







Bureau of Safe Drinking Water

# **Fundamentals of Asset Management**



## Summary

- Definition of terms
- Asset Management Components
- Asset Management Benefits
- Core Elements
- How to Implement
- Resources



#### What is an asset?

 EPA says "all the equipment, buildings, land, people, and other components needed to deliver safe and clean drinking water"

- Large, expensive, long
   lived, and often buried
- Essential to protectpubic health





## **Drinking Water Infrastructure**

#### EPA 2013 needs survey

– The nation's drinking water utilities need \$384.2 billion in infrastructure investments over the next 20 years for thousands of miles of pipe as well as thousands of treatment plants, storage tanks, and other key assets to ensure the public health, security, and economic well-being of our cities, towns, and communities.



## Definition of Asset Management

 A process for maintaining a desired level of service at the best appropriate cost





## Components of Asset Management

Building asset inventory

 Scheduling and tracking maintenance through work orders

Managing budgeted annual expenses and revenue



## Benefits of Asset Management

- Allows water systems to document
  - The assets they have
  - How long they are going to last
  - How much it costs to repair, rehab, or replace them
- Provides financial projections
  - Allows systems to know if their rates and/or other revenue sources are sufficient to provide safe drinking water

Gives systems the tools to make informed decisions



## Benefits of Asset Management - cont

- Long-term planning for capital improvements
- Continuous quality service to customers
- Determining "true cost" of water
- Maintaining fair, stable rate structure
- Nexus between operations and management
- Customer communication and confidence
- Proactive rather than reactive
- Legacy to pass on to future water system stakeholders



- What is current state of utility's assets?
  - What does it own?
  - Where is it?
  - What is its <u>condition</u>?
  - What is its remaining value?
  - What is its remaining useful life?





- What is utility's required level of service?
  - What do regulations require?
    - Minimum level of service
  - What are systems performance goals?
  - What do the customers expect?
  - What are physical capability of utility's assets?





Which assets are critical to system

performance?

– How can an asset fail?

– What is likelihood and consequence of failure?

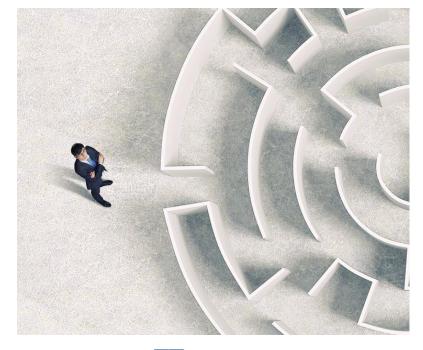
– What does it cost to repair or replace asset?

— What other costs are associated with asset failure?





- What are the utility's best minimum life cycle cost CIP and O&M strategies?
  - What management strategies exist?
  - What is most feasible?





 What is the utility's best long term financing strategy?

– Does utility have enough funding to maintain assets?

- Are rates sustainable?
- Determine your cost to produce water



## How to implement

- Develop an Asset Management Plan with available tools
  - Hand ledger
  - Spreadsheets
  - CUPSS <u>Check-Up Program for Small Systems</u>
- What information do you need?
  - Inventory and Evaluation of Assets
  - Annual Operations and Maintenance Expenses
  - Annual Water Production
- Create a team



# The Big Take-Away

If a utility does not manage its assets, the assets will manage the utility!



#### **Asset Management Resources**

- EFCN Network
- Excel Spreadsheet -- Asset Management Plan
   Workbook for Water Utilities, Michigan DEQ
- EPA
- AMKAN Work











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