



pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION



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 protect public 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

Core Elements

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



Core Elements

- 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?



Core Elements

- 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?



Core Elements

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



Core Elements

- 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 – Check-Up Program for Small Systems
- 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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