

AMI Meters, Project Updates: Booster Station & Risk Resiliency

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Presentation Overview

- Review AMI Water Meter project
 - o Background
 - o Project Evolution
 - Project Update





AMI Water Meters

Overview of Water

- Water supplied by SPU
- Two, 4-million-gallon reservoirs
- Two booster pump stations
- 115 miles of watermains
- 85 pressure reducing valves (PRV) stations
- 7,866 water meters in service
 - o 1,196 meters: <5 years old
 - o 794 meters: 5-9 years old
 - o 914 meters:10-14 years old
 - o 5,052 meters: ≥15 years old



Drivers for Replacing Meters

- Aging meters
 - o 64% > 15 years old
- Improve accuracy
 - o 82% of meters read manually
- Better manage water loss
- Reduce sources of lead
- Create standard for replacing meters



Meter Options

1) Manual / Touch Read

- Requires physical visit to each meter location
- o Reading once per billing cycle

2) Automated Meter Reading (AMR)

- Radio transmitters connected to each meter
- Information obtained by driving/walking route (no need to stop at each meter location)
- o Reading once per billing cycle

3) Advanced Metering Infrastructure (AMI)

- o Radio transmitters connected to each meter (fixed network)
- o Information sent to data collection network
- o Information sent multiple times per day



Meter Evaluation

- HDR Engineering
- Looked at 5 scenarios
 - 1. Scenario 1 Manual
 - a) Mechanical meters
 - b) Solid State (electronic) meters
 - 2. Scenario 2 AMR (1 year deployment)
 - 3. Scenario 3 Mechanical AMI (1 year deployment)
 - a) Standard power
 - b) High power
 - c) Network as a service
 - 4. Scenario 4 Mechanical AMI (3year deployment)
 - 5. Scenario 5 Electronic AMI (solid state meters)
- Analyzed and evaluated meter options



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Cost Model





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Comparison of Models

	Parameter	Manual Read	AMR Mobile System	AMI Fixed Network
Notoci	"Freeing up" of Staff Resources		+	++
: Strongly negative impact	Resolution of Available Data		+	++
-: Negative impact	Support of Conservation Activities	0	+	++
0: No impact	Support to Leak Adjustment Processes	-	+	++
+: Positive impact	Utility "Visibility" to Customers	+	0	
++: Strongly positive impact	Meter Access/Reader Safety	-	+	++
	Public Perception (Technology vs. Manpower)		++	++
MBRCBRIG	Environmental Impact (Carbon Footprint)	-	-	++

CITPO

Summary of Analysis

Quantitative (Costs)

- Manual Read has lowest 20-year cost
- AMR costs similar to Manual Read
- AMI has higher costs • All options all have similar costs
- 20-year present value costs for AMI are ~33% greater than Manual Read

<u> Qualitative (Benefits)</u>

- AMI has higher costs, but significant benefits
 - Monitoring and managing water demand
 - Supporting leak detection and other conservation goals
 - Providing real-time information to support customer service
 - Customer portals to support customer water use tracking



AMI Meters

- RFP in June 2019
- Scope of Work
 - o Furnish/install meters & transmitter units
 - o Furnish/install AMI data collection system
 - o Furnish Meter Data Management System
 - o Integrate AMI system w/ City's billing system
- Received 9 proposals
- Pilot Study
- Selected Ferguson/Sensus



Next Steps

- Contract negotiations
 - Contract Finalization complete in June 2021
- Propagation Study
 - Evaluate placement for transmitter units
- Construction starting in Q3 2021
- Construction considerations

Questions?

