This presentation premiered at WaterSmart Innovations

watersmartinnovations.com
Advanced Metering Infrastructure

Creating a Successful Business Case
Overview

- Technology Review
- Study Process and Results
- Recommendation
AMI Team

- Consultants – Experts in the Field
  - Don Schlenger, Brian Houston, Patrick Hayes

- City of Santa Rosa Team Members
  - Utilities Operations
  - Water Use Efficiency
  - Information Technologies
  - Utility Billing
  - Utilities Finance Team
  - Board of Public Utilities Member
Meter Reading Options

- Traditional Reading (manual & TouchRead®)
- Automated Reading (AMR –drive by)
- Advanced Metering Infrastructure (AMI)
Santa Rosa’s Meter Reading History

Past
Manually read meters

1998
AMR (drive by) implementation began

2001-2012
Over 15,500 AMR (drive by) meters installed

Future?

Status Quo:
Continue AMR implementation -or-

Update Approach:
Implement AMI
AMI Components

- Radios (MIUs) at each Meter
- Radio receivers (DCUs) forwarding readings
- Central computer collecting data
- Database (MDMS) organizing & analyzing data
- IT interfaces to existing systems, customer portal
Three Tiers of AMI Benefits

1st – Tier Basic Benefits From Automation

- Reduced truck rolls
- Improved worker safety
- Accurate billing
- Constant billing periods
- Eliminate re-reads, etc.
- Improved worker safety

2nd – Tier Benefits from Process Reengineering

- Customer self-service, etc.
- Meter management
- Personalized notifications
- Zone analysis
- Non-revenue water analysis
- Cost-effective planning
- Enhanced customer service
- Customized monthly billing
- Personalized notifications
- Accessible monthly billing
- Enhanced customer service
- Customized monthly billing
- Personalized notifications
- Meter management
- Customer self-service, etc.
- Meter management
- Customer self-service, etc.

3rd – Tier Benefits Incorporating Industry Best Practices

- Proactive system optimization
- Zone analysis
- Non-revenue water analysis
- Cost-effective planning
- Enhanced customer service
- Customized monthly billing
- Personalized notifications
- Meter management
- Customer self-service, etc.
Santa Rosa’s AMI Model

Financially

- Staff was aware we would be entering a break even scenario
  - water loss is low in the City’s system
    - City of Santa Rosa
      - 6.3%
  - accurate meter reading

- Very conservative estimate
  - break-even over life of project

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Business Case Process – Data Review

- Business Operations
  - Metering practices
  - Field operations costs
  - Customer service costs
  - Standard Operating Procedures

- Workshops
  - Process Analysis & Redesign
  - Software & IT Needs
  - Risks & Implementation Considerations
  - Triple-Bottom-Line
Business Case Process

Financial Model
- Capital Costs
- Management Cost
- Maintenance Costs
- Operational Savings
- Life-Cycle Evaluation
- Internal Rate of Return
AMI Benefit Analysis - Financially

- **Savings in Operations**
  - eliminate routine field meter reading
  - 25% lower call center volume
  - 39% fewer field work orders
  - streamlined Water Use Efficiency (WUE) audits

- **Savings in Programs**
  - meter replacements
  - AMI-enabled conservation offsets WUE rebates

- **Revenue Increase**
  - improved metering accuracy due to correctly sizing meters
AMI Benefit Analysis – Triple Bottom Line

- Lower GHG emissions
  - 1,000,000 pounds over project life
    - 39.5 tons/year

- Water use efficiency
  - early detection of leaks
  - water shortage tracking
  - water budgeting / e-notification

- Customer satisfaction
  - minimize high bills
  - proactive issue resolution
  - customer portal / e-notifications
Customer Portal

My Water Usage Over the Last 30 Days

My Progress

Am I Using Less?

Usage this month to date: 26 m³
Usage last month to date: 22 m³

You've used 4 more m³s compared to last month.

Library

If you replace your Washing Machine...

Most front-loading machines are energy- and water-efficient, using just over 20 gallons a load, while most top-loading machines, unless they are energy-efficient, use 40 gallons per load.

Read More...

Water Rates

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<tr>
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<tr>
<td>Tier-3</td>
<td>150¢</td>
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Water Conservation
AMI Benefit Analysis – Triple Bottom Line

- Employee satisfaction
  - better customer relationships
  - empower CSRs to resolve concerns with live data
  - sewer caps easily set
  - WUE able to base analysis on detailed data

- Planning efforts
  - demand detail supports informed design
  - offsetting future needs

- Simplified rate cases
  - ease of developing & applying tiers
  - constant billing cycles (30-31 days, not 28-35)
Recommendations

On the basis of...

- City is already incrementally implementing AMR

- Benefits of AMI outweigh those of AMR
  - economically
  - socially
  - environmentally
Recommendations

Consider...

- System-wide AMI implementation
- Begin development of vendor RFP and planning
- Complete deployment of manually read meters ASAP
- Replace or retrofit remainder of meters with staff
Questions ?