Meter Data Management

Utility Billing

Analytics

Customers

Customer Service

Data Analysts

Sensus FlexNet AMI Major Components & Services

The City's Smart Metering Solution will be integrated with following City software:

- **Banner** Customer Information and Billing System
- **ESRI** Geographic Information System
- **SilverBlaze** Customer Portal
- **Milsoft** Outage Management System (new)

Equipment

- Water Meters
- Electric Meters
- Gas Meters
- Meter Covers
- AMI Communications Network Equipment (Base Stations)
- AMI SmartPoints (radios)

Software

- AMI Head End (RNI)
- Meter Data Management System (Harris Compass)

Professional Services

- Vendor and Subcontractor Project Management
- Implementation Services
- Integration Services
- Meter Installation Services

Support Services

- Software Support Services (Hosted)
- Helpdesk and Technical Support
- Equipment Warranty Support

Anticipated Benefits

Water and Energy Resources

- Improved customer meter accuracy
- Improved meter inventory management
- Reduced field work due to high bill investigation, check reads, etc.
- Enhance operational efficiency - reduced system losses, improved identification of theft and tamper, remote turn off (electric)
- Improved electric outage restoration times
- Improved safety of employees
- Data and information to support operational decisions

Customers

- Improved customer experience
- Less high bill complaints
- Proactive customer service leak notifications
- More information about utility services through the customer portal (water, gas and electric usage information, outage information)
- Report electric outage and receive text alerts about the status of outages

Business Services

- Streamlined Meter-to-Cash processing
- Accurate billing, less billing exceptions
- Improved customer service

Smart Metering Overview	Project – Phase 1	Project – Phase 2	Communication	Timeline

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Initial Deployment Complete

System Accepted

on 8/15/2023

Phase 1 Successes

- Approximately 2,000 meters (combination of water, electric, and gas, various customer types and customer applications)
- Smart City technology – Pressure sensor at PRV Station #4 – 5928 E University Drive
- Software integrations with the billing system and outage management developed and fully tested
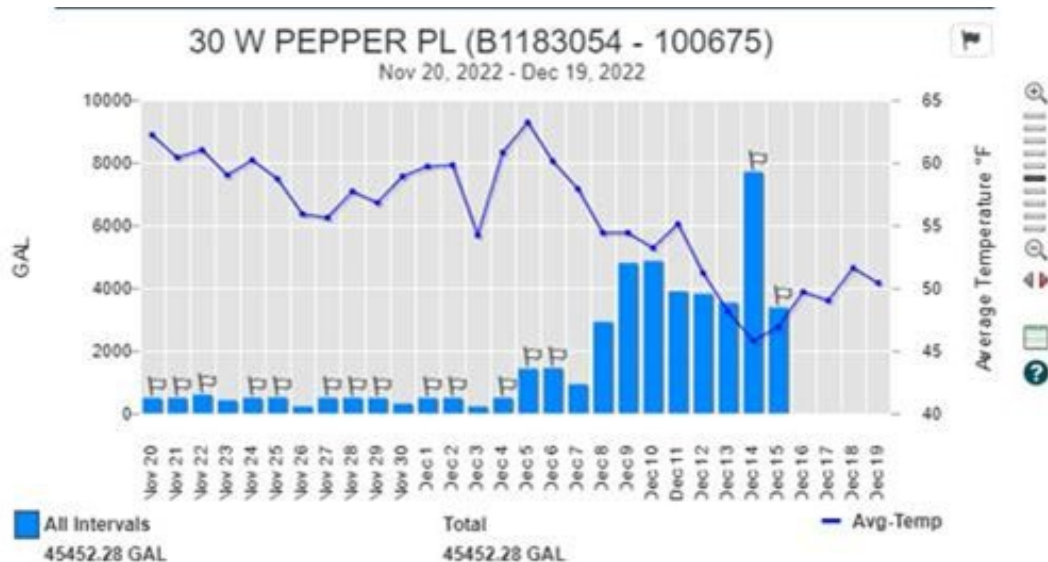- Installation of six (6) Phase 1 Base Stations

Phase 1 Delays

- Software integration with the customer portal will occur during Phase 2
- Electric meter supply chain remains difficult. Priority was given to meters needed for new customers

Smart Metering Overview | Project – Phase 1 | Project – Phase 2 | Communication | Timeline

Realized Benefits

- WRD team received a continuous flow alarm at 30 W Pepper – 0.75 GPMs for 24 hours 12/8 – 12/15/2022
- Irrigation valve was stuck partially open causing an abnormal continuous consumption > 4 GPMs
- Shut off at the backflow

Citywide Deployment Underway

Kicked off
8/22/2023

Phase 2: Full deployment activities

- Install remaining meters/endpoints throughout City of Mesa's service territories

  - September 2023 – Gas meter retrofits and full exchanges to begin

  - November 2023 – Water meter retrofits and full exchanges to begin

  - 2024 – Electric meter exchanges to begin

  - Staggered start dates and volume is necessary due to continued supply chain issues.   Full deployment rate is estimated to begin in the first quarter of 2024

- Installation of remaining 14 Base Stations

- Software integration with the customer portal (Silverblaze)
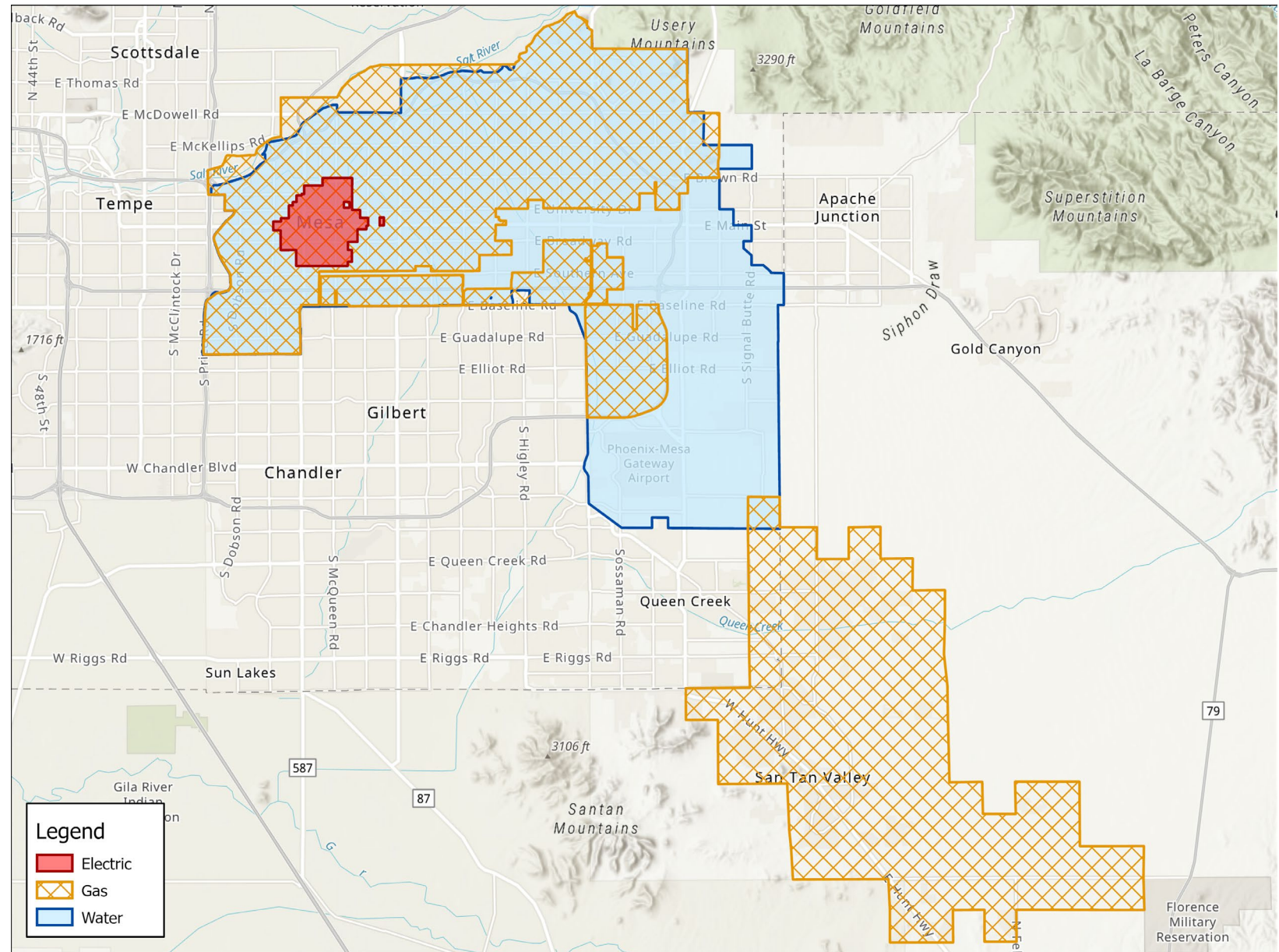
Utility Service Areas

Electric:
  residential   14,400 meters
  non-residential   2,700 meters

Natural Gas:
  residential   69,100 meters
  non-residential   2,900 meters

Water:
  residential   140,000 meters
  non-residential   16,700 meters

Total Current Meters 245,800

Legend
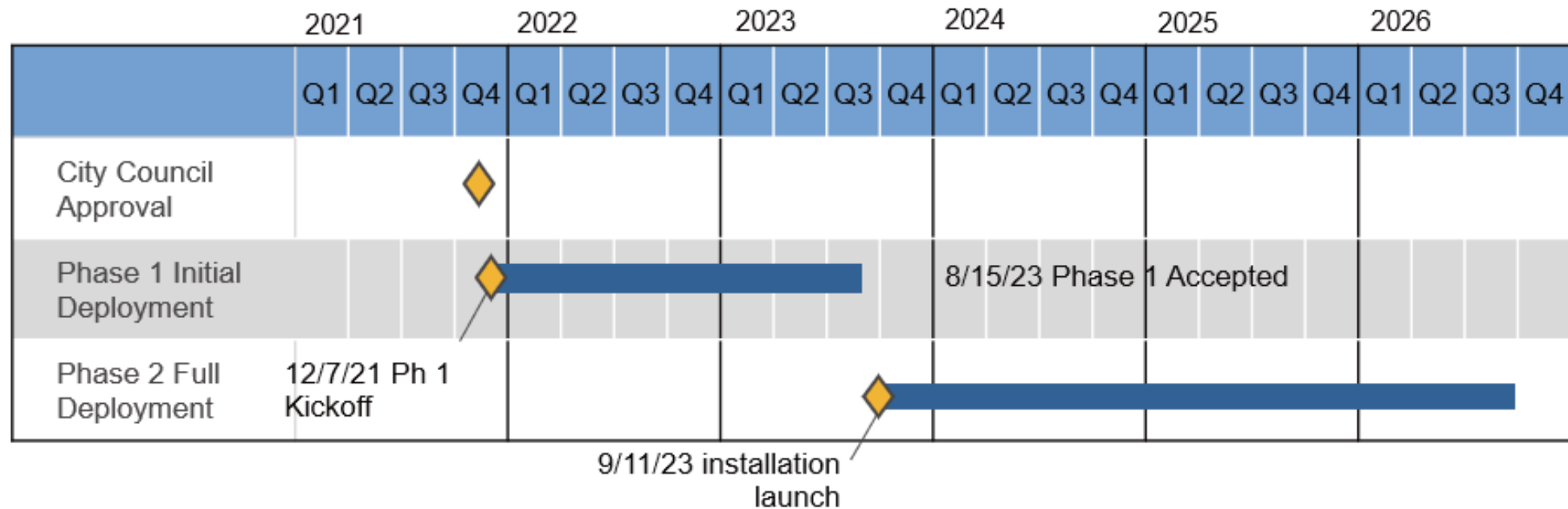 Electric
  Gas
  Water

Communication with Customers

Timely communication to customers is provided on a neighborhood basis as work progresses

- A postcard will be mailed to customers about 4 weeks before planned meter upgrade.

- After completion of the meter upgrade, a door hanger will be left with information for their review.

As with any meter upgrade, communication is conducted in a manner to allow sufficient notice to customers, uses multiple formats, and is in English and Spanish

Project Timeline

Smart Electric Meter | Smart Water Meter | Smart Gas Meter

Smart Communication

Smart Network

Smart Data

Smart Consumption

JLBARRANCO/GETTY IMAGES

Smart Metering – Frequently Asked Questions

Sensus USA Overview and Subcontractors

Sensus, a Xylem brand, provides remotely-managed products and solutions that deliver the right data at the right time for investor-owned utilities, cooperatives and municipalities. As part of Xylem's digital portfolio, Xylem's smart devices and advanced applications connect with a variety of communication technologies to help customers make timely decisions that optimize electric, gas and water systems.

- Serving the Utility Industry for over 150 Years
- Electric, Gas and Water Meter Manufacturer
- 1100+ FlexNet AMI Deployments
- 260+ Combination Deployments
- IOUs, Cooperatives, Municipalities
- 45M+ FlexNet Endpoints Deployed
- ~$1B Annual Revenue
- $100M+ Annual R&D Investment

- Provider of meter installation services
- As a major utility service contractor, UPA carries out asset inspections, surveys and maintenance for electric, water and gas companies.

- Provider of Meter Data Management System - MeterSense
- For over a decade, SmartWorks has been providing best-in-class meter data management and analytics solutions to more than 300 utilities throughout North America