

## ADVANCED METER PROGRAM: INCREASE TO WORK ORDER AND STAFFING PLAN

# Riverside Public Utilities

Board of Public Utilities  
October 28, 2019

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## ADVANCED METER INFRASTRUCTURE

AMI is a system of:

1. Advanced meters
2. Communications networks
3. Data management

It allows **two-way communication** between a customer's meter and the utility. The system transmits near **real-time information** about usage.



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## METER DATA MANAGEMENT SYSTEM

An MDMS **validates, estimates** and **edits** the meter data to ensure the data is **accurately transferred** to the Customer Information System (CIS) for billing.



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## RIVERSIDE'S PROGRAM APPROACH

1. **Primary Goal:** maximize investment in existing meters.
2. **ERT Overlay:** install fixed network utilizing new AMI meters and collection devices to collect data from the existing meters, while providing new AMI functionality.
3. **Phased Approach:** Alpha and Beta Proof-of-Concepts, before rolling out Full Implementation.
4. **Best Practices:** utilize lessons learned from many other utilities that have already implemented AMI

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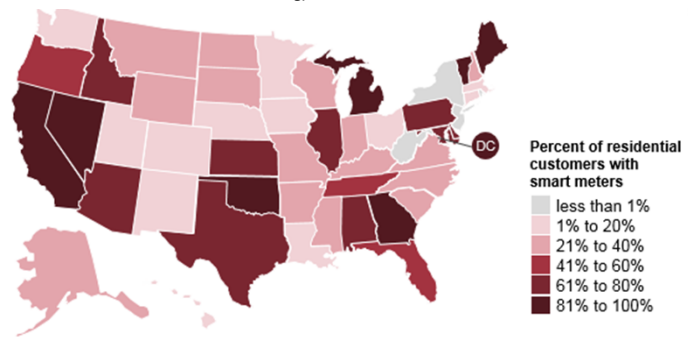
## AMI IS THE CURRENT STANDARD FOR ELECTRIC METERING

**In 2017**, there were 78.9 million electric AMI installations in the US, which is over 50% of electric customers

**By 2022**, advanced meter installations worldwide will surpass 1.2 billion

Residential Smart Meter Adoption Rates by State - 2016

Source: U.S. Energy Information Administration



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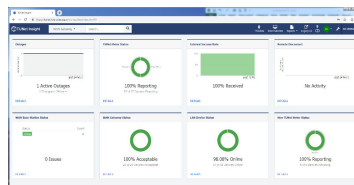
## AMI DEPLOYMENTS IN CALIFORNIA

Logos of utility providers in California include:

- ALAMEDA MUNICIPAL POWER (A Department of the City of Alameda)
- PG&E
- ACWD (Alameda County Water District)
- SMUD (Sacramento Municipal Utility District)
- CITY OF ROSEVILLE (Roseville Electric)
- SILICON VALLEY POWER (CITY OF SANTA CLARA)
- SOUTHERN CALIFORNIA EDISON
- CITY OF LONG BEACH (INCORPORATED 1897)
- CITY OF BURBANK (Water and Power Since 1913)
- ANAHEIM PUBLIC UTILITIES
- CITY OF GLENDALE (Water & Power Your Trusted Community Utility)
- AZUSA (The Canyon City)
- SDGE
- Sempra Energy utility
- PACIFICORP
- CITY OF SANTA ROSA
- CITY OF COLTON ELECTRIC UTILITY
- MORENO VALLEY ELECTRIC UTILITY
- emwd (EASTERN MUNICIPAL WATER DISTRICT)
- SoCalGas (A Sempra Energy utility)
- BEAR VALLEY ELECTRIC SERVICE
- CITY OF BUENA PARK (Center of the Southland)
- CITY OF BANNING California
- IID (A century of service)
- WESTERN MUNICIPAL WATER DISTRICT

## PROGRAM UPDATE ALPHA PROOF-OF-CONCEPT

### AMI Test Lab



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### Field Install



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## ALPHA POC ACCOMPLISHMENTS

- ✓ Installed collectors and repeaters
- ✓ Activated data routers (4 per collector)
- ✓ Installed AMI meters
- ✓ Associated AMI and ERT meters to the HES
- ✓ Retrieved on-request meter consumption and voltage readings
- ✓ Retrieved outage data

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## ALPHA POC ACCOMPLISHMENTS (CONT'D)

- ✓ Obtained electric ERT meter read data through AMI devices
- ✓ Performed remote AMI meter connects / disconnects
- ✓ Received alerts and alarms for pre-programmed events (such as high and low voltage events)
- ✓ Performed single and mass AMI meter uploads into CIS
- ✓ Validated communication device and meter coverage
- ✓ Implemented new CIS work orders

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## ALPHA POC ACCOMPLISHMENTS (CONT'D)

- ✓ Implemented new CIS electric meter install and exchange process
- ✓ Implemented new meter data download/upload process
- ✓ Implemented new reading process for existing Multi-Vendor Reading System (MVRs)
- ✓ Successful results from extensive testing of all impacted systems – CIS, HES, MVRs, hand-held device

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## COMMUNITY/CUSTOMER ENGAGEMENT CAMPAIGN

1. AMI Program webpage
2. Postcard mailer to all Alpha POC customers
3. Letter mailed to all Alpha POC customers
4. AMI Program 1-page flyer, available at all customer service locations
5. Program information sessions for RPU staff, Council Members, and City Executive Management



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## PRIVACY AND SECURITY

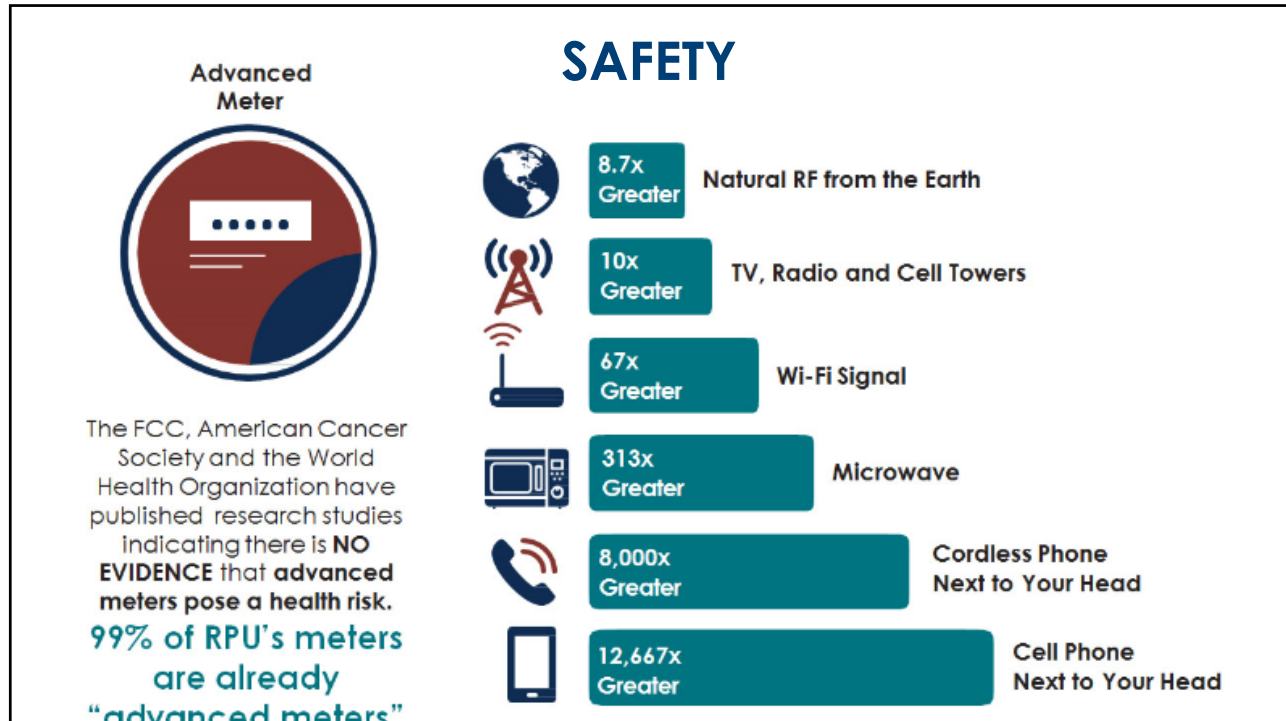
1. All aspects of security for the AMI system adhere to the latest industry standards e.g. FCC, NERC CIP, NIST, etc.
2. Security techniques employed include:
  - a. 2-factor authentication
  - b. 256-bit encryption
  - c. Access logging and audit records
  - d. Role-based permissions
3. No personally identifiable information (e.g. names, payment information, addresses, etc.) are delivered over the radio network

<https://www.riversideca.gov/privacy.asp>

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## NEXT STEPS - BETA POC

1. Install all communication devices throughout RPU's service territory
2. Install 1,000 additional AMI meters
3. Complete/test system integration
4. Configure/test customer usage web portal



## FULL IMPLEMENTATION

1. Full implementation of the “ERT overlay”
2. Full AMI network with the deployment of approximately 24,000 additional AMI meters
  - a) All commercial and industrial meters (approximately 12,500)
  - b) Approximately 12,500 residential meters
3. Fully automated electric meter reading process
  - a) AMI devices will collect data from all ERT meters

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## STAFFING PLAN

In support of the changing environment and needs of the electric utility, the Human Resources Department is proposing operational changes, as summarized below and outlined in the Master Personnel Detail:

1. Field Services Division: Eliminate 1.0 FTE Utilities Field Services Manager
2. Electric Operations Division: Add 2.0 FTEs Utilities Electric Meter Technician

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## FISCAL IMPACT

The total Fiscal Year 2019-20 impact associated with this report is \$7,228,650 as summarized in the following table:

Item	18/19	19/20	20/21	21/22	22/23	TOTAL
Tantalus AMI System	\$140,000	\$5,800,000	\$1,327,644			\$7,267,644
SmartWorks MDMS	\$47,918	\$595,732	\$319,697	\$395,665	\$395,665	\$1,754,677
EnQuesta Integration	\$100,000	\$275,000	\$0	\$0	\$0	\$375,000
Innovation & Technology Labor	\$50,000	\$230,000	\$20,000	\$0	\$0	\$300,000
Meter Test, IT and other Equipment	\$150,000	\$100,000	\$0	\$0	\$0	\$250,000
Customer Engagement Campaign	\$150,000	\$150,000	\$0	\$0	\$0	\$300,000
Contingency	\$22,082	\$77,918	\$835,000	\$0	\$0	\$935,000
<b>TOTALS:</b>	<b>\$660,000</b>	<b>\$7,228,650</b>	<b>\$2,502,341</b>	<b>\$395,665</b>	<b>\$395,665</b>	<b>\$11,182,321</b>

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## RECOMMENDATIONS

That the Board of Public Utilities:

1. Approve an increase to Work Order No. 1707248 by \$7,228,650 for a total amount of \$10,888,650 for fiscal year 2019-2020 for the second phase of implementation of an Electric Advanced Meter System and Meter Data Management System;
2. Recommend that the City Council approve changes to the Fiscal Year 2019/20 Master Personnel Detail as described herein; and
3. Recommend that the City Council approve an interdepartmental Budget Transfer of personnel funds totaling \$155,668 from the Field Services Division 601000 to the Electric Operations Division 610000.

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