

## FINANCIAL CAPACITY PLANNING SERIES

- **Asset Management**
- Capital Improvement Planning
- Rate Structure

**F**inancial capacity is the ability to acquire and manage sufficient funds to effectively operate and maintain your water system. This handout series is designed to help you develop the basic tools needed to ensure revenue sufficiency and planning ability to meet future water system needs.



### DRINKING WATER SERVICES

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### DRINKING WATER SERVICES

# ASSET MANAGEMENT

## PRIORITIZING REPAIR AND REPLACEMENT

Pipes, wells and tanks all rust, wither and fade. Thankfully decay takes a long time, but infrastructure is expensive. How do we manage money appropriately to rehabilitate and replace such important capital investments? Monitoring and maintaining your water system's essential infrastructure is known as Asset Management.

How do you best manage your assets? First take inventory. Estimate the life span and importance of each pump, pipe and tank in regards to your goal of providing safe water. Then sketch out a schedule of replacement. Easy, right? In this handout we review how to prioritize asset repair and replacement.

## — A BASIC ASSET MANAGEMENT PLAN —

- DEFINE YOUR LEVEL OF SERVICE • TAKE AN ASSET INVENTORY • DEFINE CRITICALITY OF ASSETS • LIFE CYCLE COST YOUR ASSETS
- PICK A FUNDING STRATEGY • IMPLEMENT AND REFINE YOUR ASSET MANAGEMENT PLAN

**Asset Management sounds tricky**, but you probably are already doing it to some degree, and you definitely already know your system. Start simply:

- *What do you have, where is it, and how critical is it?*  
Identify the importance and value of the parts that make-up your water system.
- *Budget their replacement in chronological order.*  
When budgeting (i.e., prioritizing asset repairs and replacements), consider what you want to do. What are your water system's goals?

Tricky or not, if assets are not managed well a water system will eventually lose its battle against time and your customers will see water rates significantly increase. Answer the following key questions to create a basic Asset Management Plan.

### 1. WHAT ARE MY WATER SYSTEM'S GOALS?

#### DEFINE THE LEVEL OF SERVICE

Generally, your water system supplies clean water to everyone in your community when they want it. You can make your water system's goals more explicit than that by defining minimum pressure, response time, leakage rates, etc. The more you define your water system's specific levels of service, the easier it will be to create your Asset Management Plan. Having clear targets will considerably ease decision-making later (which you'll greatly appreciate) as you prioritize repairs and purchases.

### 2. WHAT DO I OWN AND WHAT'S REALLY IMPORTANT?

#### TAKE INVENTORY AND DEFINE CRITICALITY

You can create a simple inventory in 30 minutes if you do the following exercise:

- List on a sheet of paper your top 5 biggest assets and put a rough replacement value for each. Take the following notes on each item: condition (poor to good), useful remaining life (1-30 years), and where it is located.
- Now take a look at the list and rank the assets for what needs your attention first (criticality). Consider which are your most critical; what happens to your water quality, your safety, and your water system's reputation if the asset fails?

Asset Inventory (*Life = Useful Remaining Life)				
Asset	Criticality	Life* [Yrs]	Condition	Rehab/Replace Cost
Well	High	18	Fair	Rehab: \$10k
Pump	Med/High	8	Fair/Good	Replace: \$1k
Reservoir	Low	5	Poor	Replace: \$12k
Main Line	High	8	Poor/Fair	Patch: \$1k / Replace: \$9k

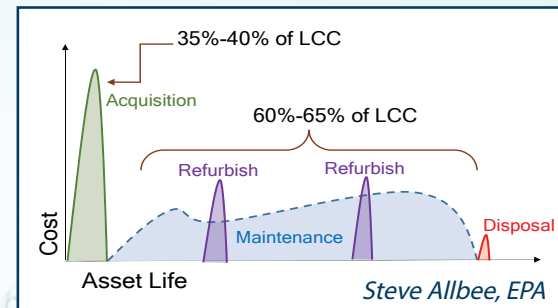
When you are done, not only have you developed key skills needed to evaluate the rest of your water system, you actually have a rough Asset Management Plan.

### 3. WHAT SHOULD I REPAIR & WHAT SHOULD I REPLACE?

#### 'LIFE CYCLE COST' YOUR ASSETS

Identifying how critical each asset is, and the consequence to your water system if the asset fails, goes a long way in helping you determine which assets to repair or replace first. It is also helpful to Life Cycle Cost your assets. Not unlike the question of when to replace vs. repair your aging car, Life Cycle Costing your assets helps clarify tough decisions of when to fork over the cash for new equipment. The goal is to minimize the work needed on an aging asset and choosing the right project to work on at the right time for the right reason. As seen below, the lion's share of an asset's true cost is spent on operation & maintenance and not its original purchase price.

#### Total Lifetime Cost of an Asset



Life Cycle Cost =

Initial capital costs  
+ life-time O & M costs  
+ capital rehabilitation costs  
+ disposal costs  
- residual value

Life Cycle Cost analysis can also help in early capital improvement planning efforts by helping you decide which alternative project solution is best. It shows the true long term cost of assets and allows you to better evaluate your options.

### 4. HOW SHOULD I PLAN TO PAY FOR ASSET REPLACEMENT?

#### PAY FOR REPLACEMENT OR PAY FOR FAILURE

By this point you have identified which assets to focus your energy on first. Now that you have a sense for how much money is needed and when, consider how your water system will cover the cost of asset replacement when maintenance costs get too high. If you are at a loss for how your water system will pay for this, financing options are available.

As a general guideline, a water system's annual maintenance costs should be between 0.5% and 2% of its total asset value.

**The Last Step** you'll need to take is to setup a regular check-in with your Asset Management Plan and the individual assets to assure the plan is current and accurate. Schedule it now!