



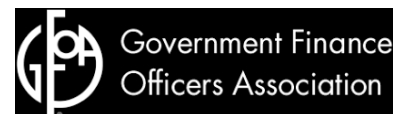
Smart Management for
Small Water Systems

Level Up with Level of Service Goals!

May 1, 2018

Michele Pugh, Wichita State University Environmental Finance Center

www.efcnetwork.org





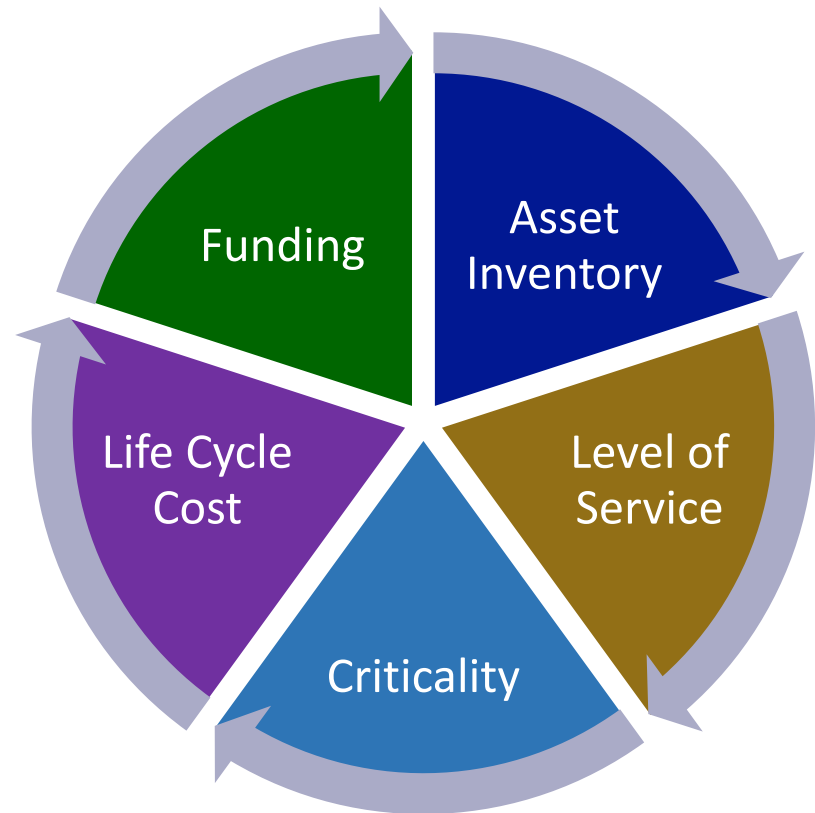
Webinar Overview

- What is asset management
- What is level of service and why it is important
- The goal setting process
- Implementation



Asset Management

- 5 Core Components
 - Asset Inventory
 - **Level of Service**
 - Criticality
 - Life Cycle Cost
 - Funding





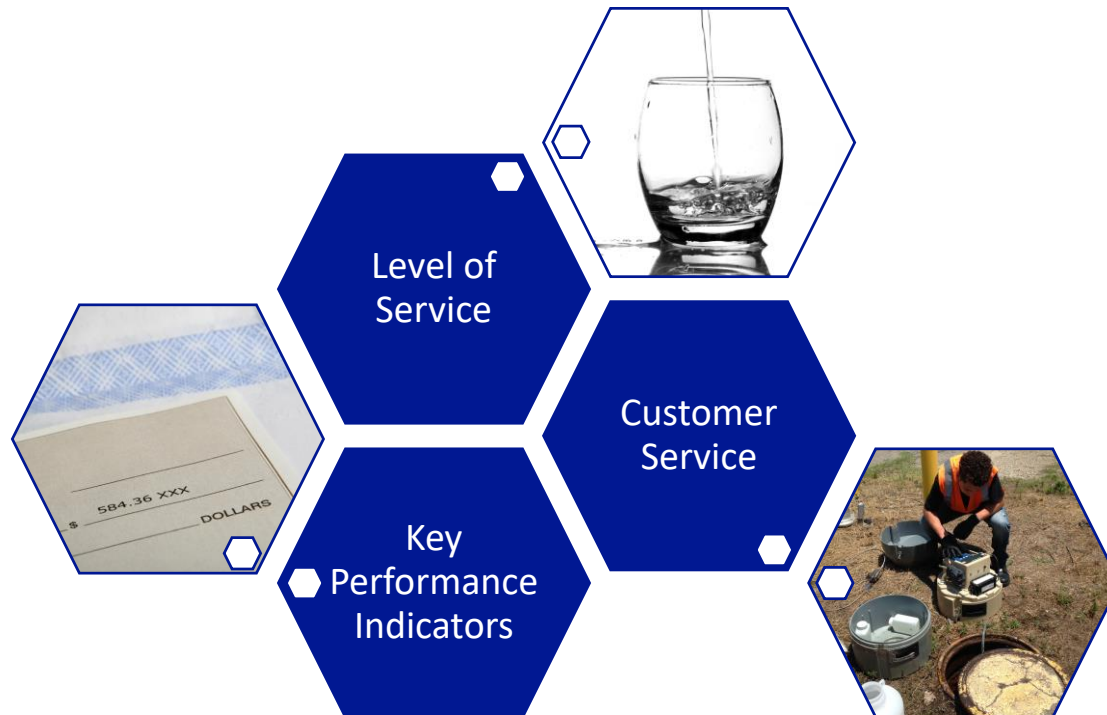
Poll – Does your water system have established level of service goals?

1. Yes, and we measure them regularly
2. Yes, but they need updating
3. No, we don't have any established
4. Not a water system



What is Level of Service?

Level of service defines what you do, how you do it, when you do it, how you spend your time (money) to provide what your customers want.





Benefits of Setting Goals

- When customers have a say in what they want they are more willing to pay for it
- Communication with managers and board
- Measure of how your utility is operating
- Level of service is an opportunity to have a conversation with customers
- Helps characterize the importance of each asset



Higher level of service, higher cost



Lower level of service, lower cost



The Level of Service Goal Process

- Determine your team
- Gather feedback
- Evaluate goals
- Finalize and start tracking



The Level of Service Goal Process

- Determine your team





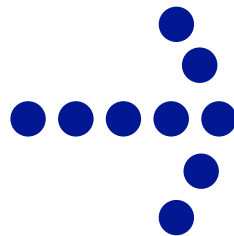
The Level of Service Goal Process

- Determine your team
- **Gather feedback**

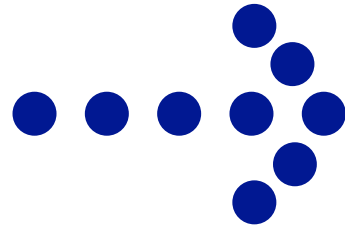
Customer
Involvement



Measurable
Goals



Track
Progress



Staff
Involvement





Poll-Does your organization have good communication with customers?

1. Yes, we actively gather and evaluate customer feedback
2. Yes, but only when there are rate increases or a customer doesn't pay their bill
3. No, we just send out CCRs



Customer Input

- Customer conversations
- Surveys
- Social media
- Phone calls
- Customer complaints





The Level of Service Goal Process

- Determine your team
- Gather feedback
- **Evaluate goals**





Internal vs. External Goals

External Goals

- Water pressure
- Water disruptions
- Response time
- Notice for outages
- Taste/smell complaints

Internal Goals

- Training
 - Meter calibration
 - Fire hydrant flushing
 - Employee safety
 - Energy management program
-
- Safe Drinking Water Standards



Selecting Goals

Maximum Level = Physical capabilities of the asset

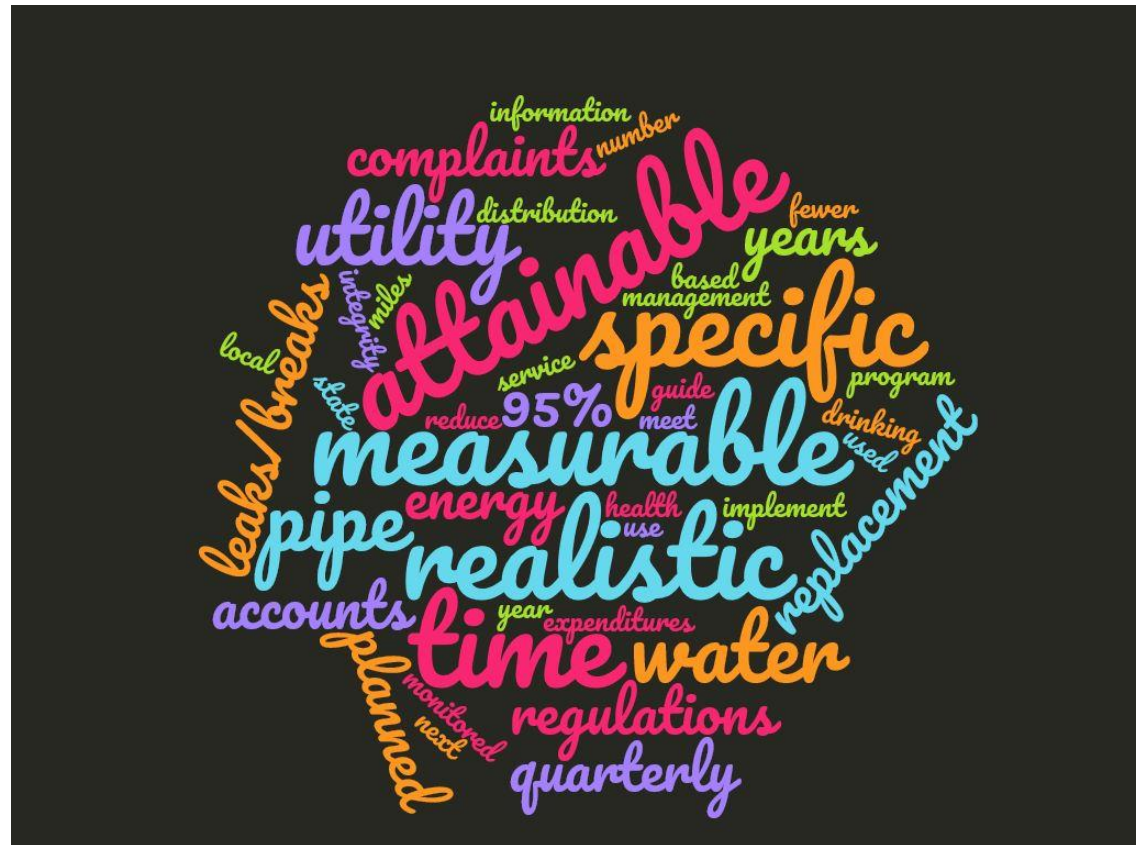


Your Choice

Minimum Level = Meet all regulatory requirements

Set SMART Goals

- **S**pecific
- **M**easurable
- **A**ttainable
- **R**ealistic
- **T**ime Bound





Specific

We will maintain water pressure.

vs.

We will maintain water pressure above 50 psi, measured at the water storage, 95% of the time.

We will have good water.

vs.

We will have fewer than 1 complaint for color, taste, and/or odor per month.



Measurable

Have less than 3% billing errors per year.

- Do you currently track the billing errors?

We will reduce energy usage by 3% per year for the next three years.

- Do you know what your current energy usage is?
- Do you have a way to track future energy usage?



Attainable and Realistic

Attainable

- Something is attainable if it can be accomplished

Realistic

- Takes into account your current situation (budget, skills, etc.)

Absolutely pure H₂O is not attainable.
Ultra-pure H₂O is attainable, but is it realistic?

Respond and repair line breaks within 4 hours.

- Change the number of hours
- Remove “repair” from goal



Time Bound

Respond to line breaks within 4 hours, 95% of the time.

Of customers that experienced a water outage, the percent of affected customers without service for more than 12 hours. Goal is 0.0% per year.

No more than 1 telemetry alarm per quarter.



Other Considerations


- Keep your goals simple
- Can change the goals
- Equipment or new practices might be needed
- Absolute wording (all, never, 100%, 0%)

“60% of the time, it works every time.”
- Brian Fantana (Anchorman)



The Level of Service Goal Process

- Determine your team
- Gather feedback
- Evaluate goals
- **Finalize and start tracking**



Poll-The last time you raised rates, how did it go?

1. Great, our customers were prepared, understood the need, and the complaints were minimal.
2. Okay, there was grumbling but we managed to do it.
3. It was a painful process and did not go well.

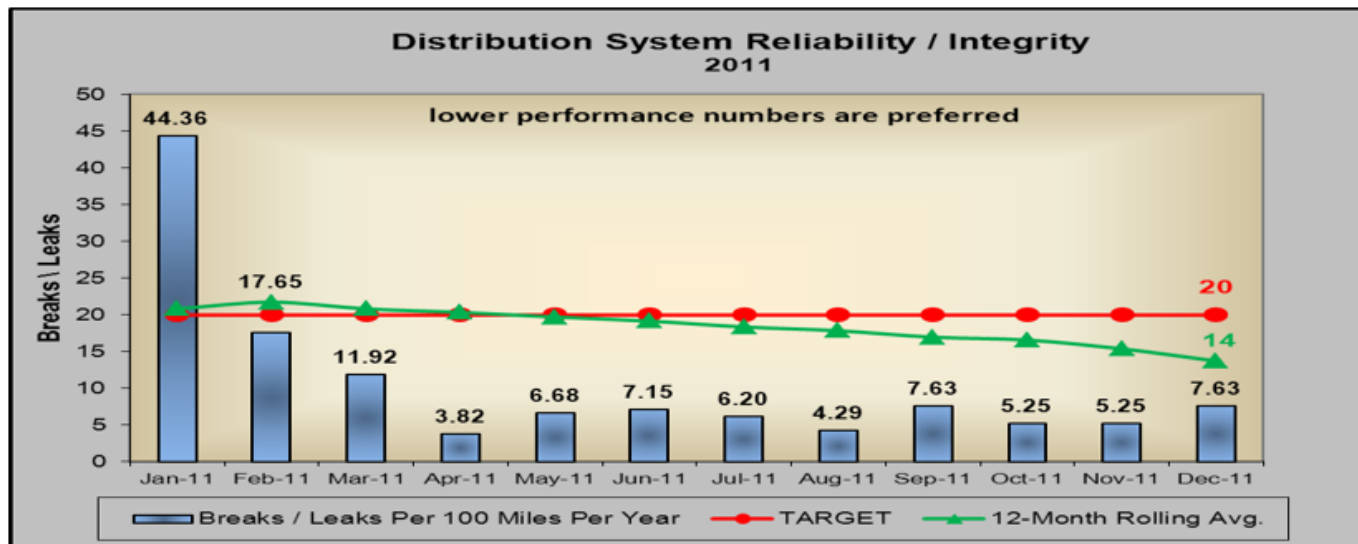


Implementation

- Communicate to stakeholders
- Start with just a few goals
- Make sure you are collecting good quality data
- Determine where to store data
- Review goals periodically
- Consider how goals may change your operation or management
- For each metric document data required, and where info is kept, how it was calculated

Water Distribution

10



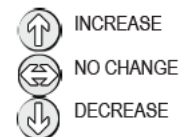
Definition: Indicates overall water distribution system reliability expressed as the total number of main breaks and leaks per 100 miles of distribution mains. Distribution system reliability has important implications as breaks can lead to customer outages, water quality concerns, low pressure to fight fires, and significant loss of water, which costs money to treat and pump. This metric reports the frequency of occurrence but does not measure the impact of events (i.e. duration or number of customers affected). This measure can show seasonal variations in performance such as a higher number of events during winter and summers during extreme temperatures, and should be monitored for discernable trends over time. **Current target is 20 breaks/leaks per 100 miles per year or less.**

Notes on Performance: On average, performance was better than target for 11 of the 12 months in 2011. There was a significant spike in the number of breaks/leaks in January, but since then the long term trend has showed steady improvement as represented by the declining 12 month rolling average. Mild winter weather and an active pipe rehabilitation & replacement program is credited with significantly improving performance.

3. MONTHLY & QUARTERLY KPI DETAIL REPORT

Reporting Division	WaterOne Key Performance Measures	Measurement As Of 02/28/2017	2017 Goal As Of 02/28/2018	2017 Year to Date or 12 Months to Date 02/28/2018	Variance (- % indicates not meeting goal)	Current Month Goal	Current Month Actual	Performance Rating
	Reported Monthly or Quarterly							
PRD	Conformance with Drinking Water Standards	100.0%	100.0%	100.0%	0.0%	100.0%	100.0%	G-
PRD	Conformance with WaterOne Water Quality Goals (Monthly)	96.7%	100.0%	97.5%	-2.50%	100.0%	95.0%	Y-
CCR	Composite Customer Satisfaction Performance Rating (qtrly)	84.6	80.0	86.3	7.88%			B-
CCR	Technical Water Quality Complaints/1,000 Accounts (12 MTD - Est.)	5.2	8.0	5.0	-37.50%	0.7	0.0	B-
CCR	Billing Accuracy - Bill Adj/10,000 Bills (12 MTD)	8.4	7.2	7.5	4.17%	7.2	5.6	Y-
HR	Turnover Rate (YTD)	2.9%		1.3%				G-
FIN	O&M Cost per Million Gallons Produced	\$3,211	\$4,027	\$3,843	-4.57%	\$3,644	\$3,678	B-
FIN	O&M Cost per Customer Account	\$50	\$63	\$59	-7.09%	\$27	\$26	B-
FIN	Actual vs. Budgeted Water Sales Revenue	\$11,965,772	\$12,523,224	\$12,399,981	-0.98%	\$5,874,718	\$5,632,948	G-
FIN	O&M Budget to Actual Expenditures	\$7,232,627	\$9,260,953	\$8,602,895	-7.11%	\$3,939,159	\$3,836,421	B-
DST	Water Distribution System Integrity - Avg leaks/100 miles (5 yr rolling)		37.0	33.4	-9.73%	3.1	1.6	B-
FIN	Active Customer Accounts vs. Projected	153	209	177	-15.31%	107	106	R-
FIN	Annual Capital Projects	\$206,362	\$10,820,000	\$497,798				G-
FIN	Master Plan Projects	\$110,923,267	\$167,521,327	\$111,046,993				G-
PRD	Conformance with WaterOne Minimum Pressure Goals (Monthly)	100.0%	95.0%	100.0%	5.26%	95.0%	100.0%	B-
PRD	Conformance with WaterOne Maximum Pressure Goals (Monthly)	100.0%	95.0%	100.0%	5.26%	95.0%	100.0%	B-
PRD	Facilities Maintenance- % of "Planned" Man-Hours	*	60.0%	86.6%	44.33%	60%	86.6%	B-
PRD	Facilities Maintenance - % Man-Hours of Emergency Work Orders	*	5.0%	1.44%	-71.20%	5%	1.44%	B-

* These KPI's are new to this report effective July 2017.



BLUE: Exceeds target > 2%
GREEN: +/- 2% < target
YELLOW: 2% - 5% < target
RED: 5% < target

2018 Key Performance Indicators (KPI) Measured Performance As Of 02/28/2018



5 Fire Hydrants

6 1 Number of hydrants not inspected within 5 years
7 2 Goal = 0

8
9 2 Hydrants in high density, commercial, industrial, and dead-end
10 hydrants not inspected annually
11 0 Goal = 0

12 3 Fire hydrants found by Fire Department that do not work properly
13 1.1% Goal ≤ 1% per fiscal year
14

16 Water Department

17 1 Test Universal Power Supply batteries
18 95.0% Goal = 100% tested annually
19

20
21 2 Telemetry Alarms
22 2 Goal < 7 per fiscal year
23

24
25 3 Customers with water bills estimated more than 3 consecutive months
26 2.5% Goal < 5% estimated
27

28
29 4 Annual non-revenue water usage (non-revenue water % is calculated by gallons
30 9% Goal ≤ 10% per fiscal year
31

32
33 5 Utility accounts past due with the annual backflow prevention testing requirements
34 0.0% Goal ≤ 5% out of inspection per month
35
36

Number of hydrants not inspected within 5 years: 2 (from Hydrant Maintenance spreadsheet)

Number of hydrants in high density, commercial, industrial, and dead-ends not inspected within 1 year: 0 (from Hydrant Maintenance spreadsheet)

Number of hydrants in system: 1500
Number of hydrants found by FD in current month: 5 (from Water Sewer Repairs spreadsheet)
Number of hydrants found in fiscal year: 17
% Hydrants found: 1.13%



Number of hydrants not inspected within 5 years: (from Hydrant Maintenance spreadsheet)

Number of hydrants in high density, commercial, industrial, and dead-ends not inspected within 1 year: (from Hydrant Maintenance spreadsheet)

Number of hydrants in system:
Number of hydrants found by FD in current month: (from Water Sewer Repairs spreadsheet)
Number of hydrants found in fiscal year:
% Hydrants found:

5	Fire Hydrants
6	1 Number of hydrants not inspected within 5 years
7	<input type="text" value="2"/> Goal = 0
8	
9	2 Hydrants in high density, commercial, industrial, and dead-end hydrants not inspected annually
10	<input type="text" value="0"/> Goal = 0
11	
12	3 Fire hydrants found by Fire Department that do not work properly
13	<input type="text" value="1.1%"/> Goal ≤ 1% per fiscal year
14	
15	
16	Water Department
17	1 Test Universal Power Supply batteries
18	<input type="text" value="95.0%"/> Goal = 100% tested annually
19	
20	
21	2 Telemetry Alarms
22	<input type="text" value="2"/> Goal < 7 per fiscal year
23	
24	
25	3 Customers with water bills estimated more than 3 consecutive months
26	<input type="text" value="2.5%"/> Goal < 5% estimated
27	
28	
29	4 Annual non-revenue water usage (non-revenue water % is calculated by gallons
30	<input type="text" value="9%"/> Goal ≤ 10% per fiscal year
31	
32	
33	5 Utility accounts past due with the annual backflow prevention testing requirements
34	<input type="text" value="0.0%"/> Goal ≤ 5% out of inspection per month
35	
36	

< >

How To

Jul

Aug

Sep

Oct

Nov

Dec

Jan

Feb

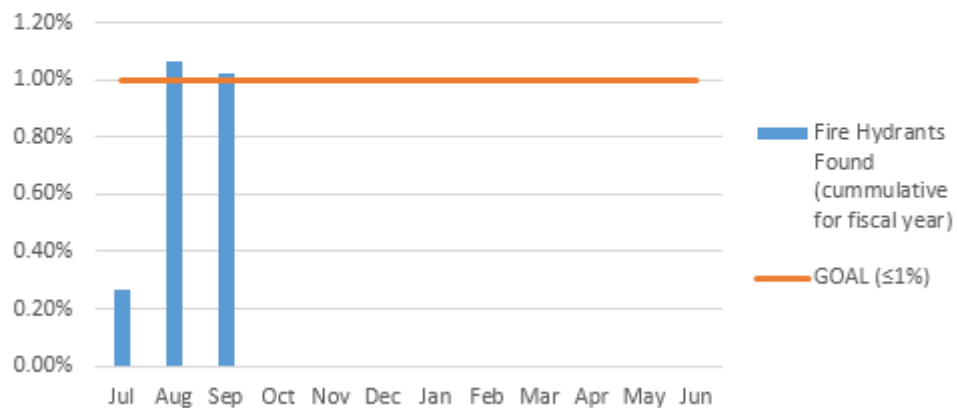
Mar

Apr

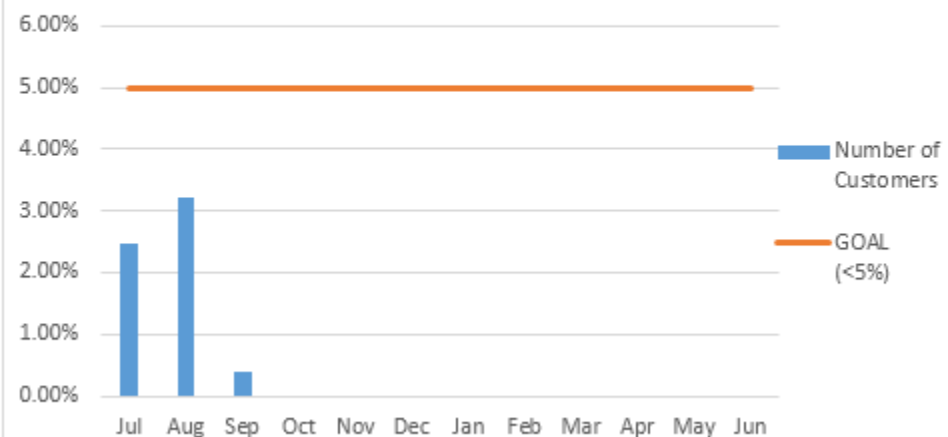
M



Fire Hydrants Found By Fire Department That Are Not Working Properly

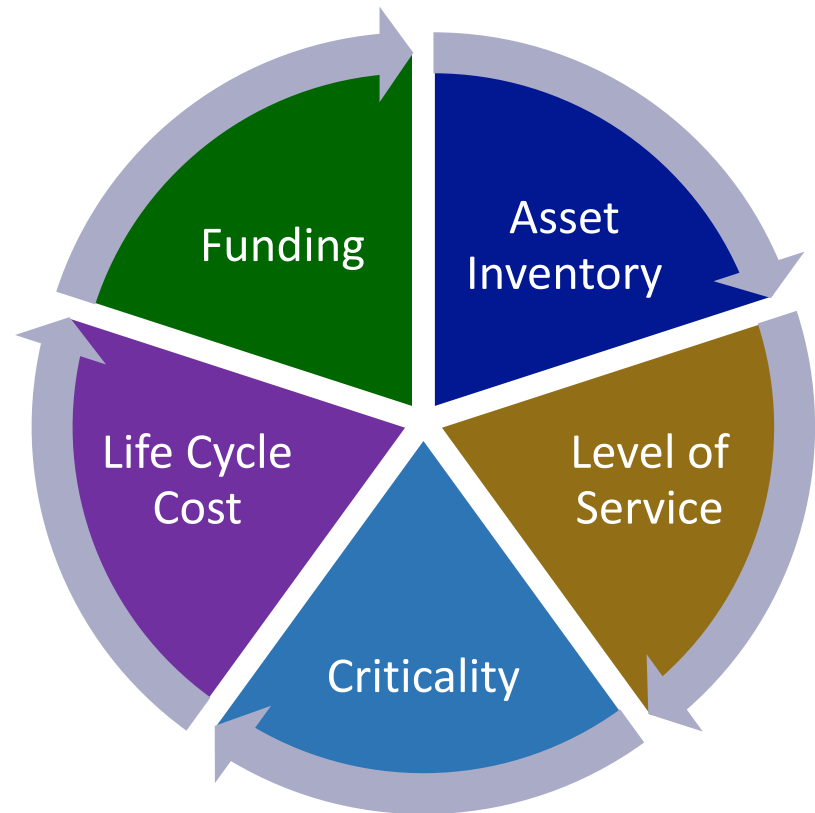


Customers With Bills Estimated More Than 3 Consecutive Months



Asset Management – How it Fits

- 5 Core Components
 - Asset Inventory
 - Additional equipment
 - Level of Service
 - Criticality
 - Help determine criticality
 - Life Cycle Cost
 - Provide level of service
 - Funding
 - Communication tool





Smart Management for
Small Water Systems

**Thank you for participating today.
We hope to see you at a future workshop!**

www.efcnetwork.org

