

Best Management Practice

BMP B: Create an Asset Management Plan

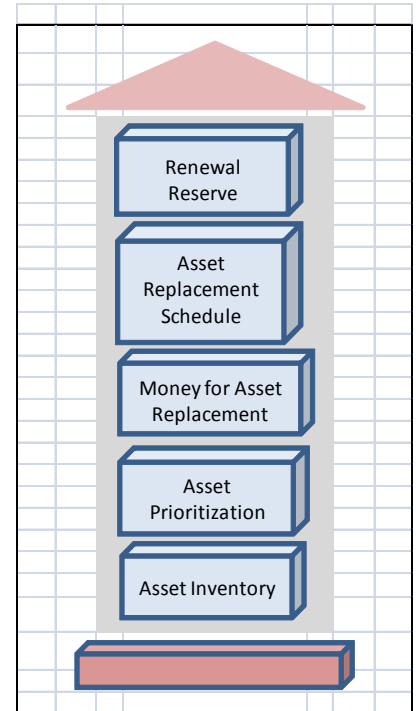
1 What and Why?

What is asset management? Asset management is a process that helps you to manage your assets so that you get the most value from them, and to have the financial resources to renew them when necessary.

Why do we need an asset management plan? Effectively managing your assets by planning for timely renewal and avoiding unexpected failures will help you to provide safe, reliable, and secure drinking water.

How do we prepare an asset management plan? Here are the main steps in preparing an asset management plan. These steps are explained further in following sections. For each step you create a building block.

- Step 1: Create an asset inventory
- Step 2: Work out the order to replace assets
- Step 3: Work out the money you need
- Step 4: Prepare an asset replacement schedule
- Step 5: Set up a replacement reserve fund



2 Challenges and Benefits

An asset management plan will help overcome certain challenges and provide several benefits:

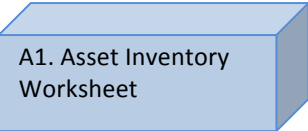
Challenges to Overcome	Benefits
<ul style="list-style-type: none">• You may have limited records and plans of your water system and of the individual components.• You may not know the location of components, their age or condition, or their remaining useful life• If you do not know the condition of your assets, you cannot work out when they should be replaced or how much money you will have to spend.• If you do not know how much money you will need to spend, or when it will be spent, you cannot do effective long-range financial planning.• Managing assets effectively often requires money to be spent systematically and may require increases in water rates.	<ul style="list-style-type: none">• Make better financial decisions; this will help in several ways such as such as meeting regulatory requirements and upgrading system security.• Reduce system “down-time” and the number of emergency repairs.• Prioritize rehabilitation and replacement needs and provide time to review cost-effective options.• Show customers and regulators that you are using their money effectively.• Improve your access to financing.

3 Steps to Follow

Follow the steps outlined below. Create building blocks using the worksheets and other tools provided.

Step 1: Create an asset inventory (See BMP A)

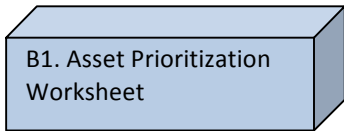
Your tangible assets are the things like pipes and pumps that make up your water system. Before you can create an asset management plan, you need to know what assets you have. If you have not already done so, implement BMP A: *Make an Asset inventory*. If the asset inventory was done more than year ago, review and update it by inspecting each component of your system and recording new information.



A1. Asset Inventory Worksheet

Step 2: Work out the order in which you replace assets

Once you have inventoried your assets, your next step is to prioritize your assets based on their importance to your system. Prioritization means giving an importance ranking to the assets in your system to help you allocate resources. There are several ways of prioritizing asset renewal and replacement. Typically, assets are prioritized based on their remaining useful life. Another method is shown in the box; choose a method that suits your circumstances.



B1. Asset Prioritization Worksheet

Factors involved in prioritization include:

Prioritization Methods

One approach is to prioritize in order from most critical to least critical:

1. Existing threats to public health, safety or environment
2. Potential public health, safety or environmental concern
3. Internal safety concern or public nuisance
4. Improved system operations and maintenance (O&M)
5. Nice to have ...

- What is its remaining useful life?
- How important is the asset for safe drinking water?
- How important is the asset to the operation of the system?
- Can other assets do the same job?

A water system is sometimes one of several responsibilities of a community. Other factors can influence which water system projects are funded and when they are completed. For example, in some small communities, distribution system rehabilitation and replacement is tied to the road repair schedule and annual budgeting. Developing an asset management plan and prioritizing your assets will help you work out when you should replace your assets so as to not jeopardize water delivery. You may have to work with your community to develop a

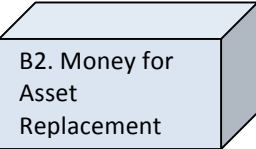
replacement schedule that works for all parties.

An asset management plan linked with long-term planning will help you forecast your financial needs well into the future and develop a rehabilitation and replacement schedule appropriate for your system. At this point in the process, you may want to tell your customers that you are undertaking organized asset management, and communicate the benefits to them.

The worksheets associated with this BMP provide information on the useful life of a range of assets. Certain assets in your system may not be shown: in this event look up the references provided.

Step 3: Work out the money you need

You can show the money you need for asset replacement using the Money for Asset Replacement worksheet. On the worksheet: list your assets, their replacement priority, the year until replacement is needed, the estimated cost and the annual reserve required.



B2. Money for Asset Replacement

Work out how much it will cost to rehabilitate and replace them as they deteriorate. Gather information on all of the costs associated with the rehabilitation or replacement of an asset, such as equipment purchase, installation, pilot tests, labour charges, cleanup, and disposal of the replaced asset. For information about what rehabilitation or replacement might cost, ask suppliers and consultants and talk to other systems people about the cost of their replacements. You may also find useful information on the WaterBC Best Management Practices web page: <http://www.waterbc.ca/resources/best-management-practices/>


Step 4: Prepare an asset replacement schedule

Previous building blocks help you to work out the remaining useful life of an asset and the priority in which it should be renewed or replaced. You can summarize this information for all assets on the Asset Replacement Schedule.

Preventive Maintenance

A Preventive Maintenance Program will help to maximize the useful lives of your assets, avoid problems and reduce or delay replacement costs.

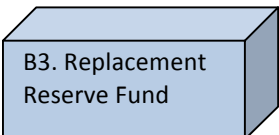
To protect public health and deliver safe water, you need to rehabilitate and replace your assets in addition to operating your water system. Many systems need considerable lead-time to budget and gather necessary funds. By developing an asset management plan, you will be able to allocate your resources in the most efficient way.



B3. Asset Replacement Schedule

Step 5: Set up a Replacement Reserve Fund

A key element of asset management is having a Replacement Reserve Fund, where you accumulate money for future asset renewal. This reserve fund should be protected from other use. The Replacement Reserve Fund¹ worksheet leads you through the steps necessary to determine how much money to put in reserve each year to fund your highest priority activities. The worksheet shows you how much money to set aside for your replacement reserve fund this year. It's important to make sure your customers understand that, although the total reserves needed each year may seem like a lot of money, it is easier to put aside \$200 a year to replace, say, a chlorinator, than to come up with \$2,000 once it fails. Customers on limited incomes often cannot suddenly find significant sums to pay for unexpected repairs.



B3. Replacement Reserve Fund

¹ Your Replacement Reserve Fund (RRF) is partly like funded depreciation of your waterworks system. It ensures funds will be available to replace system components when required. Depreciation is the portion of the system that is being used up annually and is an expense of the period. It is not good practice to dispense with a RRF in an attempt to keep rates lower for current customers. This results in intergenerational inequity, because future customers will have to pay much higher rates and be faced with serious "rate shock".

Your system's finances and costs of new assets can change from year to year. It is important to update this worksheet annually. This will ensure that you have enough reserves to cover necessary rehabilitations and improvements. This has several other benefits; for example, if you have enough money in the bank, it may be easier for individual property owners to sell their homes because new buyers have some assurance that they won't suddenly receive an unexpected large charge. Note that this worksheet only calculates additional funds to renew and replace assets. Standard operating and maintenance (O&M) costs, for example, utility charges and chemicals for disinfection, are not included in the calculations on this worksheet.

Key decision makers (for example, the trustees or key property owners) want to understand the financial requirements related to the renewal of your assets. The draft version of this BMP should be presented to key decision makers at an early stage, and your customers informed also. This information should be reviewed annually and modified as necessary.

4 How long will this take?

The table below shows a typical timeframe to prepare this Best Management Practice for implementation. This includes communication time to discuss details with key people, bring together individuals who can contribute to the process, and administrative time to assemble the information needed for the individual building blocks. Preparation of each building block, perhaps in the form of a worksheet or checklist, may only require one or two hours, once you are familiar with the process.

Expect to revisit your asset management plan at least annually to update information. This review and update will take less time than the initial planning process, and is important for good financial decision-making.

	Building Block	Weeks >	1	2	3	4	5	6	7	8
1	Asset Inventory Worksheet									
2	Asset Prioritization									
3	Asset Replacement									
4	Renewal Reserve Fund									
5	Asset Management Budgeting									

5 More Information

More information on the topic of this Best Management Practice is available from the following:

Drinking Water Health Authority Contacts:

http://www.health.gov.bc.ca/protect/dw_ha_contacts.html

Drinking Water Resources and Associations:

<http://www.health.gov.bc.ca/protect/dwresources.html>

WaterBC:

<http://www.waterbc.ca/resources/best-management-practices/>