AMI Implementation Plan Update

Operations Committee

May 20, 2022

Background

Advanced Metering Infrastructure (AMI)

- Educational tool to provide customers further opportunities to use water wisely

- System Components
  - Hardware
  - Software
  - Communications network

AMI Benefits

- Fits into organizational goal of advancing water efficiency
  - Contributes to demand reduction
- Customer access of real-time water use data results in increased water conservation
  - **When** customers sign up for an AMI data portal
    - AWWA report saw an average 6 to 12% decrease in daily water use
    - Customer notifications to reduce winter irrigation following storm events

AMI Benefits

- Timely leak detection
  - AMI Pilot program ≈ 5,000 meters

Year	Large Leaks (>3000 gpd)	Small Leaks (<3000 gpd)	Estimated Savings (AF)
2020	28	1,243	87
2021	210	1,047	216

- Pilot program analysis estimated an annual leak detection savings of up to 500 acre-feet per year
- Useful tool during emergencies and other disasters

Total 57,816 Gallons

Daily for November, 2018

Water Loss Prevention
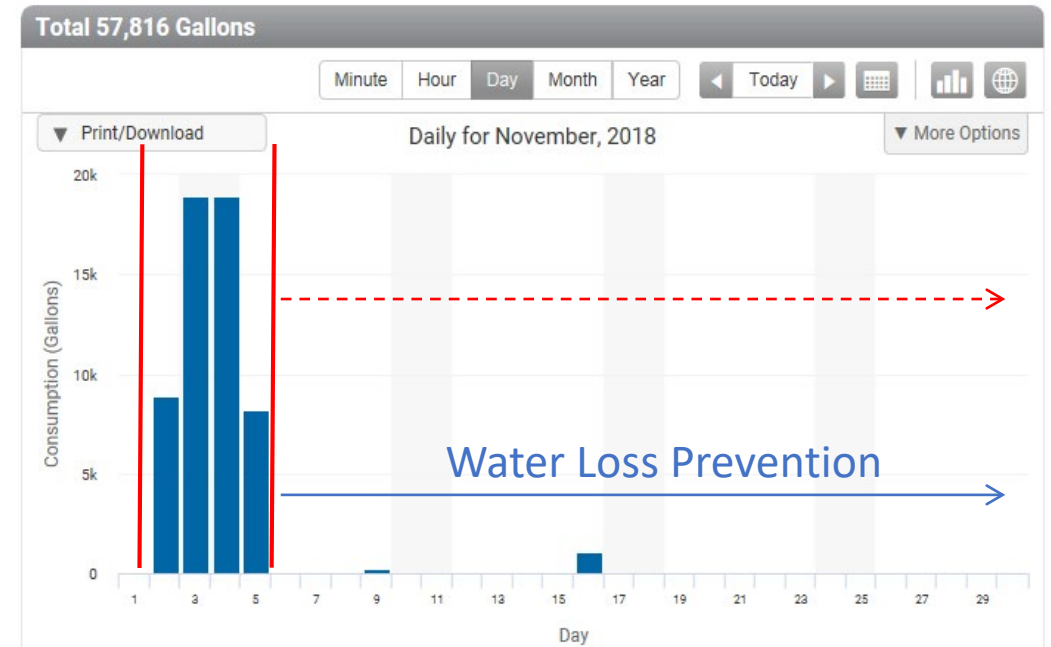
Irrigation Meter Leak: Next meter read was December, potentially resulting in additional 630,000 gallons of water lost (1.9 acre-feet)

System Wide AMI Roadmap

thru 2019

2020

2022

2023

2024

Cellular AMI
~5,000 Cellular Endpoints deployed primarily funded thru $2.5M in grants

Feasibility Study
Multiple options and technologies evaluated

Implementation Plan
Integrates organizational recommendation, technical and financial reviews

Contract Development
Vendor Contracts Final Bid Packages

Construction and Integration
System-wide installation from end points to data collection & management

Current and Future AMI Efforts

- **Prepare Implementation Plan (Current Work)**
  - Agreement with E Source to develop an AMI Implementation Plan:
    - Current system Assessment
    - Financial analysis
    - Business process impact assessment (ie. Refinement of existing processes)
    - Implementation Schedule
    - Final Implementation Plan June 2022

In progress

- **Phase 2 - Development of Request For Proposals (Future)**
  - Develop an RFP to solicit vendors and select preferred vendor

- **Phase 3- Installation of System-wide AMI (Future)**
  - Implement AMI throughout the District's Service Area; includes software and hardware integration to collect and use data

Implementation Plan

Current System Assessment

- Reviewed processes and policies
  - Billing, Meter Reading, Water Efficiency, IT, Operations

- Review Technology and State of the Industry

- Developed AMI Architecture Diagram

Top AMI Goals
Utilize AMI data to support and optimize conservation programs
Provide timely leak notifications for customers through direct notification (text, email, call)
Enhance customer engagement through an intuitive customer portal

Technology Review

- Majority of AMI value is from the data
  - Early leak detection, including customer notification
  - Increased water conservation
  - Early error and tamper alerts
- Understanding of AMI system components
  - Not strictly a meter replacement project– its an enterprise technology upgrade program
  - Hardware and software for: meter types, meter data management system (MDMS), customer engagement platform

AMI Solution Architecture Diagram

March 2022
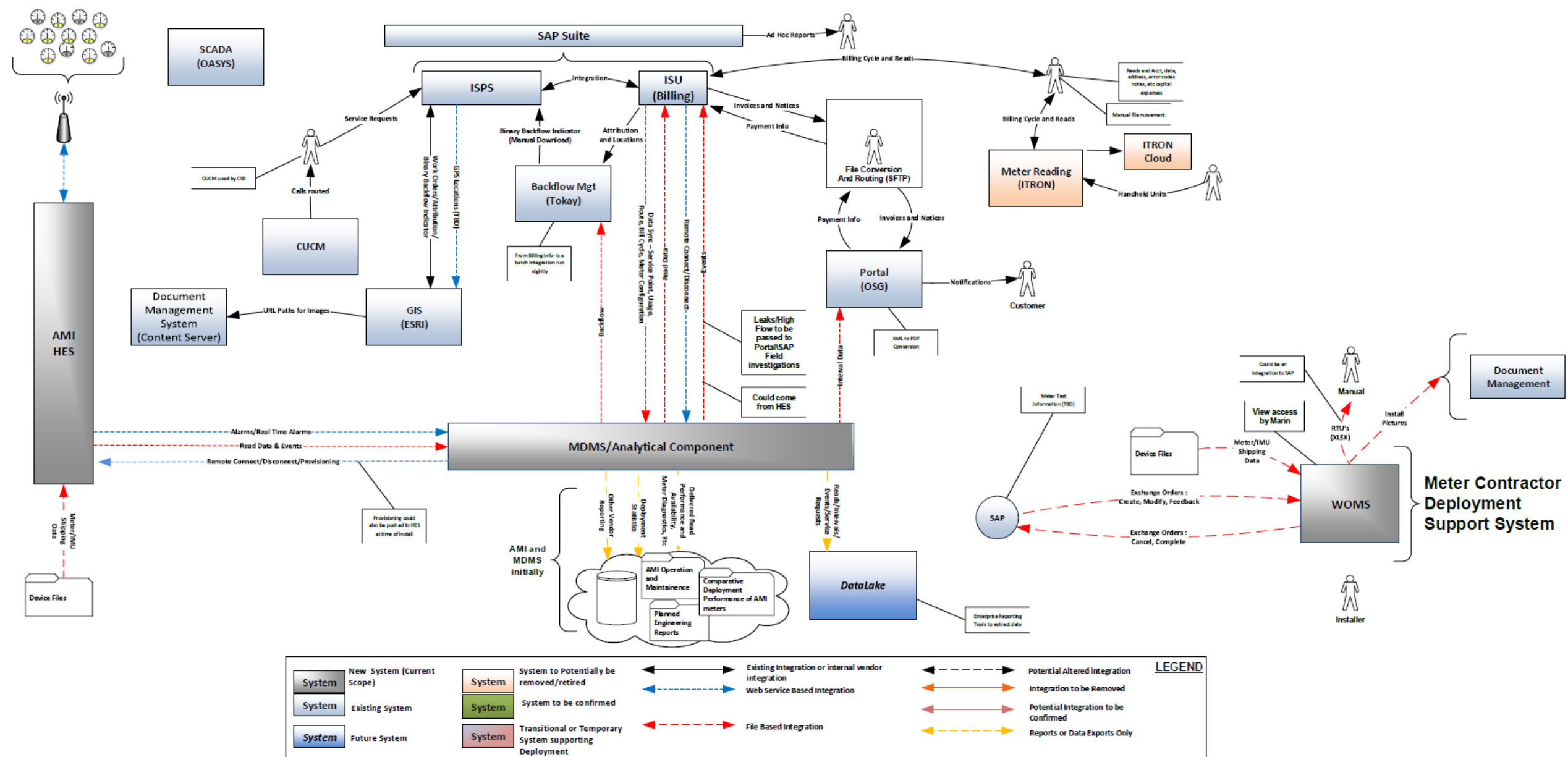
Financial Analysis

- Capital cost estimate $20-25 Million
  - Meter equipment, network infrastructure, labor, hardware, software integration

- Financial benefits
  - Improving billing accuracy, water loss conservation, reducing leak adjustments, eliminating re-reads and move out/in reads
  - Initial analysis shows pay back in 14-15 years

- Conservation benefits
  - Demand reduction, conserves existing supply

Business Process Impact Assessment

Operations Impacted	Impacts
Billing	• Fewer estimated bills • Eliminate rereads
Customer service	• Data will help with high bill questions and leak detection • Eliminates move-in/move out reads
Meter Reading	• Visit meters once a year for maintenance versus every other month • New tasks such as investigating tamper alerts and low batteries
Water Efficiency	• Increased water conservation • Additional data and tools to enhance conservation programs
Technology	• Meter Data Management System • Customer Portal

Remaining Tasks

- Financial Analysis

- Implementation Schedule
  - System-wide implementation estimated to take 3 years
    - Year 1 – Initial deployment
    - Year 2 & 3 – majority of meters retrofitted and replaced

- Final Report – June 2022

Final Report – June 2022

- Detailed summary of each task

- Cost estimates
  - Meters and other hardware
  - Installation labor
  - Software integration

- Hardware and Software recommendations

- Preliminary specifications

Next Steps

- Complete Implementation Plan

- Develop AMI specifications and RFP

- Pursue grant funding
  - Applying for $5M WaterSMART grant, matching funds required

- Confirm relative priority and funding
  - Release RFP
  - Select vendor to implement system-wide AMI