Infrastructure Asset Management (I AM) San Diego

Halla Razak, Director of Public Utilities Department

October 18, 2016

The City of SAN DIEGO

I AM SAN DIEGO

- 1.37M Population
- 8th largest City in US, 2nd largest in CA
- Annual Operating Budget: $3.3B
- CIP Program will grow to $530M per year

Infrastructure valued at $9.7B

Water Systems

Transportation

Facilities

Storm Water

I AM San Diego will create a comprehensive system to transform the way the City plans, prioritizes, and delivers maintenance work and capital projects

Overview of Public Utilities

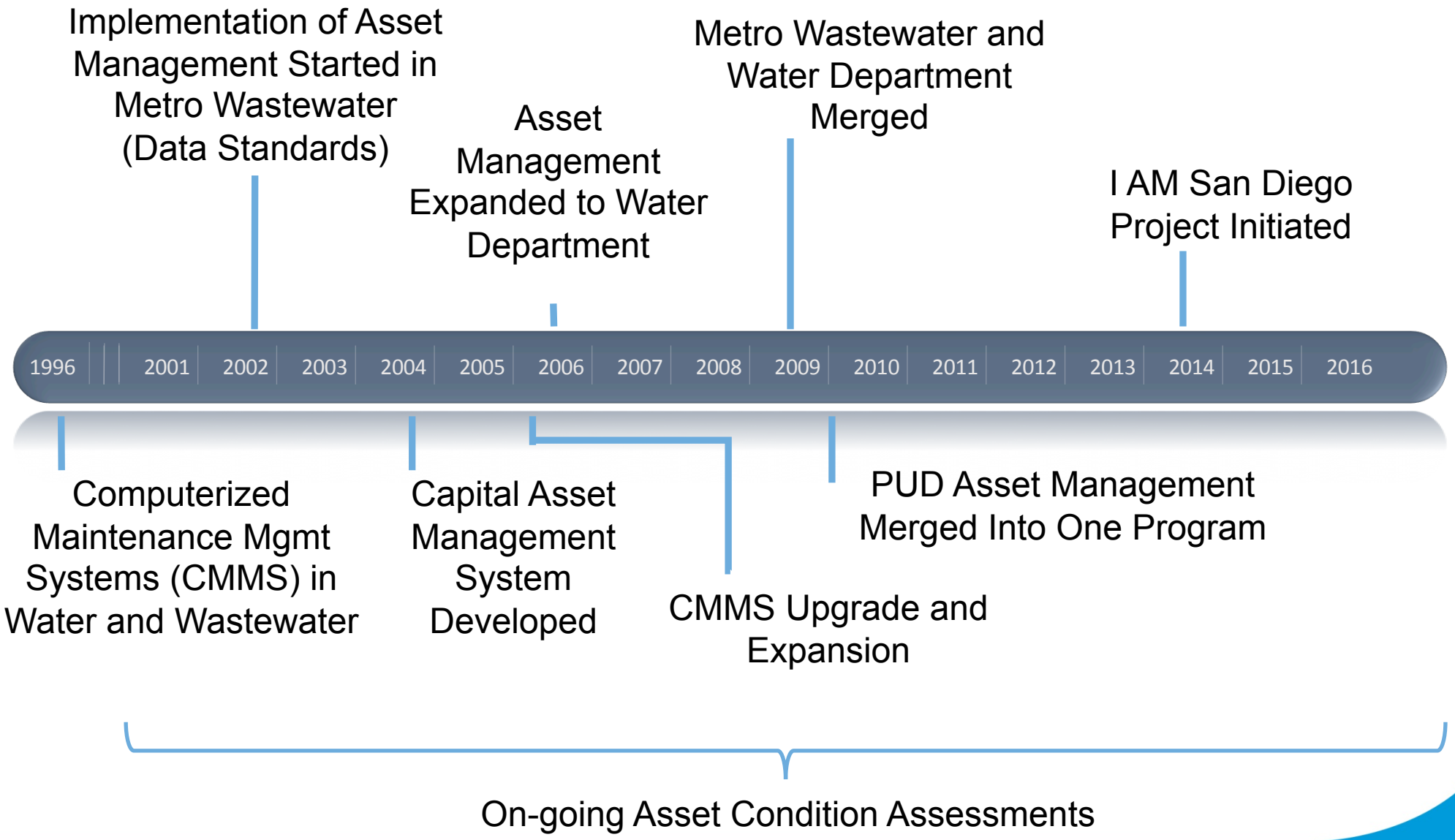
- 1600 employees

- Water
  - 3 Water Treatment Facilities– 294.2 MGD capacity
  - 49 pump stations
  - 31 storage facilities
  - 3,213 miles of pipeline

- Wastewater
  - 1 Wastewater Treatment Facility – 240 MGD capacity
  - 2 Water Reclamation Facilities
  - 84 pump stations
  - 3,000 miles of sewers

Current EAM Systems - 3 primary applications, plus a host of supporting applications

History of Asset Management



Benefits of I AM San Diego

- **Increased efficiency** in asset maintenance through well coordinated work planning and scheduling
- **Greater accessibility** to condition information and asset performance data
- **Improved effectiveness** in budgeting, planning, coordination, and execution of capital projects
- **Reduced lifecycle costs** for infrastructure
- **Effective investments** based on real priorities to make the most of our limited resources
- **Empowered employees** enabled with state-of-the-art technology solutions to perform their work

The core component of the project is the expansion of the City's SAP environment to include Citywide Enterprise Asset Management (EAM)

I AM San Diego

TRANSPORTATION & STORM WATER

City of San Diego
PUBLIC UTILITIES
Water & Wastewater

Department of Information Technology

CITY OF SAN DIEGO
PUBLIC WORKS
DEPARTMENT

Potential Future Phases

- Environmental Services
- Fleet Services
- Real Estate
- Park & Recreation
- Fire-Rescue
- Library
- Police

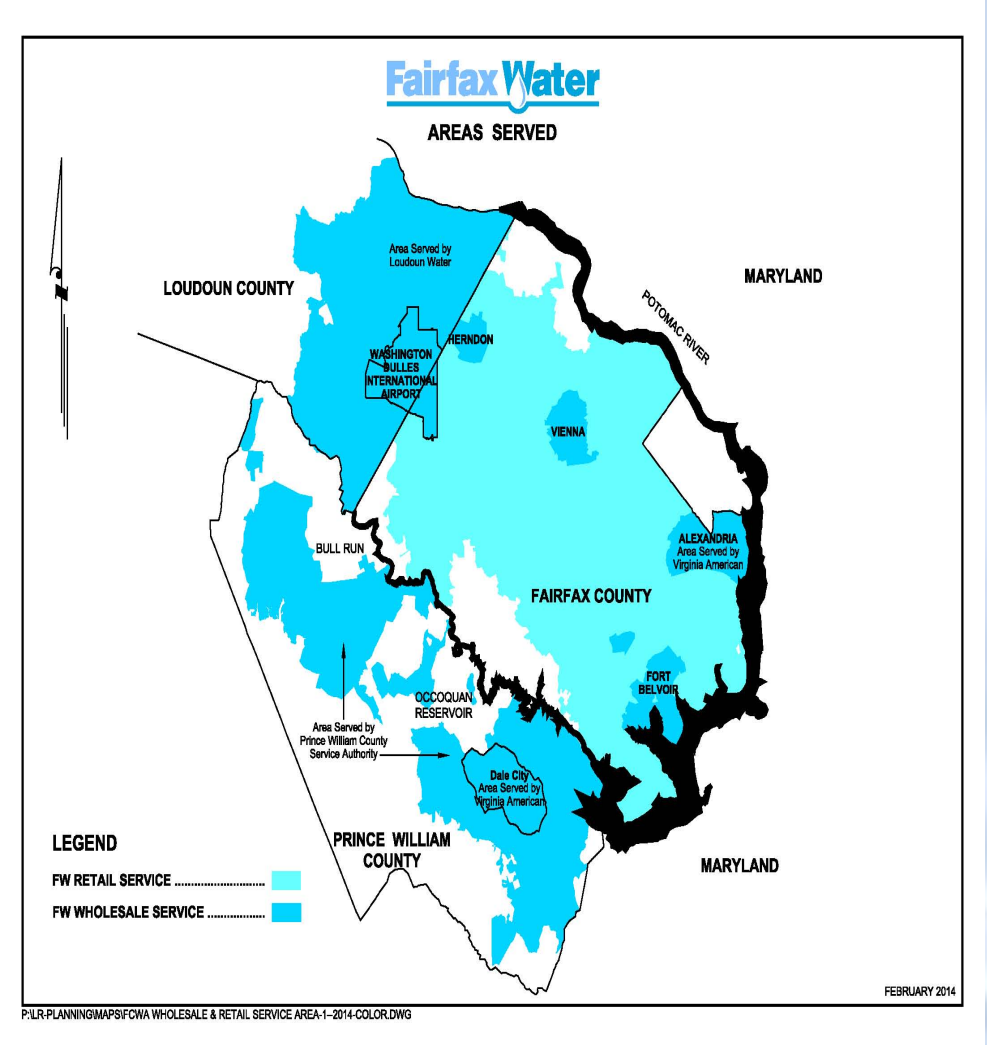

SAN DIEGO

Implementation and Experience with Enterprise Asset Management

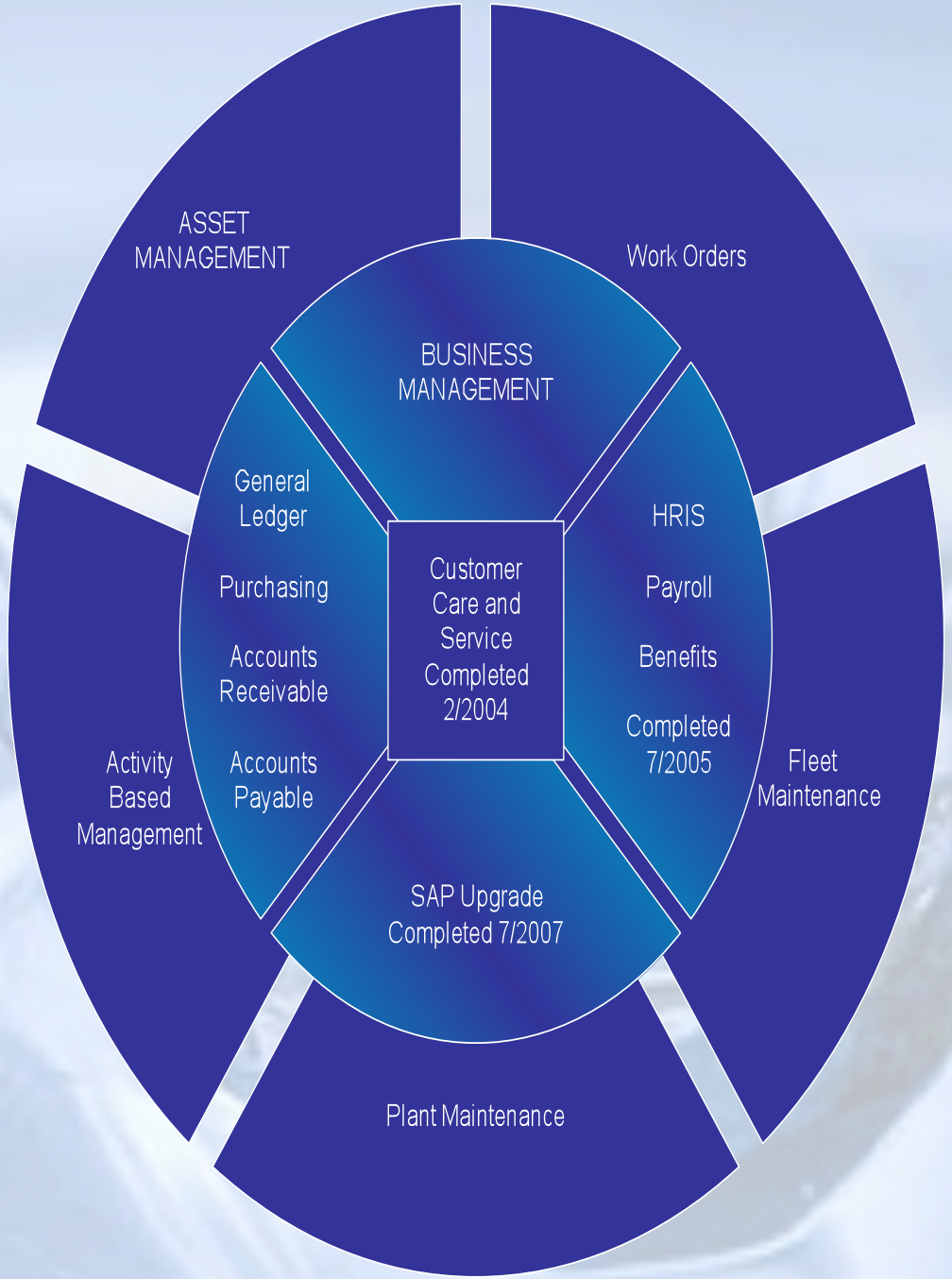
Joel Thompson
Fairfax Water

Background on Fairfax Water

- Fairfax County, Virginia, just outside of Washington, DC
- Drinking water only
- Non-profit public utility
- 2 million customers in Fairfax and neighboring counties via wholesale
- Corbalis Water Treatment Plant – Potomac River
- Griffith Water Treatment Plant – Occoquan Reservoir
- Falls Church City – Washington Aqueduct, Army Corps of Engineers



Initial SAP Implementation Strategy



Fairfax Water SAP Implementation

Functions Implemented

- General Ledger
- Purchase Orders
- Maintenance Management
- Fleet Maintenance
- Project and Site Plan Tracking

Replaced

- Accounts Payable
- Budgeting
- Project Cost Accounting
- Procure-to-Pay
- Inventory

Enhanced

- Asset Management
- Mobile Computing
- Metrics & Analytics

Added

CMMS – Computerized Maintenance Management System

EAM – Enterprise Asset Management

Basic CMMS

Asset Maintenance

MRO Procurement and Invetory

Full EAM

MRP Materials Requirements Planning

Time and Payroll

Financial Optimization and reliabilty reporting

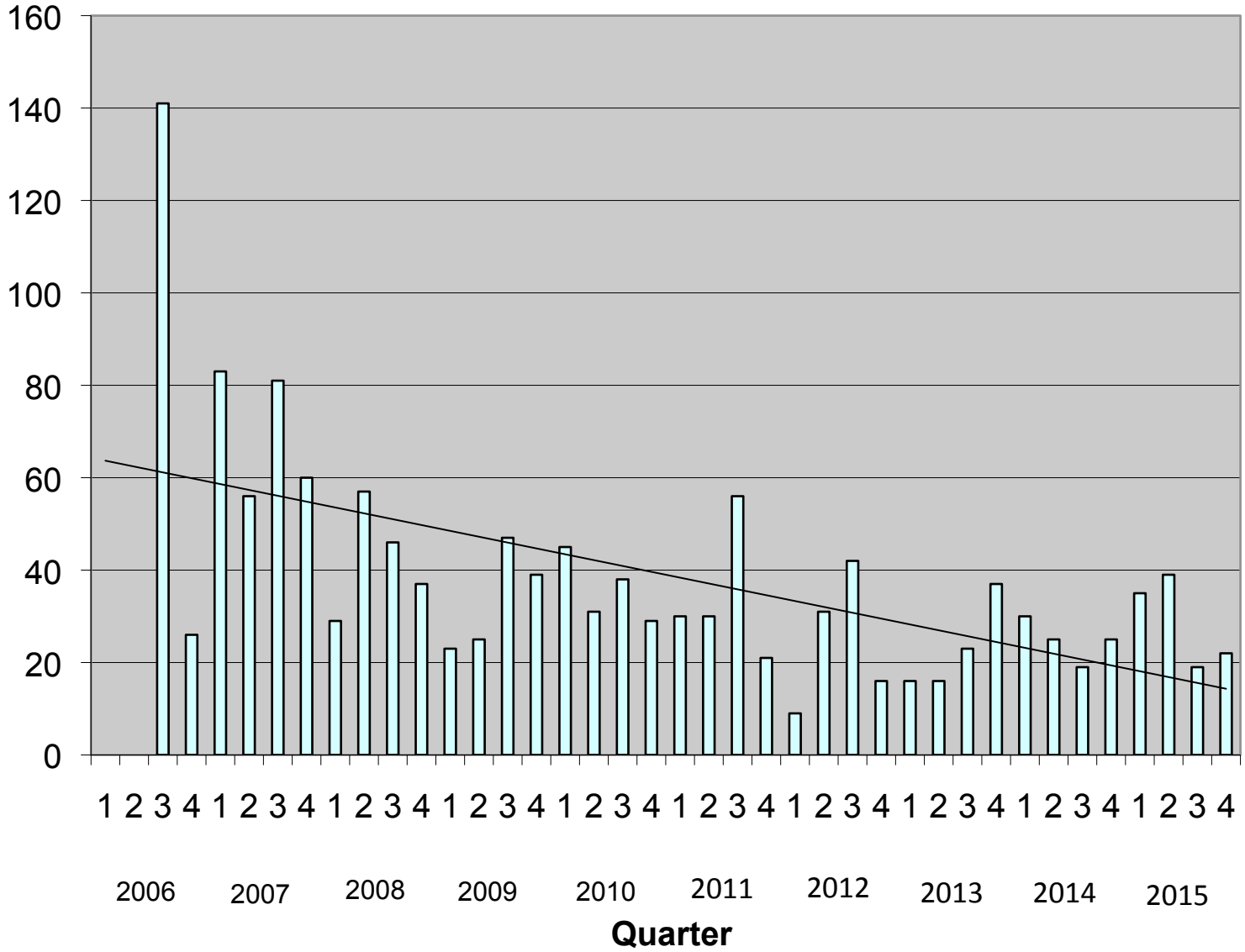
Human Resources

Core Financials

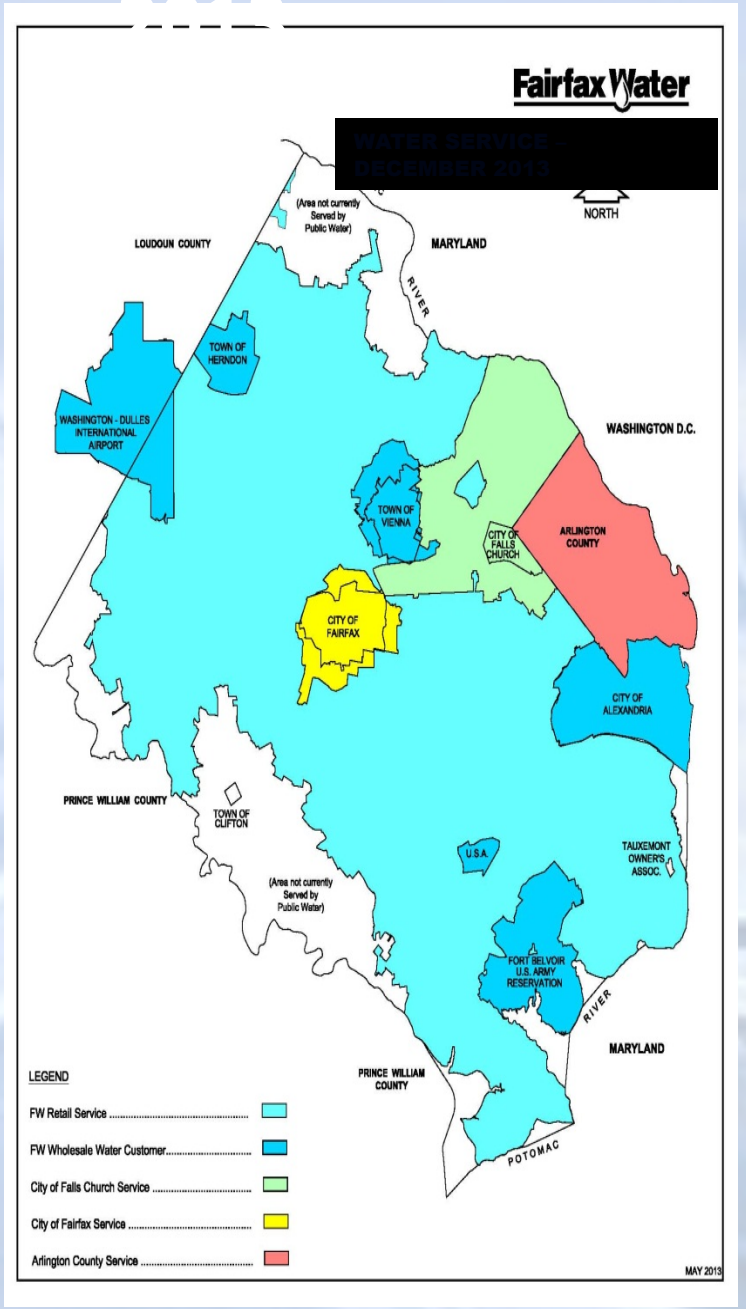
Inspection(s) and Calibration(s)

Project Management

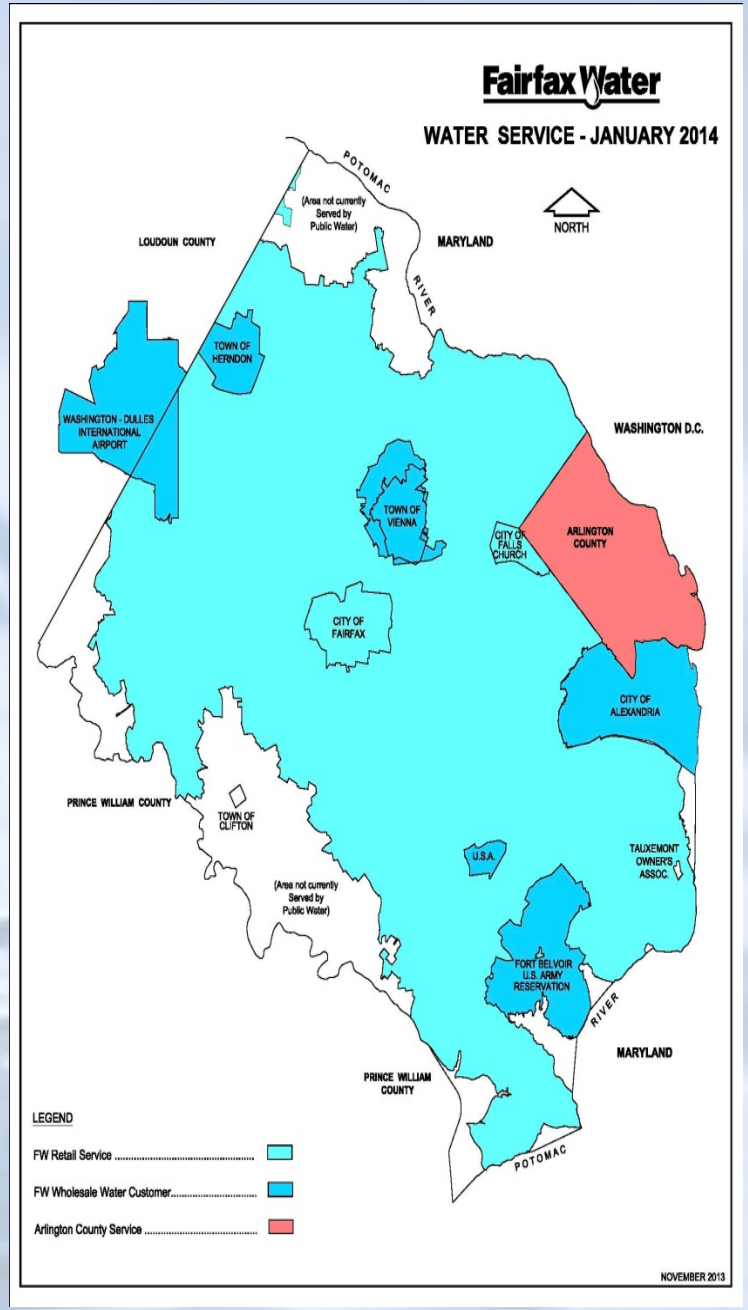
Emergency Maintenance Callouts for Production



Water System December 2013



Water System January 2014



Fairfax Water Legacy System (<2014)

- 2 Treatment Plants 345 mgd
- 19 pumping stations
- 3,281 miles of water mains
- 23,498 fire hydrants

In 2014 the systems of the cities of Falls Church and Fairfax were acquired adding:

- 2 Treatment Plants 30 mgd available.
- 8 pumping stations
- 690 miles of water mains
- 5,329 fire hydrants

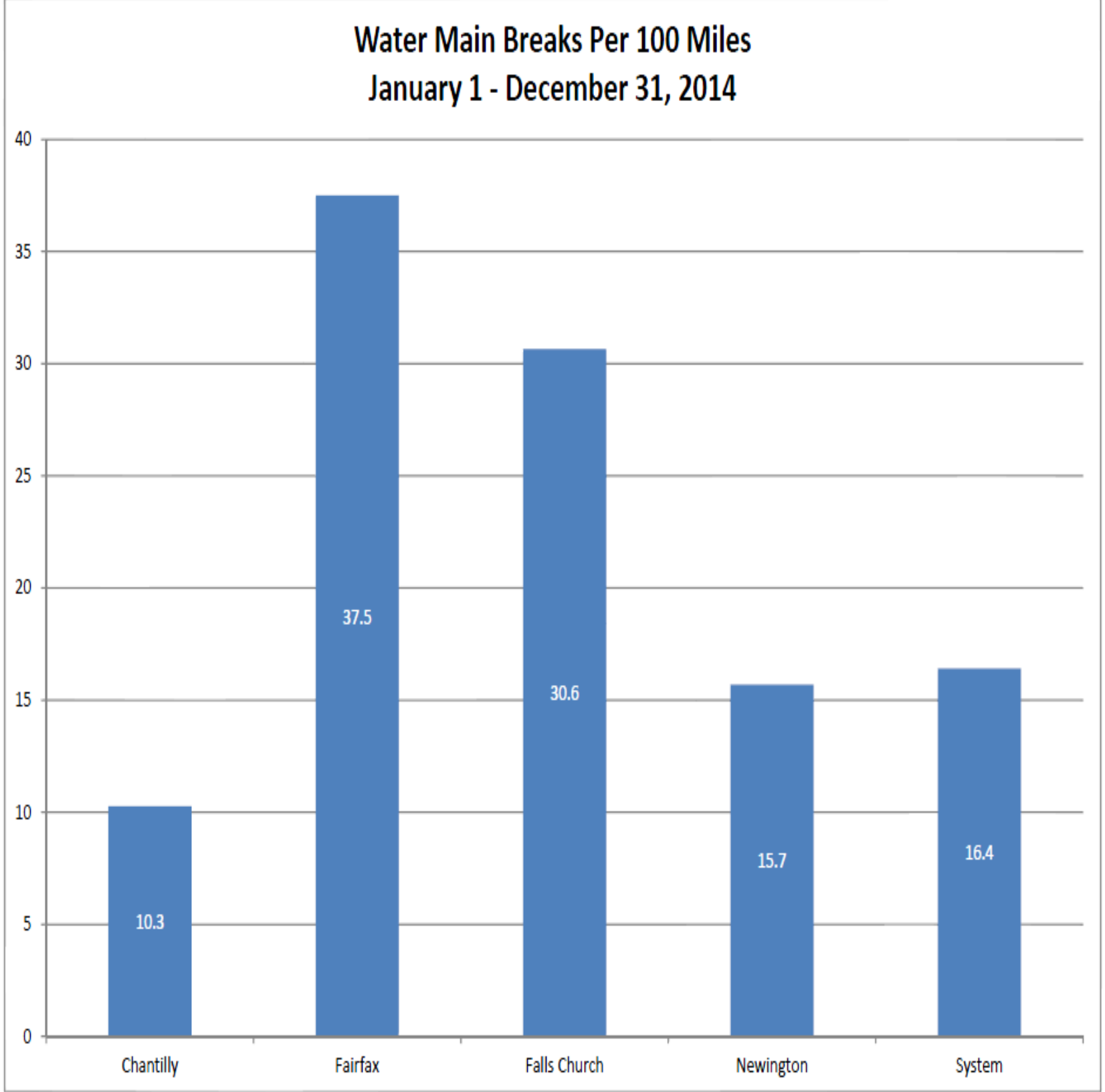
Main Break Data Quality of Acquired Assets

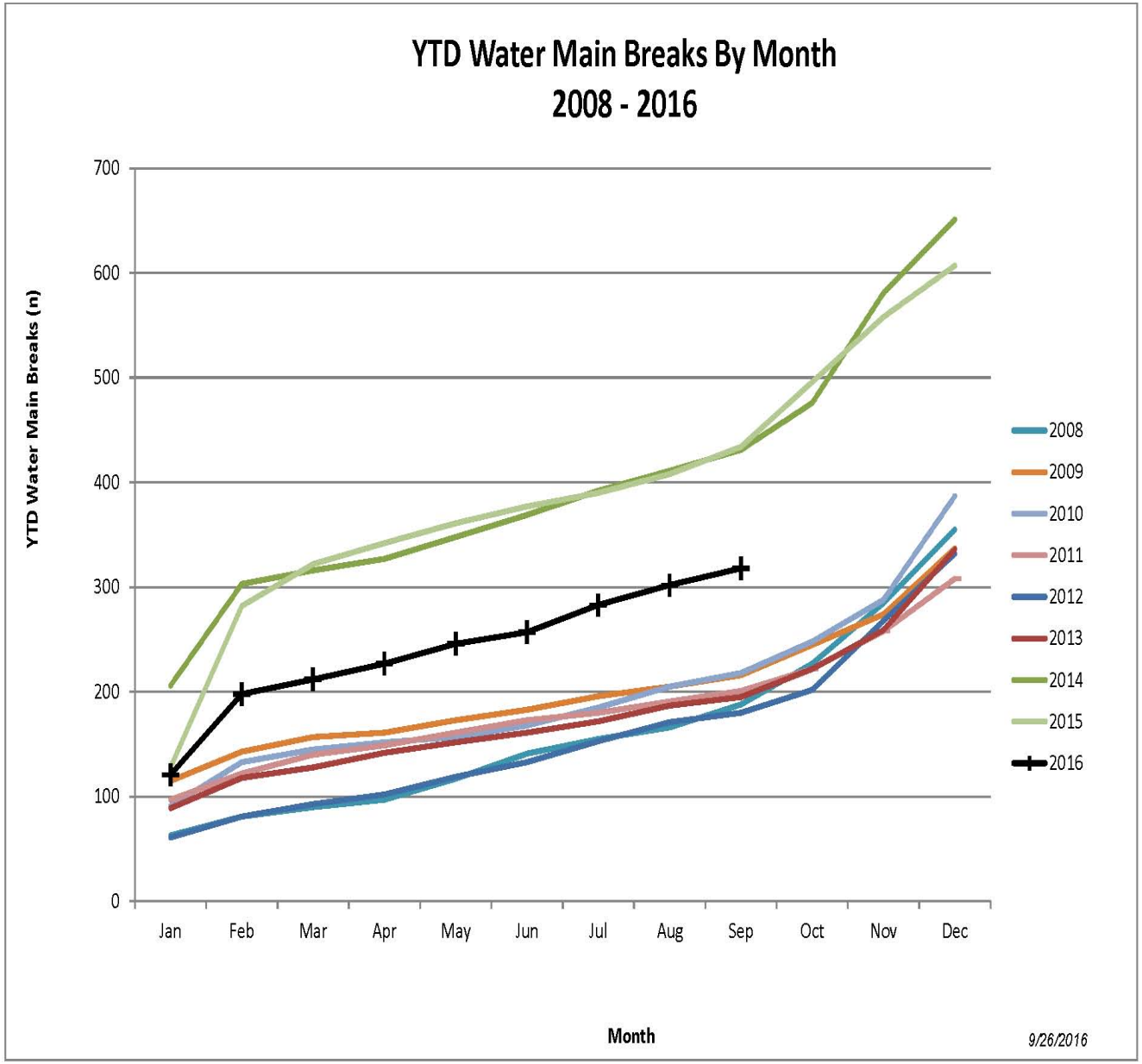
- No information
  - Miss Utility ticket information
  - Number of houses out
  - Valves closed
  - Pipe condition
- Some records but not all
  - Time service off and restored
  - Depth
- Interpretation or analysis of comments required
  - Component Type
  - Nature of Leak
  - Failure Mode

Above Ground Asset Data Quality of Acquired Assets

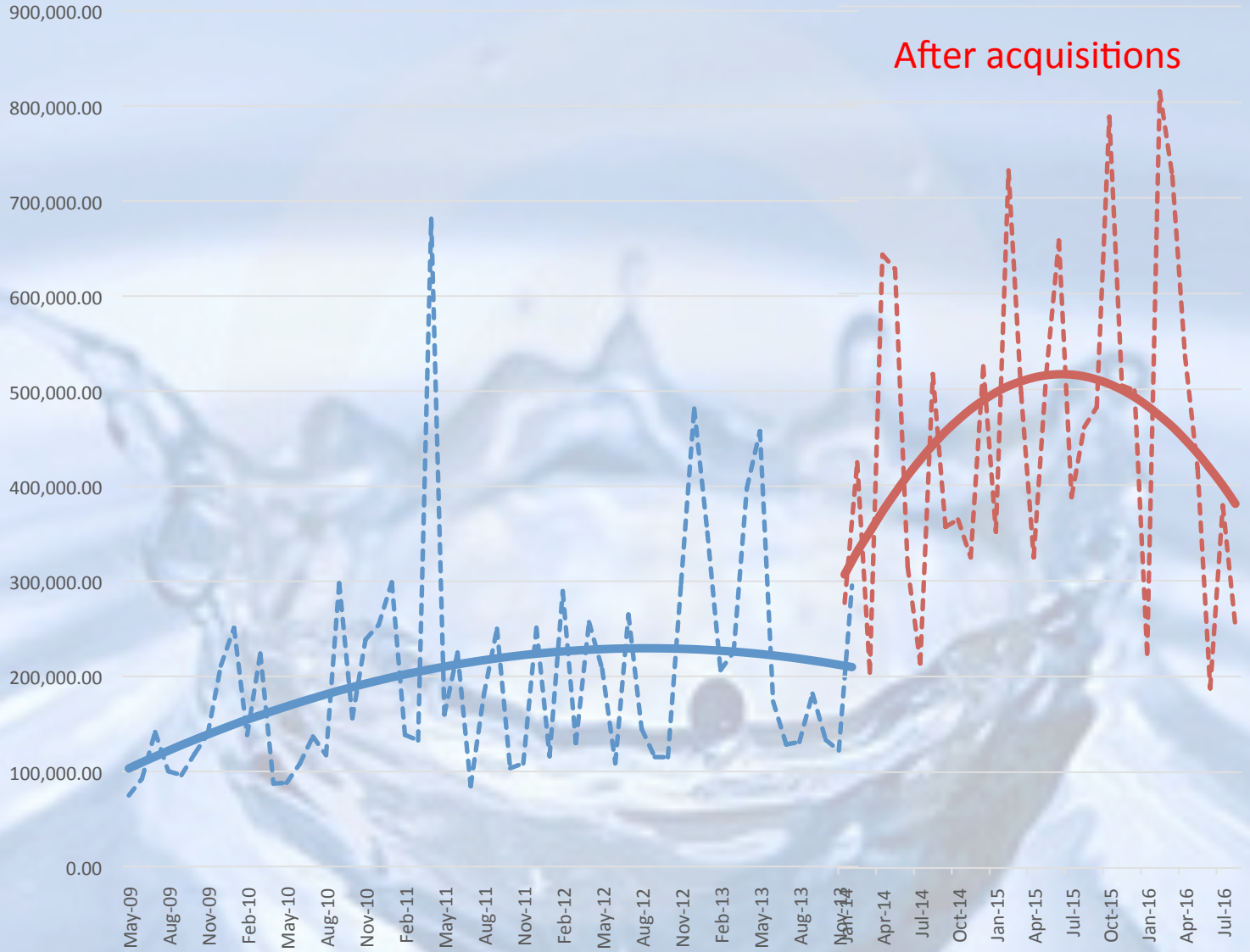
- No Information
- Apparently no PM program

i.e. No Asset Management

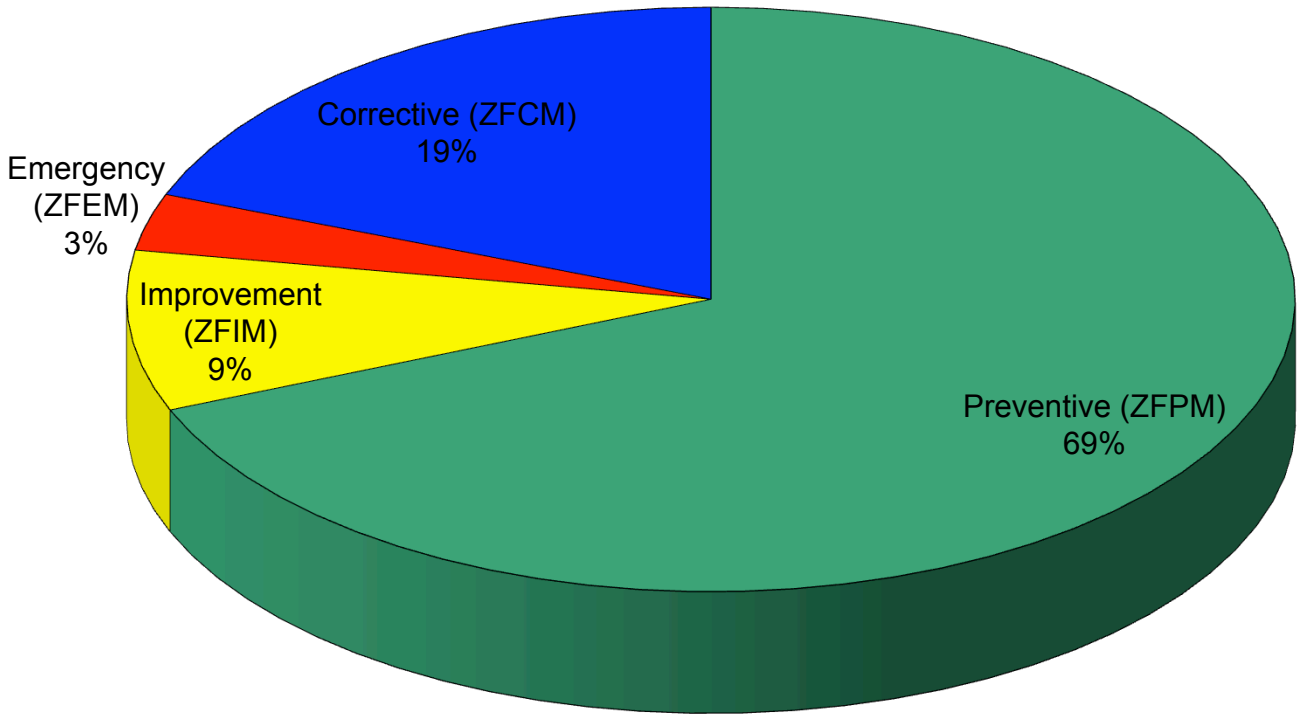

Water Main Breaks Per 100 Miles
January 1 - December 31, 2014
40
35
30
25
20
15
10
5
0
10.3
37.5
30.6
15.7
16.4
Chantilly
Fairfax
Falls Church
Newington
System


YTD Water Main Breaks By Month
2008 - 2016
YTD Water Main Breaks (n)
700
600
500
400
300
200
100
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Month
2008
2009
2010
2011
2012
2013
2014
2015
2016
9/26/2016

T&D Corrective Maintenance



Typical Production Orders



Questions?