SFPUC’s Automated Water Meter Program
San Francisco’s meter deployment and customer engagement
July 21, 2015

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Presentation Points

- SFPUC & Automated Water Meter Program Overview
- Customer Engagement
- Challenges / Lessons Learned
San Francisco Water, Power, Sewer

**Water System Components**

- 280-plus miles of pipelines
- 60-plus miles of tunnels
- 11 reservoirs
- 5 pump stations
- 2 water treatment plants
2.6 million depend on SFPUC water supply

- 27 wholesale water agencies
- SF Retail water, power, sewer
  - 178K customers
  - Mostly residential in meter pits
  - 750 Large/CII meters
Automated Water Meter Program

- Approximate Cost $60M
- Upgrades SFPUC’s 178K manual-read water meters with wireless fixed-network meter reading technology
- Replaces old water meters with new, more accurate equipment
- Provides high-resolution hourly consumption data through daily network transmissions
- 81 Data Collectors
- Three phases of work, January 2010 – July 2013
- Returned Installations yet to be installed, 3-year installation timeline
- Improved Customer Service with Daily Data Sharing & Leak Notification Program
Project Drivers

- Meter Replacement Program
- Water Conservation
- Monthly Billing
- Customer Level of Service – PG&E Program
- $1M Pilot for AMR in “Lockouts”

Business Case for AMI, ~8 year payback with 3 Key Monetary Benefits:

Revenues:
- Meter Accuracy
- Lower Leak Allowance

Expenditures:
- Costs Avoided

Saves Water, Improves Customer Service, and Reduces Operating Costs
Project Timeline

**Planning**

- Oct 06 - Jul 07 Business Case
- Oct 07 - Feb 08 Technology Research & Specifications
- Sep 08 - Feb 09 Proposal Evaluations

**System Deployment**

- Mar 09 Commission Approval
- Mar 10 Network Installation
- Jan 2010 Notice of Contract Award
- Oct 10 System Testing Complete
- Oct 11 System Testing Complete
- Jun 10 - Oct 10 Pilot Phase 11K meter milestone
- Nov 10 - Aug 11 Work Phase I 58K meter milestone
- Jan 12 - Jul 13 Work Phase II 170K meter milestone
- Oct 13 - Oct 14 Warranty Field Work
- Oct 14 System Testing Complete

**System Deployment (continued)**

- Aug 13 - Oct 13 Warranty Field Work
- May 14 Launch of My Account Daily Water Use Sharing
- Jul 14 - Mar 15 Nonconformance Site Corrections
- Apr 15 Notice of Contract Completion
- Feb 15 - Jul 18 Work Phase III Returned 5% Meter Deployment (Estimated)
- August 2013
- July 2018
System Deployment Strategy

Deployment Design

Internal Coordination
- Project Management Team
- Customer Service
- Operations
- Meter Shop
- IT Services

Contractors:
- Turnkey Solution
- Installation Phases
- Milestone System Acceptance Testing
- Thoughtful Planning - Clear Roles & Responsibilities
- Tight Contract

Contractor Expectations on Utility Project Team
- Information Exchanges
- Field & Customer Challenges
- IT Needs
System Deployment Strategy

- **Deployment Management Tools**
  - Stay in sync
  - Validate progress payments
  - Manage contract expectations for TAT
  - Track work not yet completed

- **QA Program**
  - Site work, equipment, data and work orders
Deploying & the Customer Impact

- Installation Notification
- Website FAQs
- Installation Video
- Brochures/community meetings/Press releases
- Dedicated Communications staff
  - Opt out requests
  - System accuracy concerns
  - RF Safety
  - Installer confirmation
  - Broken pipes & claims
Let them know you’re coming

What is the Automated Water Meter Program?
The Automated Water Meter Program will replace your old meter with a new technology that enables meters to be read remotely. The SFPUC will receive your hourly water meter readings four times per day without visiting your property, providing better customer service and faster leak detection.

How will I know the Automated Water Meter technician has visited my home?
You will be notified with a door hanger that your meter was successfully upgraded or that an appointment will be required to gain access to your meter. In most cases, employees will change out water meters between 7:00 AM - 5:00 PM. For your safety and security each technician will carry an SFPUC picture ID card.

Will the Automated Water Meter technician need to turn off my service to install the new meter?
Typically an installation will require a 10-15 minute interruption of your water service. The technician will make sure that your service is back on before leaving.
NOTE: Property owners please inform tenants of disruption of water service.

We appreciate your cooperation as we work in your area. If you have any questions or need additional information, please call us toll-free at 1-877-836-6444 or visit sfwater.org/watertems
My Account - Sharing Meter Usage Data

Providing high-quality, efficient and reliable water, power and sewer services 24/7

My Daily Use

Water usage evenly distributed over the period when meter read data was not fully available. Learn more.

Call to Conserve

As California’s drought continues, now is a great time to find and repair water leaks.
Click here for simple do-it-yourself repairs that can quickly pay for themselves.

Your Dollars At Work

Our 40 hours per day, 7 days per week operations and maintenance are 100% funded from the bills you pay.
Learn how your dollars are at work every day.

Featured News

Get caught up on current events and check out our newsletter!

Download Report

Monthly Billed Use

Monthly billed use displays the water usage reported on bills you have already received.

Daily Use

Daily use displays more recent water use not yet validated or reported on your bill.
Daily use data available starting on May 3, 2014.
Click here if you do not see a Daily Use page.

Automated Water Meters

The automated water meter is installed at your service address and meter readings are transmitted.
Leak Notification Pilot Program

You may have a LEAK!

Important Notice Regarding Your Water Account.

¡Usted puede tener una fuga de agua!
Aviso importante sobre su cuenta de agua. Si necesita asistencia en español llame al (415) 551-3000.

你家中可能有漏水!
有关你自來水帳戶的重要通知。如果您需要中文協助，請致電 (415) 551-3000。
A recent automated review of your water meter data* has shown continuous water use at your property.

This means the water flowing through your meter and into your home plumbing never stops – even in the middle of the night when most people are sleeping. This may indicate you have a leak.

**We advise you to:**
- Inspect toilets, showerheads, faucets and outdoor irrigation for leaks
- Make simple fixes yourself or call a plumber; visit our website for tips on identifying common plumbing leaks
- Register for MyAccount.sfwater.org to view your daily water use

**Visit sfwater.org/homeleaks for more information and resources:**
- Do-It-Yourself Repairs • Conservation Checklist
- Free Select Repair Parts • Fixture Rebates
- Water-Wise Evaluations

*This notice has been sent as a courtesy. Residents are responsible for resolving plumbing leaks in their home in a timely manner.*
Challenges / Lessons Learned

Yesterday or Tomorrow
• Which model to use and is it okay to change your mind halfway?

Field surprises
• Deferred maintenance
• Records inconsistencies
• Meter configurations- gaskets, sample ports
• Rats like MTU wires!
• Meter Pits are not pristine
Challenges / Lessons Learned

Internal Requirement Awareness

- CIS system to accept work orders & MTUs
- CIS inventory requirements
- Meter box and lid specifications
- IT systems need constant attention and careful planning

If you look hard enough you WILL find performance issues

- How much can you live with?
- Do you have well defined specifications up front and legal support to help you address issues appropriately
Challenges / Lessons Learned

Managing the Data
- Hourly meter reads for 178,000 accounts = 1.6 Billion reads/year
- Resources to manage the system internally vs hosting
- AMI Data is provisional
  - Synchronization with CIS information
  - Missing work orders or programming records
  - Read aggregation for multi-meter accounts and compound meters
  - Errant meter readings and automatic triggers
  - Missing read periods
- Managing the expectation of “real-time” data
  - Network outages and late transmissions
  - System data parsing and processing requirements

Maintenance
- How easy is it to translate the meter reading data into field work orders?
- Are you staffed for the increased maintenance needs and prepared to face the consequences if not?
- When will you start proactive maintenance and how does the AMI system life and technology advancements affect that?
Questions?

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