



Overview of Asset Management

Confidence to Completion

Overview of Asset Management

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Session Agenda

- What is Asset Management - the basics
- Where to find help and tools – resources shared
- What is the process to completion



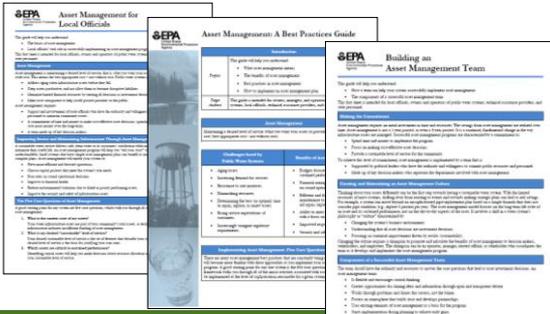
Session Objectives

By the end of the session you will...

- **Be able to explain** the benefits of an Asset Management Program to decision makers
- **Have the confidence** to start an Asset Management Program
- **Know the first steps** to toward completing an Asset Management Program



Best Practices Guides



What is an Asset?

All your "stuff"; pipes, pumps, computer programs, furniture, rolling stock, valves, motors, buildings...

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Asset Truths

- All assets are **not** created equal
- All assets eventually **fail**
- Failures **directly** affect system performance

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Asset Management Includes:

- Public Relations
- Maintenance
- Personnel and Training
- Planning
- Finance and Rates

Which do you think is more important?

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Asset Management Includes:

- Public Relations
- Maintenance
- Personnel and Training
- Planning
- Finance and Rates

A well trained & stable work force

↕

Board / Council also!

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Asset Management Includes:

- Public Relations
- Maintenance
- Personnel and Training
- Planning
- Finance and Rates

None stands alone!!

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Good Management Comes With a Price...

What are the two questions you must always be able to answer?

- **Why are we doing this?**
- **What is it going to cost?**

Customers don't need to "like" the answers.

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What is Asset Management

Flow Chart: The Five Core Questions of Asset Management Framework

1 Current State of Assets

2 Level of Service

3 Critical Assets

4 Minimum Life Cycle Cost

5 Long-term Funding Plan

Asset Management

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Step 1 Current State of Assets

Flow Chart: The Five Core Questions of Asset Management Framework

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3 Critical Assets

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5 Long-term Funding Plan

Asset Management

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Step 1 Current State of Assets

What do I own?

Where is it?

What is its condition?

What is its useful life?

What is its value?

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Step 1 Current State of Assets

What do we own?

- Prepare an asset inventory
- What type of asset is it?
 - Short lived – generally replaced by cash
 - Long lived (Capital Asset) generally financed but can be cash replaced

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Step 1 Current State of Assets

Identify number/feet/type of all important components in your utilities

- *Year Installed
- Useful Life
- Condition
- Replacement Cost

No Fibbing

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Step 1 Current State of Assets

Where is the asset located?

- Prepare a system facility map and show where assets are located
- Are they located in the “best” place?
 - Computer back ups
 - Extra vehicle keys

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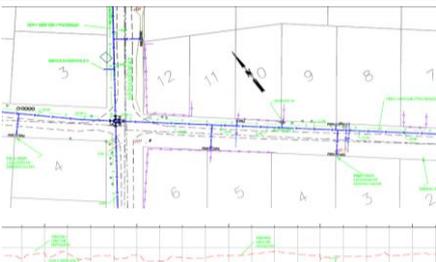
Step 1 Current State of Assets

Collecting the data.... the biggest challenge!

- Facility Maps and Plans
- Bid/Construction documents
- "As-builts"
- Walk the line
 - Wheel or pace yardage
 - Count valves, hydrants etc.
- Your experience and observation



Step 1 Current State of Assets




Step 1 Current State of Assets

Identify condition and importance of assets

- Use a value system, 1 – 10
- Determine which number means immediate replacement
- How important is this asset? Is it critical or is it for redundancy?



Step 1 Current State of Assets

Assess useful life

- What is the total useful life of the asset
- Calculate the remaining useful life



Step 1 Current State of Assets



Asset Management: A Handbook for Small Water Systems

One of the Simple Tools for Effective Performance (STEP) Guide Series




Step 1 Current State of Assets

Introduction to the System Inventory Worksheet

The following System Inventory Worksheet will help you:

- Identify all of your system's assets.
- Record the condition of your assets.
- Record the service history of your assets.
- Determine your assets' adjusted useful lives.
- Record your assets' ages, and.
- Estimate the remaining useful life of each of your assets. Usually there are two steps to estimating useful life.

1. Determine the expected useful life by using the manufacturer's recommended life or the estimate provided in the box to the right. Adjust these numbers based on the specific conditions and experience of your system.
2. Calculate an adjusted useful life by taking into account the service history and current condition of your asset.

Two copies of the worksheet are provided. The first copy is followed by instructions that will help you understand how to complete it. The second worksheet is an example. Appendix A has blank worksheets that you can photocopy and use.

Asset	Expected Useful Life (in years)
Inlet Structures	35-45
Works and Storage	25-35
Gates and Tunnels	30-40
Clarification Equipment	10-15
Other Treatment Equipment	10-15
Storage Tanks	30-40
Pumps	10-15
Buildings	30-40
Electrical Systems	7-10
Transmission Mains	35-40
Distribution Pipes	35-40
Valves	35-40
Blow-off Valves	35-40
Backflow Prevention	35-40
Meters	10-15
Service Lines	30-40
Hydrants	40-60
Leak Monitoring Equipment	5-7
Tools and Shop Equipment	10-15
Landsliding/Grading	40-60
Office Furniture/Supplies	10-15
Computers	5
Transportation Equipment	10

Note: These numbers are ranges of expected useful lives drawn from a variety of sources. The ranges assume that assets have been properly maintained.



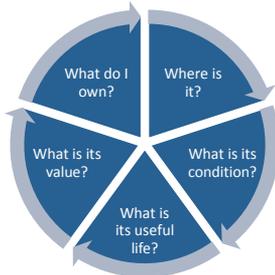
Step 1 Current State of Assets

Determine asset values and replacement costs

- Capital Facility Plan
- Parts suppliers
- Well drillers
- Engineering estimates

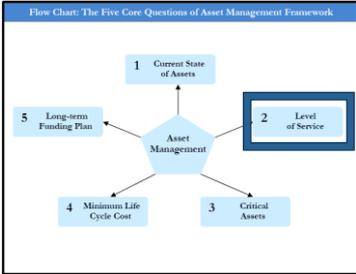


Step 1 Current State of Assets




Step 2 Level of Service

Flow Chart: The Five Core Questions of Asset Management Framework




Step 2 Level of Service

A policy decision to provide an “amount” of service to meet (local standards):

- 1 • Reliability and safety of utilities
- Future needs
- Customer needs / wants
- 2 • Financial viability

What is the order of the above?



Step 2 Level of Service

Financial Viability (WA ST DOH ODW)

“Sufficient funds to operate, maintain and manage a public water system, **on a continuing basis**, in full compliance of federal and state laws”



Step 2 Level of Service

- No violations
- Planning requirement
- Backup generator
- Emergency plans
- Well trained personnel
- Nice truck w/emblem
- **Clean facilities**
- Your own backhoe
- Phone answered in 3 rings
- Good water pressure
- System optimization
- Repair parts on-hand
- Proactive maintenance
- Public relations
- Adequate Rates



Step 2 Level of Service

- There must be communication management ↔ operations utility ↔ customers
- Planning exercise
- Written and adopted policies
- Track achievement



Step 2 Level of Service

Tracking achievement

- Set criteria
- Based on adopted standards
- Meeting set standards shows customers you take this responsibility seriously

+ **Public Relations** 😊



Step 2 Level of Service

The higher the LOS, the higher the cost:

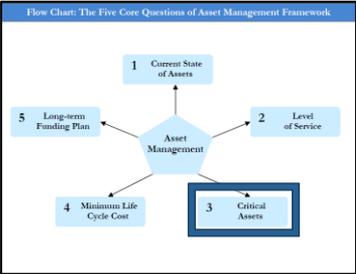
- Well trained personnel, backup power, modern billing programs
- Some LOS costs can be partially recovered

Good people = good service + good maintenance



Step 3 Critical Assets

Flow Chart: The Five Core Questions of Asset Management Framework




Step 3 Critical Assets

Which assets are critical to sustained performance?

Conduct a **Vulnerability Analysis** to identify vulnerability from intrusion, terrorism, storms, flooding, earthquakes...



Step 3 Critical Assets

Analyze failure consequences

Develop an **Emergency Response Plan** to show what you are going to do about failure, who does what, phone numbers...



Step 3 Critical Assets

What's the probability of failure?

- Past history
- Age and condition
- Trends

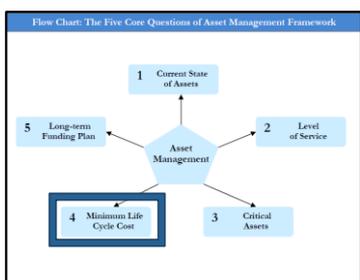
List assets by failure type



Step 3 Critical Assets



Step 4 Minimum Life Cycle Cost



Step 4 Minimum Life Cycle Cost

Key Concepts:

- Scheduled Maintenance
 - Reactive vs. Proactive vs. Predictive
- Recordkeeping
 - Track trends
- Planning
 - Financial
 - Contingency

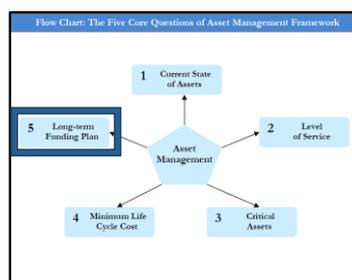


Step 4 Minimum Life Cycle Cost

1. Move from reactive maintenance to predictive
2. Know costs & benefits of rehabilitation vs. replacement
3. Deploy resources based on asset conditions
4. Analyze possible asset failures & develop specific response plans



Step 5 Long-term Funding Plan



Step 5 Long-term Funding Plan

- ✓ Inventory your assets
- ✓ Service policies
- ✓ Replacement schedule
- ❑ Determine needed reserve accounts
- ❑ Determine funding sources
- ❑ Translate the above into rates!




Step 5 Long-term Funding Plan

Determine needed reserve accounts

- Short term asset replacement
- Cash components of capital projects such as preliminary engineering, matching funds




Step 5 Long-term Funding Plan

Determine funding sources:

- Cash reserves
- Loan sources
 - **Learn prioritization of funding**
- Likelihood of grants
 - Community Development Block Grants
 - USDA Rural Development
 - DOH SRF "forgiveness"



Step 5 Long-term Funding Plan

Support the Asset Management Plan

- Factual budget; 1 year, 6 year
- Budget projections include annual expenses, new loans & inflation
- Needed rate increases will be clearly shown



Step 5 Long-term Funding Plan

Impact of Inflation Over Next 5 Years

Total Inflation Cost: **\$83,647**

Year	Total Inflation Cost
2011	\$5,466
2012	\$16,480
2013	\$33,125
2014	\$55,485
2015	\$83,647

Total inflation paid to end of this year: \$5,466 \$16,480 \$33,125 \$55,485 \$83,647



Step 5 Long-term Funding Plan

Keep in touch

- Prioritization for loans and grants is likely to be changed
 - You will need to show financial planning and "sustainability" skills
 - You will need to demonstrate "stewardship" of your utilities

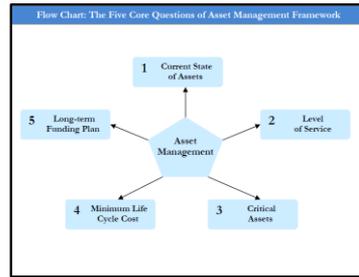


Step 5 Long-term Funding Plan

- Create and follow a budget
- Create & fund a dedicated asset reserve
- Revise your rate structure
- Attend workshops.....IACC!



What is Asset Management



Resources

<http://www.ohiowea.org/docs/Asset%20Management%20Plan%20-%20Cannon.pdf>

<https://www.epa.gov/sustainable-water-infrastructure/asset-management>

http://www.iwr.usace.army.mil/Portals/70/docs/iwrreports/2013-R-08_Best_Practices_in_Asset_Management.pdf



Resources

Resources

Your Utility Name	9/4/2010	Number of Connections or ERUs used to calculate Equity?	Total Equity	Equity per ERU	Monthly Cost Per Unit for Reserve							
Current Year:	2010		\$21,114	\$2,881	\$22,892							
Asset and Description	Asset Class	Est. Original Cost	Condition Rating	Critical Assets	Life	Cost \$	Value \$	%	Loss \$	Value \$	%	Value \$
8" water wvl. 100 feet deep	1987	20	1	1.0	2%	0	\$18,000	\$1,800	0%	\$0	0%	\$18,000
Panels	1982	20	6	1.0	2%	0	\$25,200	\$12,600	50%	\$12,600	50%	\$25,200
Submersible Pump #2, Janicci, 3 HP, 3 Phase	1982	20	6	1.0	2%	0	\$8,800	\$4,400	50%	\$4,400	50%	\$8,800
Submersible Pump #2, Janicci, 3 HP, 3 Phase	1982	20	6	2.0	30%	0	\$8,800	\$4,400	50%	\$4,400	50%	\$8,800
Submersible Pump #1, 3 HP, 3 Phase	2001	12	1	1.0	2%	0	\$13,800	\$13,800	100%	\$0	0%	\$13,800
Booster Pump #2, 7.5 HP, 3 Phase	2001	12	1	1.0	2%	0	\$13,800	\$13,800	100%	\$0	0%	\$13,800
Reservoir, Concrete, 18' Baser 18x, 32,000 gal	1987	60	3	2.0	40%	0	\$62,800	\$26,712	42%	\$36,088	58%	\$62,800
Hydroponic Tank, 2000 gal	1982	60	3	1.0	2%	0	\$8,900	\$2,967	33%	\$5,933	67%	\$8,900
8" PVC, 600 feet	1982	60	1	2.0	40%	0	\$162,300	\$32,460	20%	\$129,840	80%	\$162,300
2" PVC, 600 feet	1982	60	1	2.0	40%	0	\$18,000	\$3,600	20%	\$14,400	80%	\$18,000
Storazine Valve #2	1982	20	5	1.0	2%	0	\$4,900	\$2,450	50%	\$2,450	50%	\$4,900
Blow-off valves #1	1982	20	5	1.0	2%	0	\$2,900	\$1,450	50%	\$1,450	50%	\$2,900
Gate Valves #1	1982	24	9	1.0	2%	0	\$6,900	\$3,450	50%	\$3,450	50%	\$6,900
Electrical Service and Control	1982	20	5	1.0	2%	0	\$7,800	\$3,900	50%	\$3,900	50%	\$7,800
App'Ve #1	1988	24	5	1.0	2%	0	\$1,900	\$950	50%	\$950	50%	\$1,900
6" PVC, 160 feet	1982	60	1	2.0	40%	0	\$74,800	\$14,960	20%	\$59,840	80%	\$74,800
4" PVC, 160 feet	1982	60	1	2.0	40%	0	\$24,700	\$4,940	20%	\$19,760	80%	\$24,700
3" PVC, 200 feet	1982	60	1	2.0	40%	0	\$22,600	\$4,520	20%	\$18,080	80%	\$22,600



First Steps

First Steps to Success...

- Get key people together
- Outreach to the community
- Choose a model or template
- Begin asset inventory
- Write and adopt LOS policies



Take Away

- The AM Plan produces a “**visual picture**” of condition, location and replacement
- The AM Plan **supports** budget and rates
- There are tools and assistance to **help** you get started
- **First** step – get everyone on board



Questions



For More Information

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