



Rural Community
Assistance Corporation
www.rcac.org

Overview of Asset Management

Agenda



**Asset Management
5 core framework**



Objectives for this Session:

At the end of the session you will be able to...

- **Define** Asset Management
- **Understand & Explain** the **Benefits** of an Asset Management Program
- **Identify Steps** your system can take to begin an Asset Management Program

Best Practices Guide and Fact Sheets



Asset Management for Local Officials

This guide will help you understand:

- The basics of asset management.
- Local officials' vital role in successfully implementing an asset management program.

This fact sheet is intended for local officials, owners and operators of public water systems, technical assistance providers, and state personnel.

Asset Management

Asset management is maintaining a desired level of service, that is, what you want your assets to provide) at the lowest life cycle cost. This means the best appropriate cost – not without cost. Public water systems should:

- Address aging water infrastructure assets before they fail.
- Keep assets productive, and not allow them to become disruptive.
- Maximize limited financial resources by treating all decisions as investments.
- Make costs transparent to help justify project priorities to the public.

Asset management requires:

- Support and involvement of local officials who have the authority to make investment decisions.
- A commitment of time and money to make cost-effective asset management decisions that save more money over the long-term.
- A team made up of key decision makers.

Improving Service and Maintaining Infrastructure Through Asset Management

A sustainable water service delivers safe, clean water to its customers' and maximizes their useful life. An asset management program will help you understand the benefits of asset management and how to implement a program. Small systems that have simple asset management plans can benefit from asset management. Asset management will enable your system to:

- Have more efficient and focused operations.
- Choose capital projects that meet the system's true needs.
- Base rates on sound operational decisions.
- Improve its financial health.
- Reduce environmental violations due to failed or poorly performing assets.
- Improve the security and safety of infrastructure assets.

The Five Core Questions of Asset Management

A good starting point for any system are five core questions, which walk you through the process of asset management.

1. What is the current state of my assets?
Your water infrastructure assets are part of your community's total infrastructure. Insufficient funding of asset management can lead to system failure.
2. What is my desired "sustainable" level of service?
Your desired sustainable level of service is the set of features that you want your system to provide. This is the basis for justifying your user rates.
3. Which assets are critical to sustained performance?
Identifying critical assets will help you make decisions about how to invest in your sustainable level of service.



Asset Management: A Best Practices Guide

Introduction

Purpose	<p>This guide will help you understand:</p> <ul style="list-style-type: none"> • What asset management means. • The benefits of asset management. • Best practices in asset management. • How to implement an asset management plan.
Target Audience	<p>This guide is intended for owners, managers, and operators of public water systems, local officials, technical assistance providers, and state personnel.</p>

Asset Management

Maintaining a desired level of service (what you want your assets to provide) at the lowest life cycle cost (best appropriate cost - not without cost).

Challenges faced by Public Water Systems	Benefits of Asset Management
<ul style="list-style-type: none"> • Aging assets. • Increasing demand for services. • Resistance to rate increases. • Diminishing resources. • Determining the best (or optimal) time to repair, replace, or renew assets. • Rising service expectations of customers. • Increasingly stringent regulatory requirements. 	<ul style="list-style-type: none"> • Budgets focused on activities critical to sustained performance. • Financial management and rates based on sound operational information. • Efficient and focused operations and maintenance to prolong asset life and aid repair/replace decisions. • Ability to meet consumer demands with a focus on system sustainability. • Improved response to emergencies. • Security and safety of assets improved.

Implementing Asset Management: Five Core Questions Framework

There are many asset management best practices that are constantly being improved upon. You will become more familiar with these approaches as you implement your asset management program. A good starting point for any size system is the five core questions framework. This framework walks you through all of the major activities associated with asset management and can be implemented at the level of sophistication reasonable for a given system.



Building an Asset Management Team

Understand:

How your system successfully implement asset management.

What a successful asset management team.

Who are local officials, owners and operators of public water systems, technical assistance providers, and state personnel.

Investment:

An initial investment in time and resources. The savings from asset management are realized over a 1-year project, or even a 5-year project. It is a continual, fundamental change in the way you manage your assets. Successful asset management programs are characterized by a commitment to:

• Invest in the program.

• Make cost-effective asset decisions.

• Maintain the level of service for the community.

• Commitment, asset management is implemented by a team that includes:

• Local leaders who have the authority and willingness to commit public resources and personnel.

• Decision makers who represent the departments involved with asset management.

Building an Asset Management Culture

Asset management can be the first step towards having a sustainable water system. With the limited budget, shifting away from reacting to events and towards making strategic plans can lead to real savings. Move beyond an unsophisticated pipe-replacement plan based on a simple formula that does not account for asset condition (replace 5 percent per year). The asset management model focuses on the long-term life cycle of the asset, not on the day-to-day aspects of the asset. It involves a shift in a water system's culture, as noted by:

• A focus on the business environment.

• All asset decisions are investment decisions.

• Operational improvement driven by results (sustainability).

• A champion to promote and articulate the benefits of asset management to decision makers. The champion can be an operator, manager, elected official, or stakeholder who coordinates the efforts of the asset management program.

Building a Successful Asset Management Team

Identify the authority and resources to answer the core questions that lead to asset investment decisions. An asset management team should include:

• Encourage critical thinking.

• Encourage sharing ideas and information through open and transparent debate.

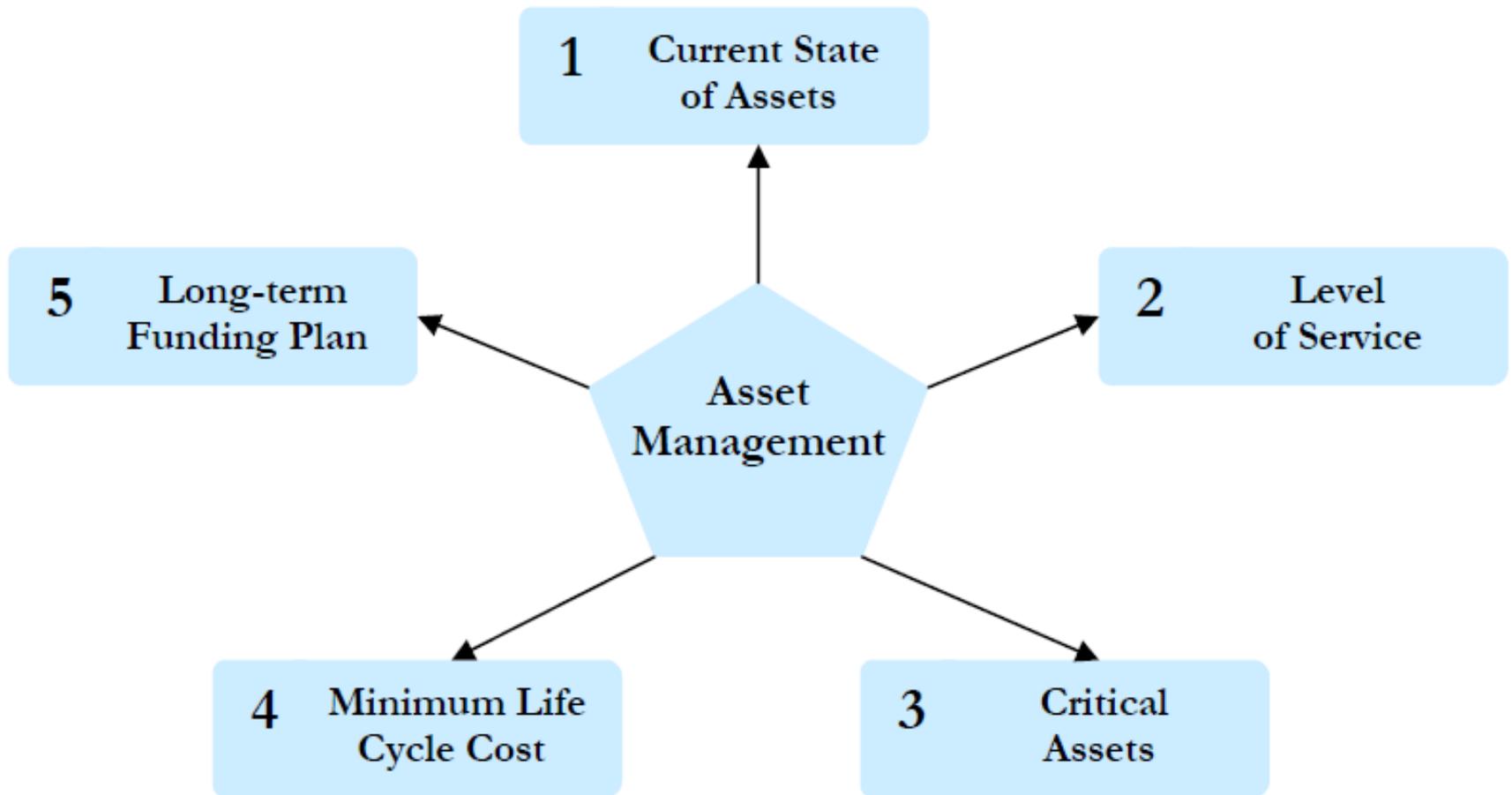
• Celebrate success and share the success, not the blame.

• Create a culture that builds trust and develops partnerships.

• Use the results of asset management as a basis for the program.

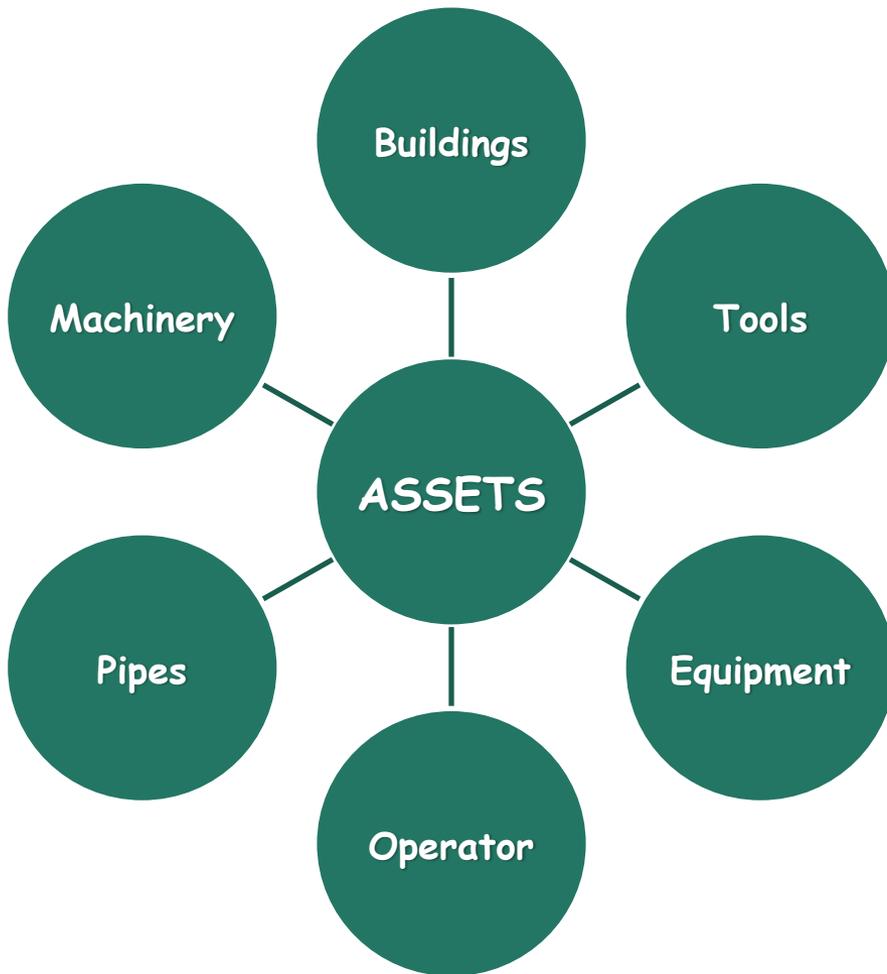
• Focus on achieving goals during planning to achieve early gains.

Flow Chart: The Five Core Questions of Asset Management Framework



What is an Asset?

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





Asset Truths

- All assets are not created equal
- All assets eventually fail
- Failures directly affect system performance
- Two categories:
 - Short lived – generally replaced via cash
 - Long lived (Capital assets) – generally financed; can be cash



Asset Management (AM) includes:

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

NONE stand alone!



Asset Management (AM) includes:

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

Which do you think is more important?



Asset Management (AM) includes:

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

A well trained & stable work force

Board / Council as well!!!....



Good management comes with a Price!...

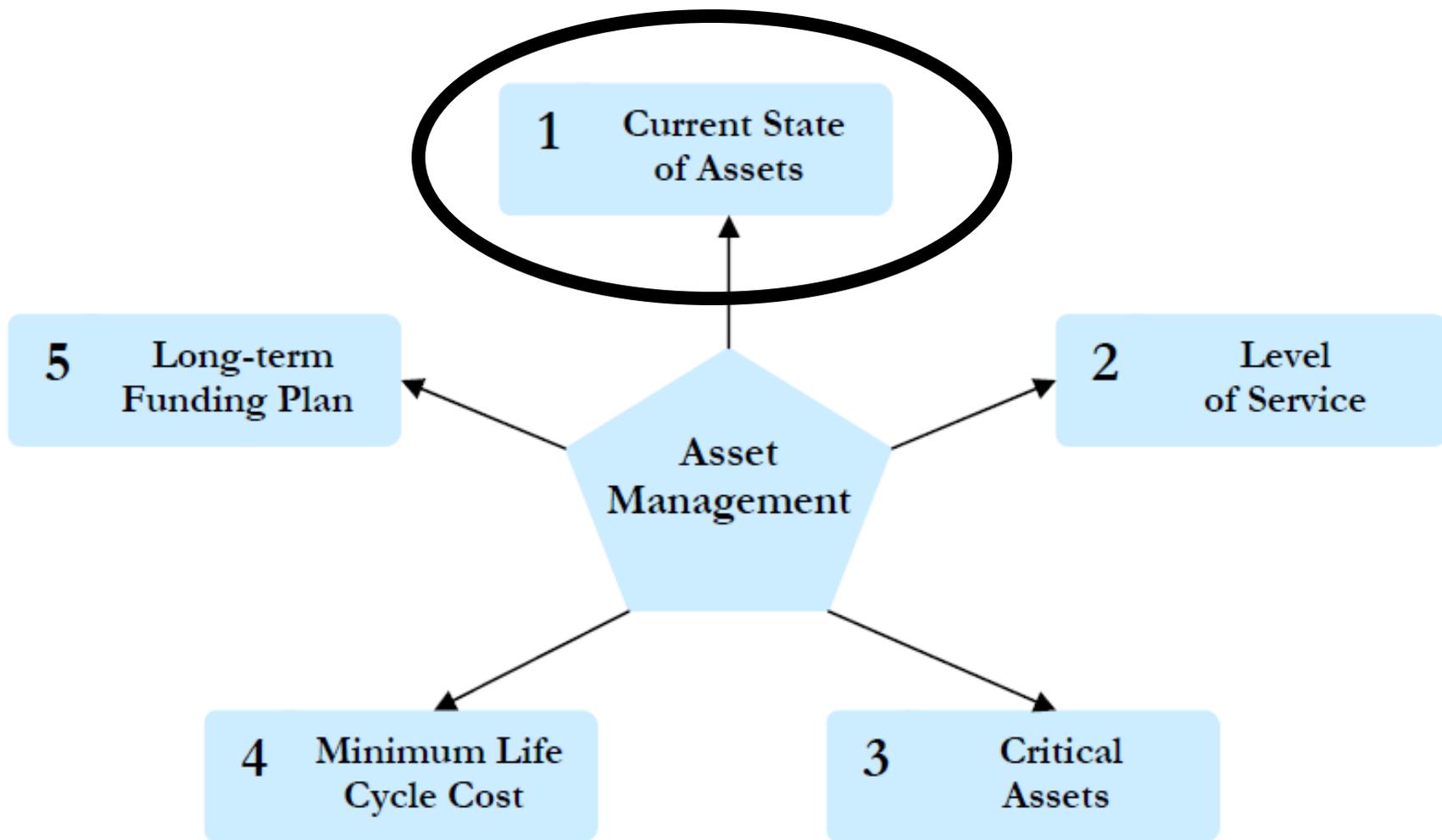
What are the two questions you must always be able to answer?

Why should we do this?

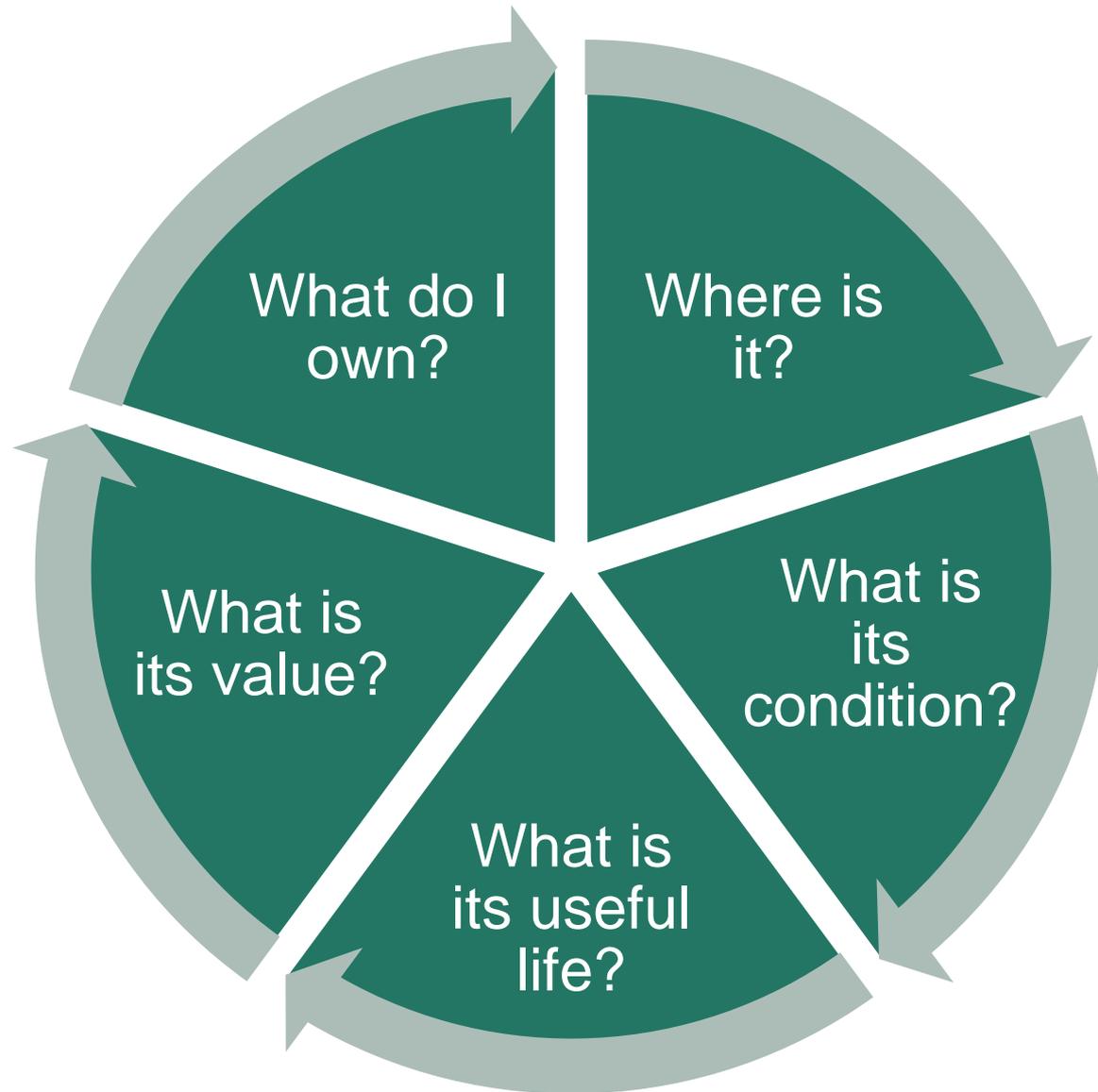
What's it going to cost?

Customers don't need to "like" the answer!

Flow Chart: The Five Core Questions of Asset Management Framework



#1 Current State of Assets



1. Current State of Assets

- Prepare an asset inventory and system (facility) map

Best Practices

1. Current State of Assets

- Prepare an asset inventory and system (facility) map
- **Identify condition and importance of assets**

Best Practices



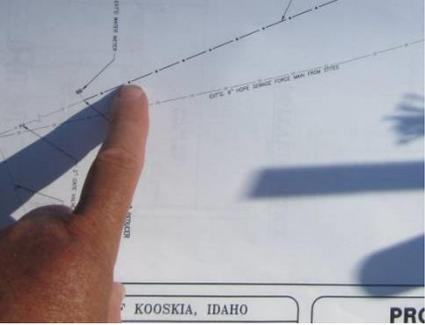
Asset Inventory

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

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



NO FIBBING!



Collecting Data... ...hardest part!

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

1. Current State of Assets

- Prepare an asset inventory and system (facility) map
- Identify condition and importance of assets
- **Assess useful life**

Best Practices



Asset Management: A Handbook for Small Water Systems

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



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 recommendations or the estimates provided in the box to the right. Adjust these numbers based on the specific conditions and experiences 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.

Estimated Useful Lives

Asset	Expected Useful Life (in years)
Intake Structures	35-45
Wells and Springs	25-35
Galleries and Tunnels	30-40
Chlorination Equipment	10-15
Other Treatment Equipment	10-15
Storage Tanks	30-60
Pumps	10-15
Buildings	30-60
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	30-50
Hydrants	40-60
Lab/Monitoring Equipment	5-7
Tools and Shop Equipment	10-15
Landscaping/Grading	40-60
Office Furniture/Supplies	10
Computers	5
Transportation Equipment	10

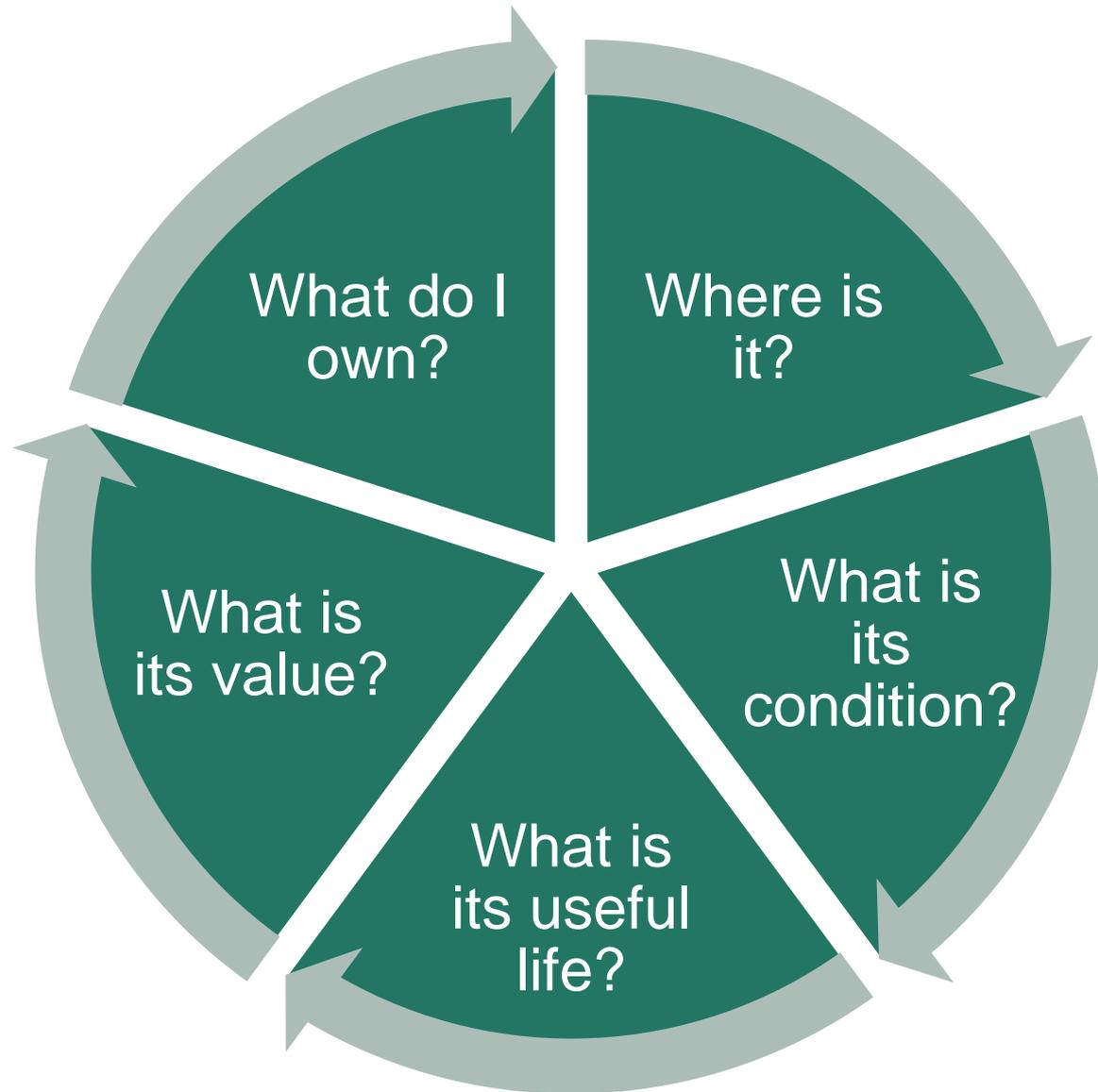
Note: These numbers are ranges of expected useful lives drawn from a variety of sources. The ranges assume that assets have been properly maintained.

1. Current State of Assets

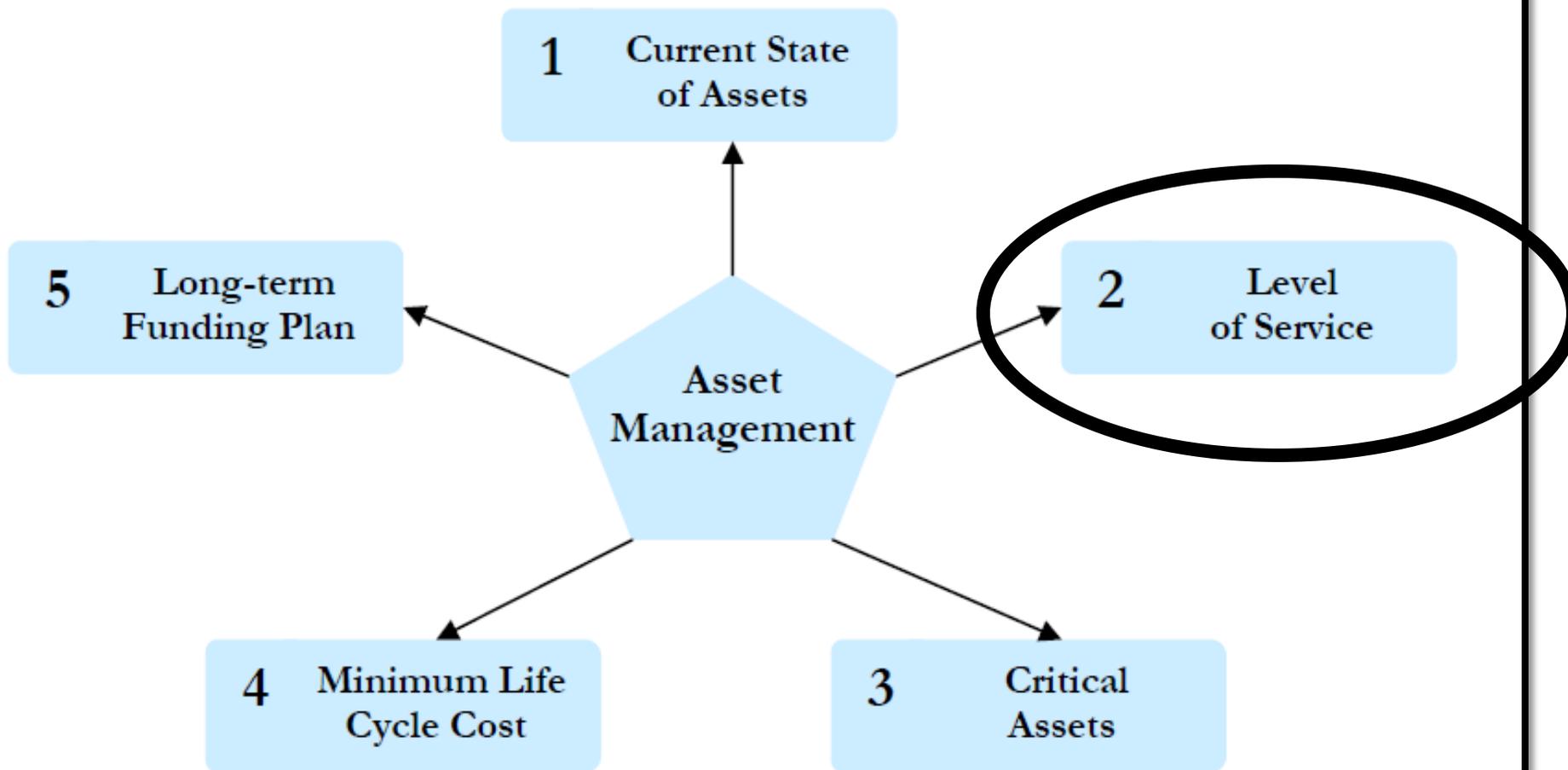
- Prepare an asset inventory and system (facility) map
- Identify condition and importance of assets
- Assess useful life
- **Determine asset values and replacement costs**

Best Practices

#1 Current State of Assets



Flow Chart: The Five Core Questions of Asset Management Framework





#2 Level of Service (LOS)

What is LOS?

■ A policy decision to provide an “amount” of service to meet:

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

What is the order of the above?



Level of Service

Examples:

- No violations
- Admin/OP rules
- 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 performance
- Repair parts on-hand
- Growth planning
- Public Relations
- Rates



Level of Service

- Administrative Policies & Planning are the key elements
- There must be good communication:
management ↔ operations

Good LOS always comes with a cost!

Well trained personnel, backup power, modern billing programs

Good people = good service + good maintenance



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

Financial Viability

DOH:

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

Administrative Policies

- Meeting WSP and SWSMP requirements
- Establishing adequate reserves (rates)
- Requiring system reliability
 - Pro-active maintenance
 - VA/ERP
- Tracking LOS

Tracking LOS - PR!

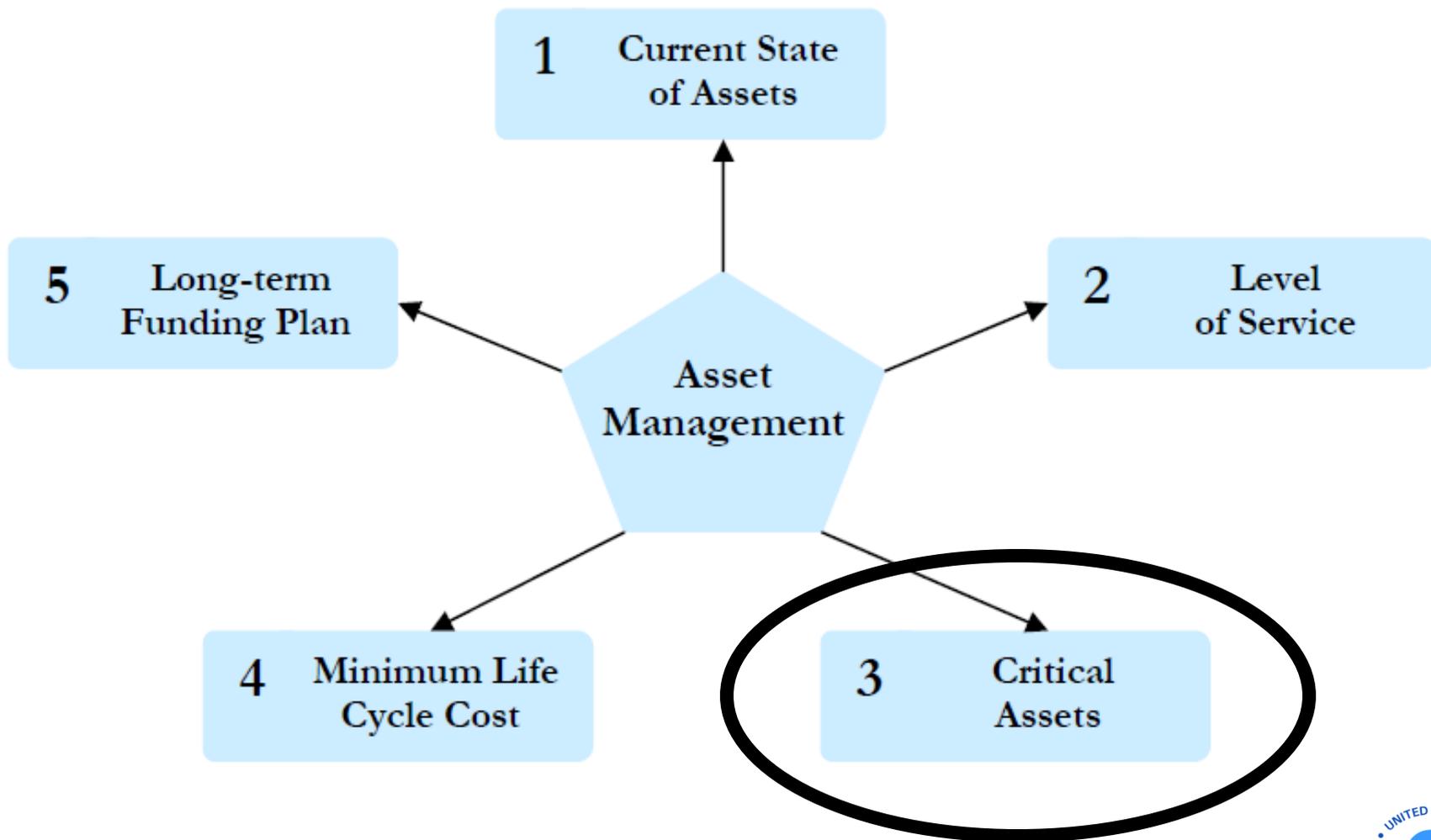
- Number/type of complaints
- Number of events
 - Outages
 - Repairs
 - Callouts
- Other \pm changes
 - Leaks – WUE rules

2. Level of Service

- Analyze current & anticipated customer demand & satisfaction with the system.
- Understand current & anticipated regulatory requirements.
- Share with the public your systems performance targets.
- Use LOS to track system performance.

Best Practices

Flow Chart: The Five Core Questions of Asset Management Framework





#3 Critical Assets

Which assets are critical to sustained performance?

- Determine Criticality & Analyze Consequences
 - Vulnerability Analysis
 - VA - Identifies vulnerability from intrusion, terrorism, storms, flooding, earthquakes etc.
 - Emergency Response Planning
 - ERP – What you are going to do about it?
Who does what & phone numbers
- What's the probability of failure?
 - Past history
 - Age & Condition
 - Trends

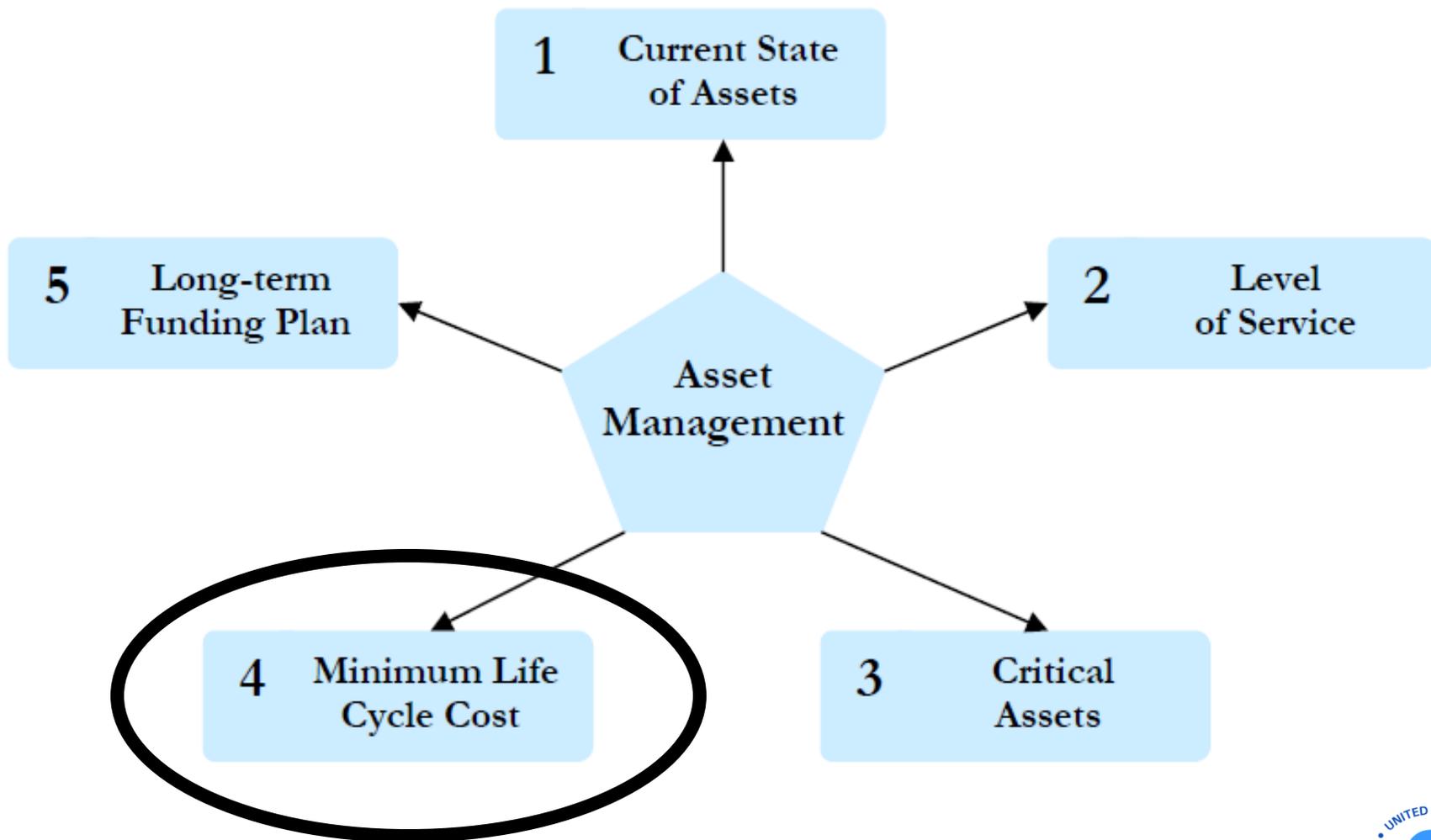


3. Critical Assets

- Analyze failure risks & consequences.
- Conduct a failure analysis.
- List assets by failure type.
- Update VA/ERP

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Flow Chart: The Five Core Questions of Asset Management Framework





#4 Minimum Life Cycle Cost

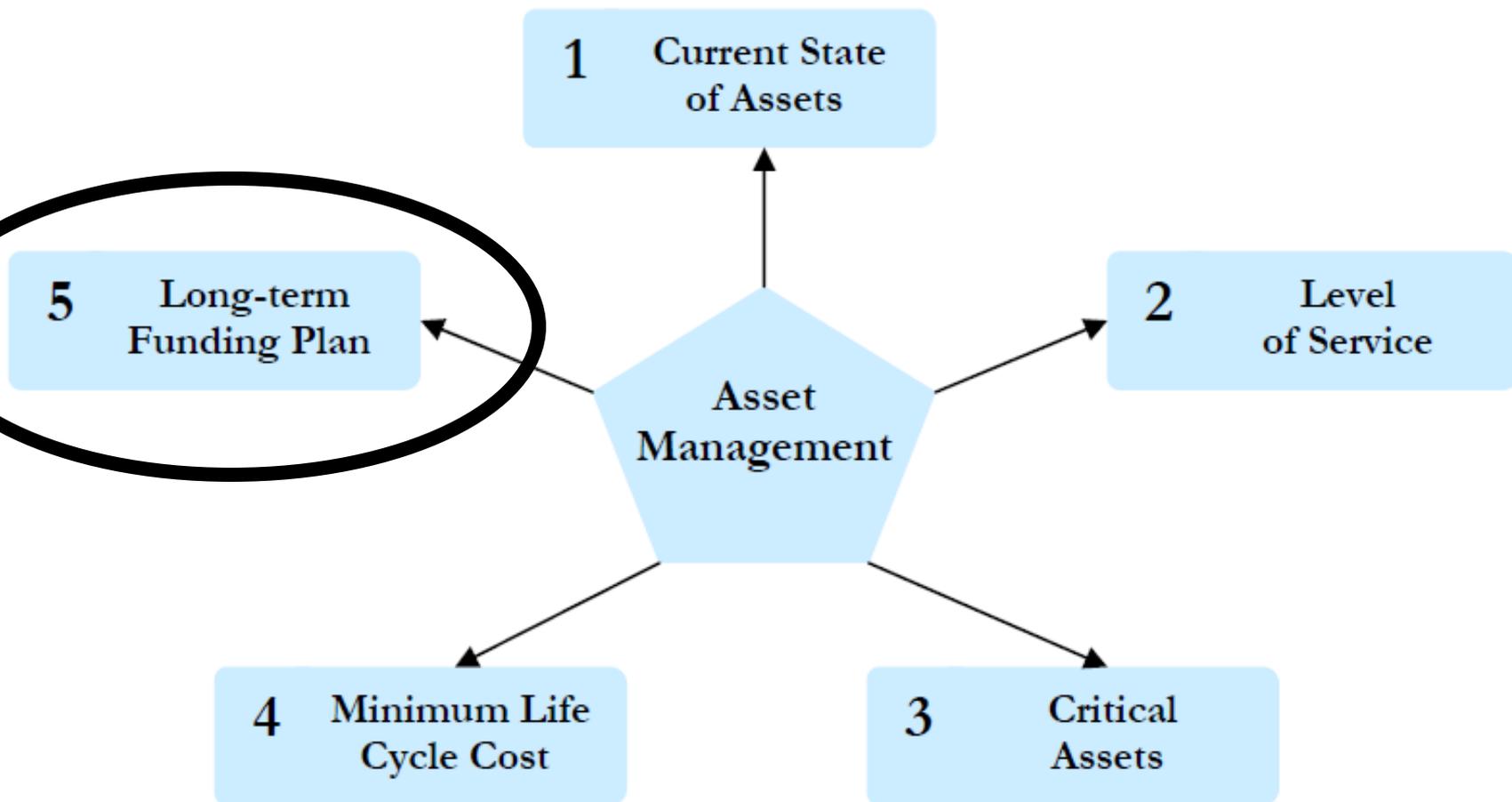
- Scheduled Maintenance
 - Reactive vs. Proactive vs. Predictive
- Recordkeeping (trends)
- Planning
 - Financial
 - Contingency

4. Minimum Life Cycle Costs

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

Best Practices

Flow Chart: The Five Core Questions of Asset Management Framework





#5 Long –term Funding Plan

- Inventory your assets!
- Determine needed reserve cash accounts
 - Short term asset replacement
 - Cash components of capital projects: such as preliminary engineering
- Determine likely loan sources
- Translate the above into rates!

Determine Funding Source

- Cash reserves
- Loan sources
 - Know prioritization of funding
- Likelihood of grants
 - Community Development Block Grants
 - USDA Rural Development
 - DOH SRF “forgiveness”

Loans

- DOH State Revolving Fund (SRF)
- USDA Rural Development (USDA RD)
- Public Works Trust Fund (PWTF)
- RCAC – Smaller amounts and bridge loans guaranteed by USDA RD
- Bank Loans : Generally not available without “liquid” assets (property or cash escrow)

Grants

- Grants are extremely **competitive** and are always fully allocated
- **Grants are tied to income of community and need**
 - Community Development Block Grant
 - USDA Rural Development
 - “Forgiveness” under DOH SRF

Now and the Future

- Prioritization for loans and grants is likely to be changed
 - Especially in the realm of financial planning and “sustainability”
 - You will need to show planning skills
 - You will need to demonstrate “stewardship” of your utilities
 - Forward planning
 - Rates and reserves

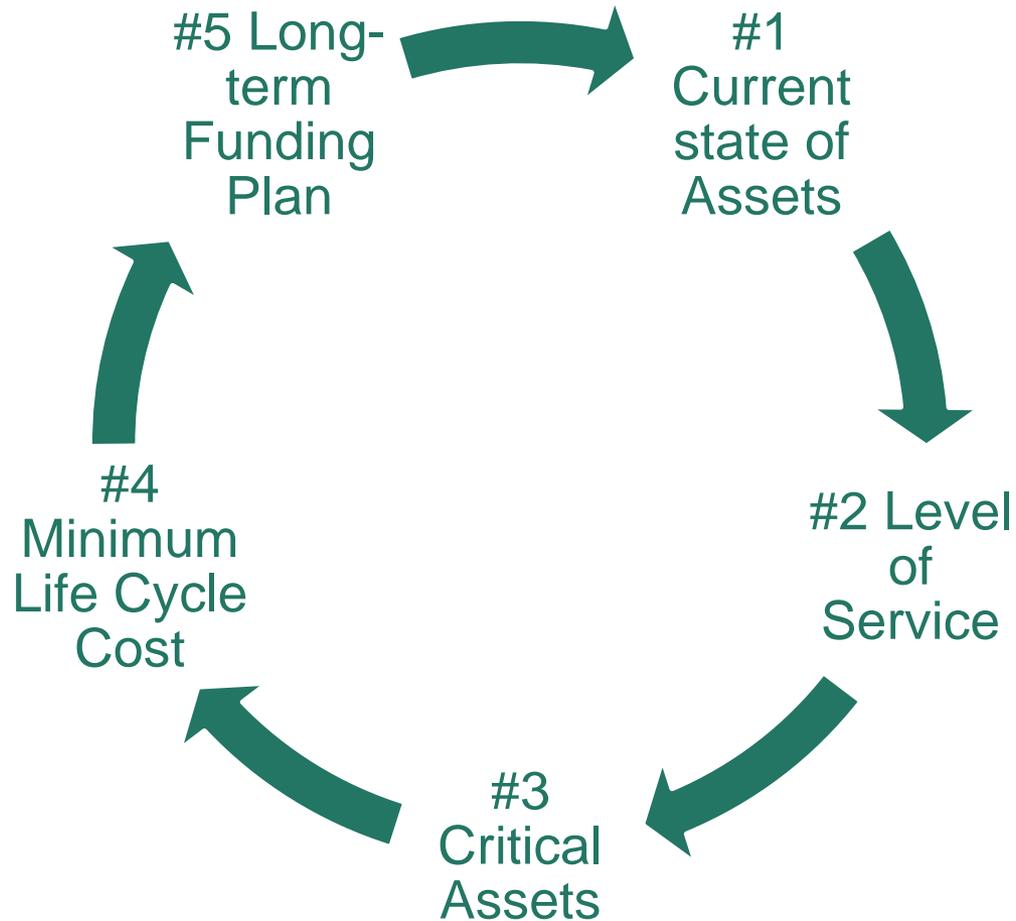
5. Long Term Funding Plan

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

Best Practices



Asset Management Life Cycle



Quicksand

- You don't have an asset listing
- You don't have condition ratings
- You don't have criticality listings
- You don't have calculated reserves
- Suddenly, things are “due” in a short amount of time

78	Total Equity:		\$223,136	Equity per ERU:		\$2,861	Monthly Cost Per Unit for Reserves:		\$56.41	
				(Connection			Annual \$\$ to Reserves:		\$52,800	
?	The Value of My Assests						My Cost to Replace			
Calc Remain Life %	Original Cost	Book Value Original \$\$	Replacment Cost	Infl. Rate	Accum Loss of Value (Dep)	Debt and Grants	Equity	Cash Replace?	Saving Acc't Interest	Future Cost
%	Cost \$	Value \$	Cost \$	%	Loss \$\$	Value \$	Value \$	X	%	Value \$
42%		\$0	\$10,000		\$5,800		\$4,200			\$10,000
3%		\$0	\$20,000		\$19,333		\$667	x	1.0%	\$20,000
3%		\$0	\$5,000		\$4,833		\$167	x	1.0%	\$5,000
20%		\$0	\$5,000		\$4,000		\$1,000	x	1.0%	\$5,000
25%		\$0	\$3,500	2.0%	\$2,625		\$875	x	1.0%	\$3,714
25%		\$0	\$3,500	2.0%	\$2,625		\$875	x	1.0%	\$3,714
49%		\$0	\$52,800		\$26,752		\$26,048		1.0%	\$52,800
35%		\$0	\$8,000	2.0%	\$5,184		\$2,816		1.0%	\$11,336
53%		\$0	\$102,200	2.0%	\$47,693		\$54,507		1.0%	\$192,600
53%		\$0	\$16,500	2.0%	\$7,700		\$8,800		1.0%	\$31,095
3%		\$0	\$4,000		\$3,867		\$133	x	1.0%	\$4,000
3%		\$0	\$2,500		\$2,417		\$83	x	1.0%	\$2,500
1%		\$0	\$6,000		\$5,947		\$53	x	1.0%	\$6,000
3%		\$0	\$7,000		\$6,767		\$233	x	1.0%	\$7,000
4%		\$0	\$1,000		\$958		\$42	x	1.0%	\$1,000

Summation

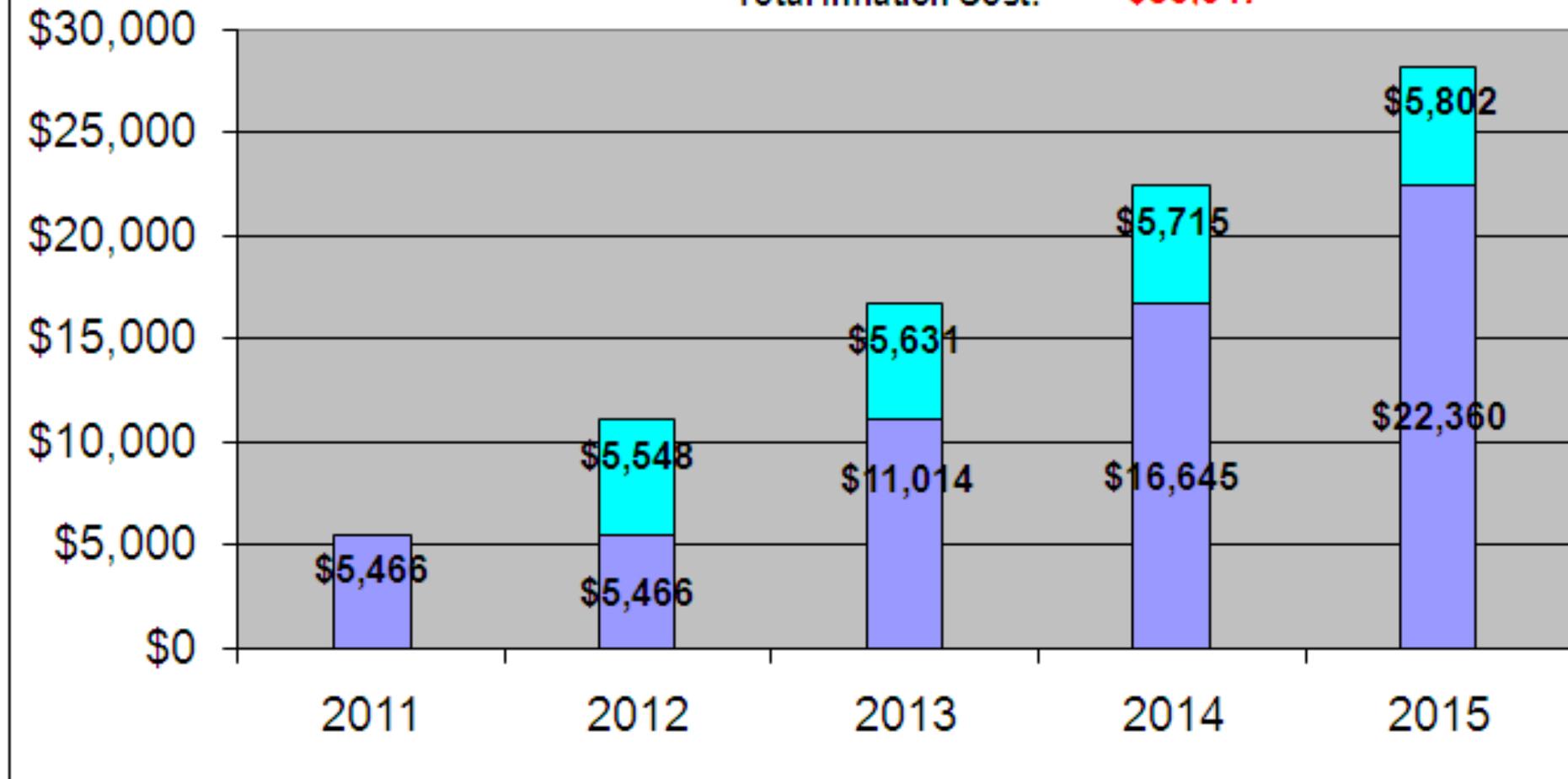
- The Asset Survey produces a “visual picture” of equipment replacement
 - PR tool
- Projects cost of replacement
- May be used to defend connection fees

“Outyear” Budgets

- Required for WSP and SWSMP
 - 6 year budget forecast; current + 5 years
- Future budget projections will include **inflation**, new loans and annual expenses
- **You will clearly see rate increases if needed**

Impact of Inflation Over Next 5 Years

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



Total inflation paid
to end of this year:

\$5,466

\$16,480

\$33,125

\$55,485

\$83,647



RCAC

Questions?

