



Smart Metering Project Overview

City Council consideration

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Executive Sponsors:

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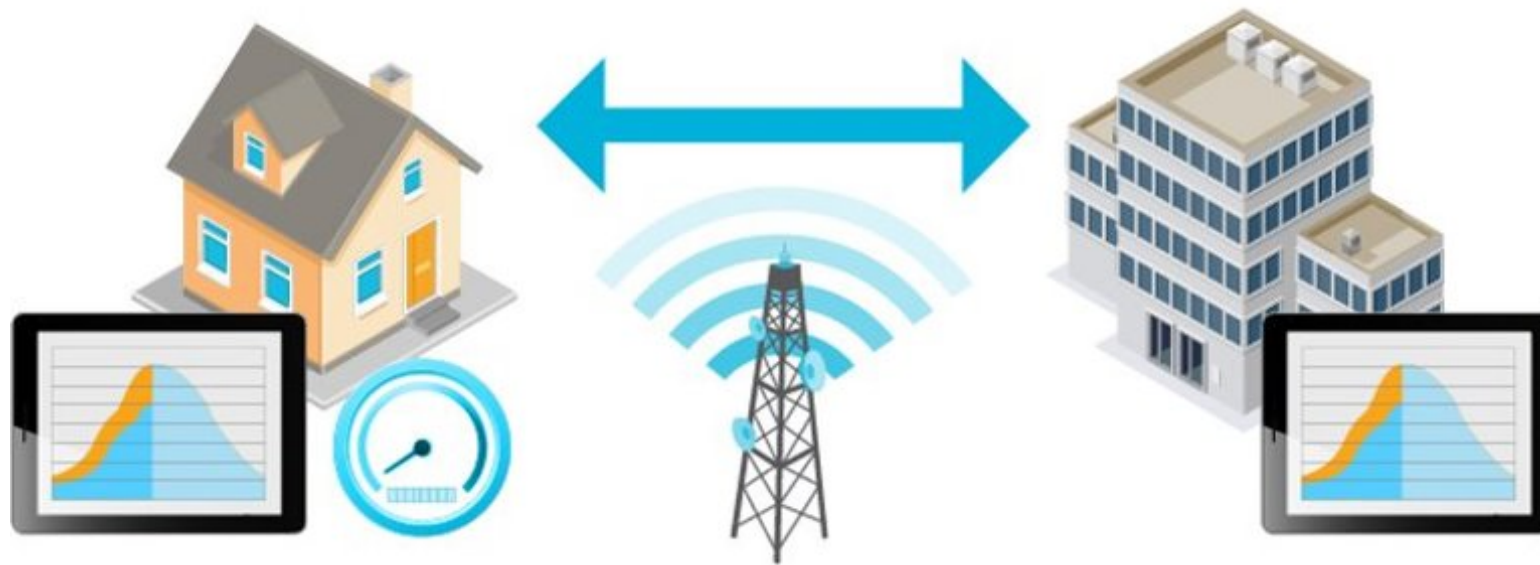
Management and Budget Director

Energy Resources Director

Water Resources Director

Advanced Metering Infrastructure (AMI)

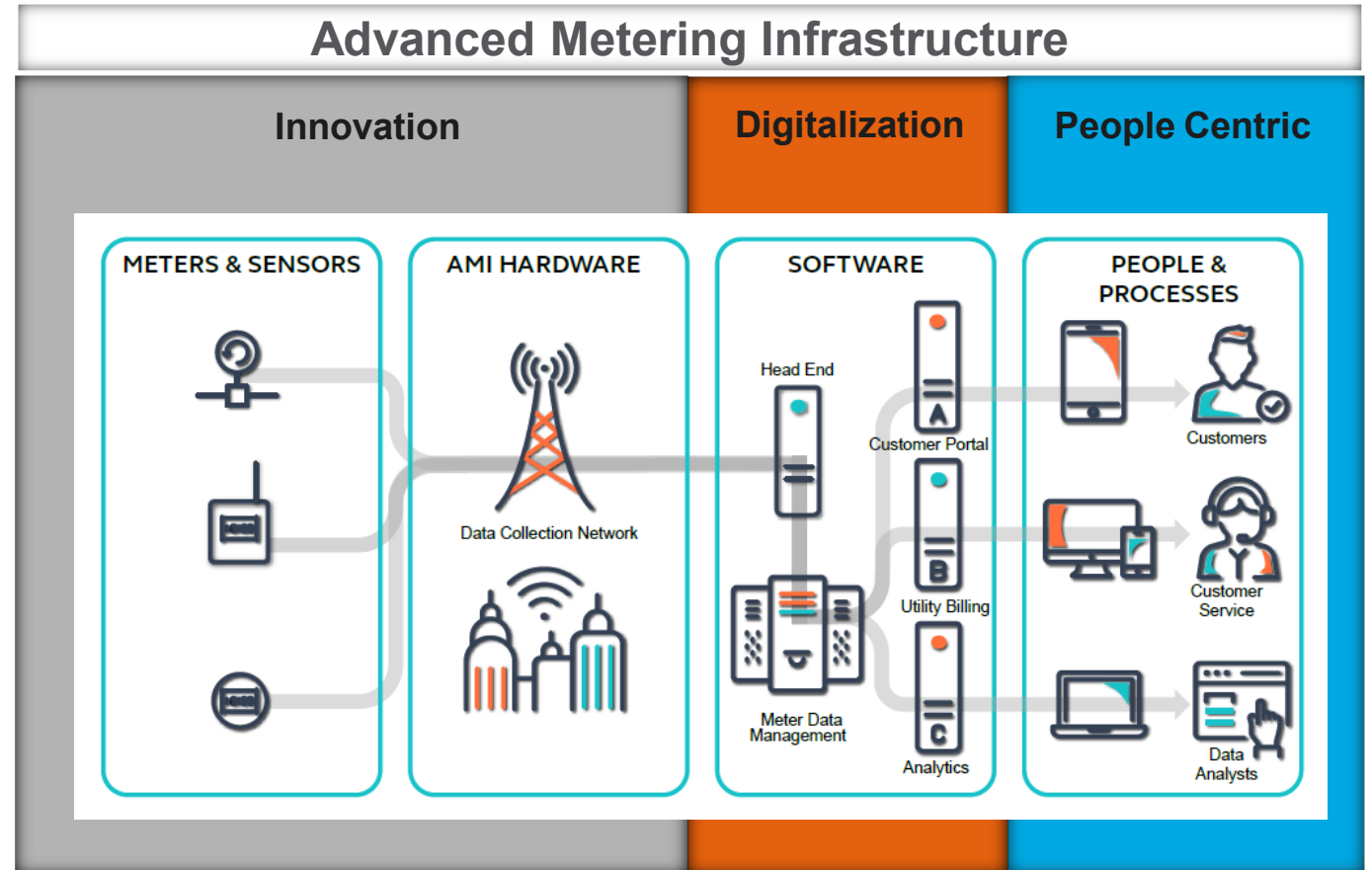
Advanced metering infrastructure (AMI) is an integrated system of **smart meters**, **communications networks**, and **data management systems** that enables two-way communication between utilities and customers



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 -



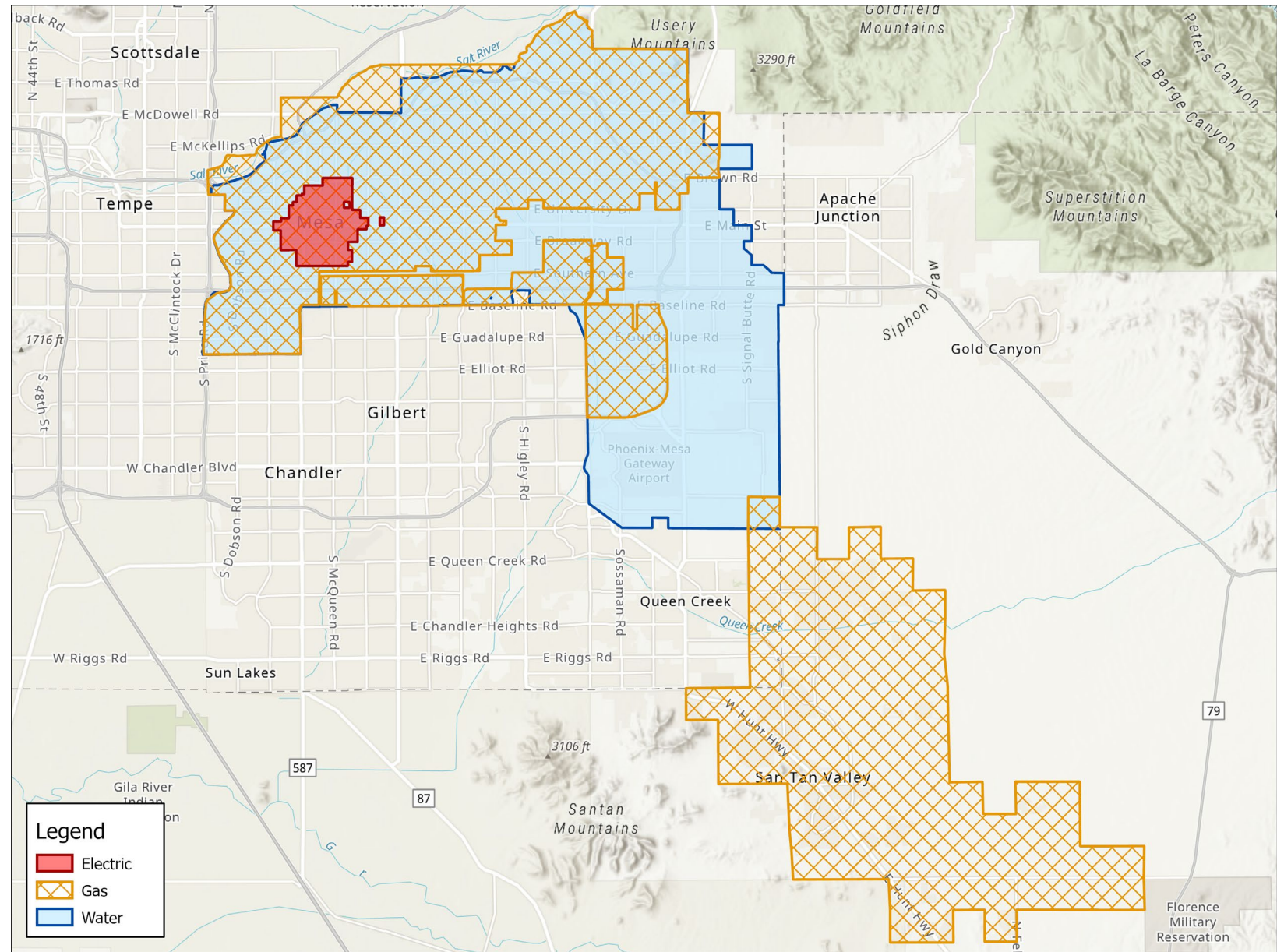
Utility Service Areas

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



Project Goals

- Align with the City's overall Smart City initiative
- Timely access to usage data for all stakeholders
- Improve or enhance Utility to customer communication
- Increased customer engagement
- Improve operational effectiveness and productivity
- Increased knowledge and response to service outages and anomalies

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

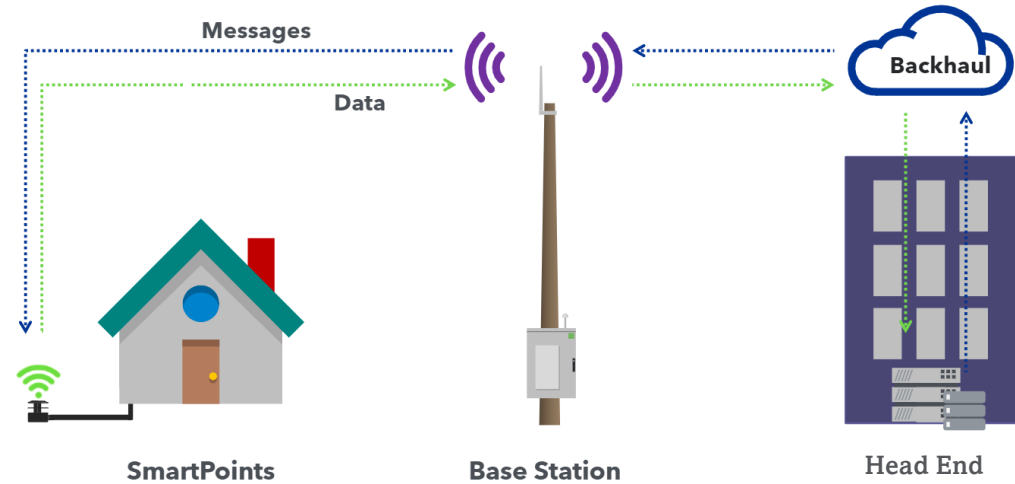
Business Services

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

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 MeterSense)

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

Project Phasing

Smart Metering Solution will be a two-phase project

Phase 1 to be completed in one (1) year including full acceptance of the system

Phase 2 to be completed in three (3) years and commences after system acceptance of Phase 1

Phase 1: Initial deployment

- Approximately 2,200 meters (combination of water, electric, and gas, various customer types and customer applications)
- Smart City technology sensors
- Software integrations developed and fully tested
- Installation of initial Base Stations (4)

Phase 2: Full deployment

- Install remaining meters/endpoints throughout City of Mesa's service territories
- Priority on completion of remaining electric meters within the first year of Phase 2
- Installation of remaining Base Stations (28)

Communication Plan

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

Cross-Departmental Team

- Representatives from: Energy Resources, Water Resources, Business Services, Public Information and Communication

Consulting Services

- Arcadis U.S. Inc (the City's consulting project management company) provided a communication consultant with experience in the Smart Metering industry and the local environment, and provides the City with situational experience from other projects

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

Sensus Contract Overview

Five-year initial term

One-time Cost Estimate for Current Meter Conversion

- Professional Services \$ 1,672,000
 - Software Implementation/Integration
 - Project Management
- Base Station/Communication Network \$ 1,042,000
- Meter/Endpoint Installation \$49,097,000
- Programming Equipment/Mobile Collector \$ 104,000
- Water meter site prep \$ 2,076,000
- Water meter lid replacement \$ 3,888,000

Sensus Contract Overview Continued

Multi-year implementation requires the need to accommodate additional services/needs over the time period

Sensus contract will be used for additional meters (with exception of ultrasonic and large commercial water meters)

- Mesa personnel will perform new/additional meter installations

One-time Contract Inclusions for As-needed Costs

• Water meter box replacement	\$ 468,000
• Service Repairs	\$ 1,330,000
• Capacity for additional meter growth (years 1- 5)	\$ 2,469,000
• Smart City/Mobile Collector devices	\$ 20,000
• Base station inventory	\$ 91,000

Sensus Contract Overview Continued

On-going Expenses (Years 1-5 Total)

- | | |
|--|-------------|
| • Two Hosted Software Packages | \$2,860,000 |
| • Cellular service for base station backhaul | \$ 80,000 |

Sensus Contract Renewal Options

Two five-year renewal options based on administrative approval

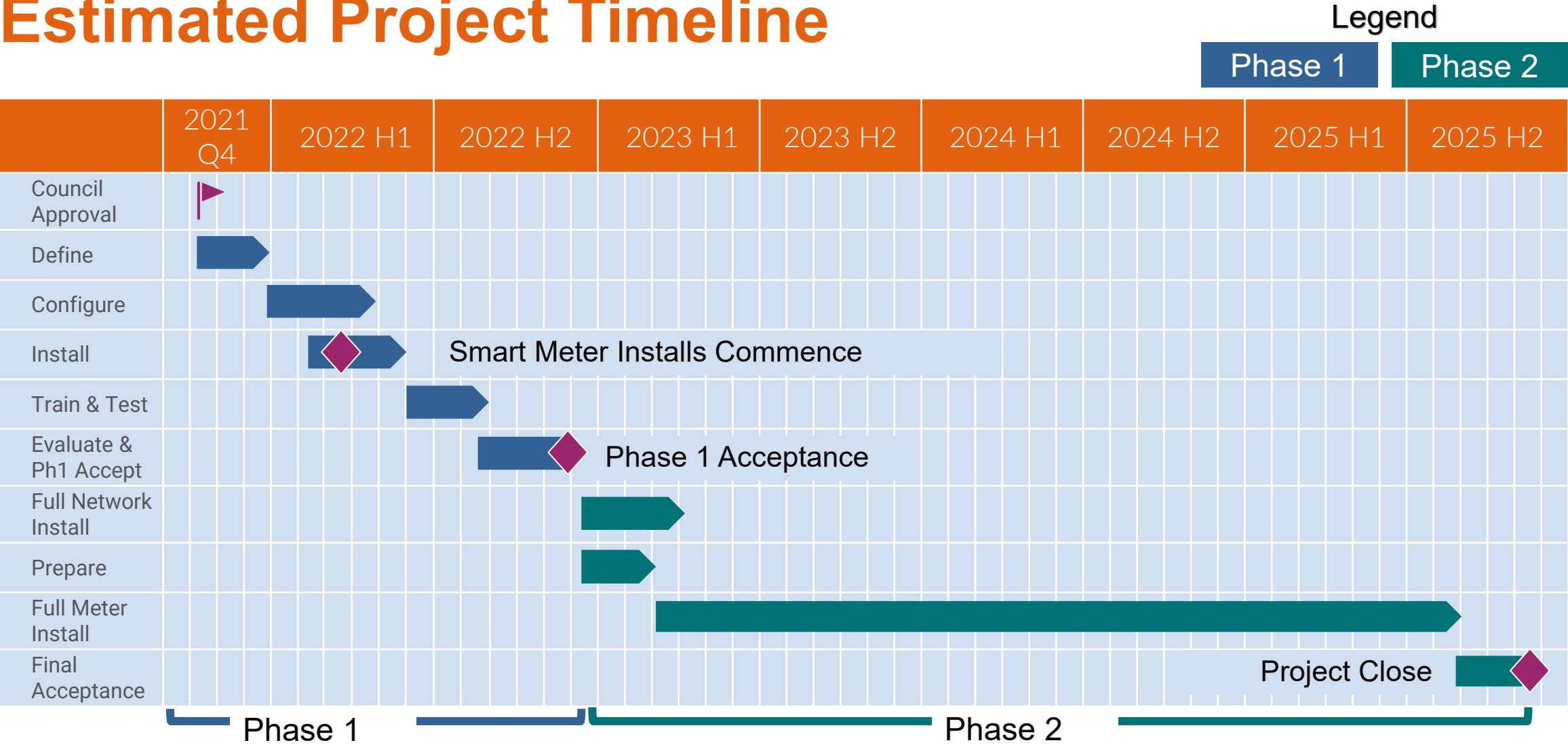
- Term 2 (years 6-10): \$8,500,000
 - Maintenance costs \$4,700,000
 - Growth meter capacity \$3,800,000
- Term 3 (years 11-15): \$10,800,000
 - Maintenance costs \$5,900,000
 - Growth meter capacity \$4,900,000

City Expenses Related to Project

The City will experience some costs outside of the Sensus contract

- Ultrasonic water meters on separate contract (1½" - 2") \$6,025,000
 - Will be installed by Sensus subcontractor
- Site prep and permitting fees for base stations locations \$ 330,000
- Hosted data warehouse \$ 22,000/yr
- Customer portal smart metering usage module \$ 36,000
- City side integration professional services \$ 103,000

Estimated Project Timeline





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

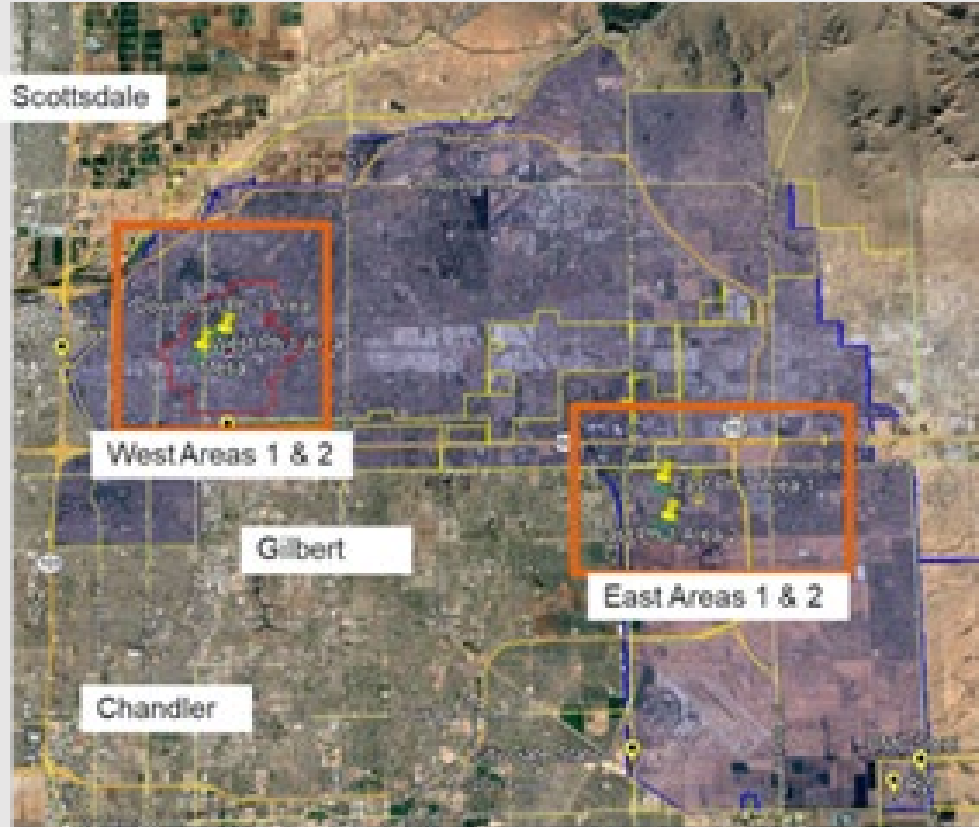
Sensus and Utility Partners of America

In the past four years **Sensus** and **UPA** have managed projects that include approximately 1,000,000 Sensus Meters and SmartPoints.

Sampling of projects include:



Phase 1 Locations



As outlined in the request for proposals (RFP)

1. East Area One (1) – Superstition Springs
 - a. This area is a more established neighborhood with water and gas service.
 - b. The water meters are old and due for replacement, so Phase I would require both new meters and MIUs.
 - c. Because the water meters are old, these meters will be important to compare data of the replacement meters with historical data tied to the old meters to get a sense of how much the older meters may have been under-reading.
2. East Area Two (2) – Morrison Ranch
 - a. This is a newer development with residents who are apt to be more “connected”.
 - b. The neighborhood is served by water and gas.
 - c. The meters are new. This area will provide the opportunity to do MIU retrofits and evaluate the success of these retrofits on the existing meters.
3. West Area One (1) – Country Club Dr & Main St
 - a. This area features water, gas, and electric utility service.
 - b. The area includes a blend of residential, commercial, and industrial.
4. West Area Two (2) – Downtown Area - Center St & University Dr
 - a. This area features water, gas, and electric utility service.
 - b. The area will use the corner of Center St and University Dr as the Northeast corner of the boundary, while adding the hotel and some City facilities such as Mesa City Plaza (MCP), Convention Center, and the Library.

Solar Installations – Net Metering – About sixty (60) premises, each has two (2) meters. A single register meter for measuring solar production and a double register meter to support net metering.