

## 2. Understanding your municipality's financial position

### a) Current asset investment

Asset management recognizes and plans using the full life cycle costs. Life cycle costs are the total cost of an asset throughout its life including planning, design, construction, acquisition, operation, maintenance, rehabilitation, and disposal costs. Two key questions to consider are:

- What is the necessary cost to replace the current asset (replacement value); and
- What value is the current asset considering its age (current depreciated value)?

#### A. Replacement value

All measures of value are useful for asset management. Historical cost is a true and accurate record of the value of an asset when it was initially installed; however, current replacement cost is a better measure for making informed decisions. Knowing the current replacement cost is beneficial because it can be determined with reasonable confidence using existing contracts and data, as well as labour rates and suppliers' price lists. Moreover, it can be easily understood in terms of magnitude and is directly comparable across all assets and can be used along with the asset age details to determine the current depreciated value.

The replacement cost should take into account costs associated with material, plant, labour, engineering fees, administration costs and all other costs necessary for the replacement of the asset under typical conditions. This unit can then be used in the asset inventory data to calculate the current replacement cost of each asset. The calculation is as follows:

**Typical unit rate x modifier x asset data (length, area or number of) = current replacement value**

Initially, a modifier will have a value of 1; however, as more details are known regarding the circumstances and conditions of each asset, the value of the modifier can be changed to reflect the cost impact of local conditions, which may increase or reduce replacement costs.

#### B. Depreciated value

Asset management equally assesses the lifespan of each asset type, which illustrates how long the average asset will last, taking into account local and typical in-service conditions, before it needs to be replaced. The current depreciated cost for each asset can be calculated as follows:

**(Expected lifespan of asset x modifier) – Current asset age = remaining life**

**Current replacement value/Expected lifespan of asset = per annum depreciation**

**Remaining life x per annum depreciation = current depreciated value**

The modifier for lifespan will equally commence at 1; however, as more details are known about the circumstances of the asset, the modifier can be attuned to illustrate the ageing impact of local conditions.

### **b) Operational and maintenance costs**

Asset management enables a system to regulate the lowest cost options for providing the highest level of service. The ultimate goal of understanding and tracking life cycle costs is to save money. An asset management program assists municipalities in making risk-based decisions by choosing the right project, at the right time, for the right reason. It predicts the cost and timing of future infrastructure expenditures.

- A. Operational costs:** costs associated with the operation of the asset or with a service being provided using the asset, including but not limited to, pipe cleaning, hydro, labour costs for inspections and road sweeping. Operational costs are estimated from general industry knowledge for this type of work and services.
- B. Maintenance costs:** costs that relate directly to the physical rehabilitative work to a particular asset or group of assets. It is important to remember that the physical repair of an asset solely reinstates the asset's function. It does not replace the asset entirely and it does not extend the life of the asset beyond what was initially expected. Maintenance costs may be obtained from industry benchmarking exercises, research studies or estimated from the municipalities own budgets.

#### **Example – Road Pavement:**

- Pavement sweeping is an operational activity
- Crack sealing repairs are a maintenance activity
- Re-surfacing is a renewal activity

Tracking operation and maintenance costs will assist municipalities in making informed decisions regarding when to intervene with the right treatment, in order to maintain cost-effectiveness, long-term sustainability of assets and the services they provide.

#### **Best practices include:**

- Moving from reactive maintenance to predictive maintenance;
- Knowing the costs and benefits of rehabilitation versus replacement;
- Analyzing lifecycle costs, especially for critical assets;
- Deploying resources based on asset conditions;
- Collaborating with your municipality's finance department and all other working groups associated with assets across your municipality to develop a unified cost recording structure for the organization;
- Provide training to municipal staff regarding the differentiation between maintenance costs, operation costs, renewals or capital costs;
- Separately record/track operational and maintenance over 5 years (ideal); and

- Track maintenance costs against the relevant assets on which the work was done.
- c) Future capital costs**

Informed financial decisions and developing an effective long-term funding strategy are important steps to the implementation of an asset management program. Knowing the full economic costs and revenues produced by your infrastructure assets will enable you to determine your system's financial forecast and adequately plan your system's long-term funding strategy.

Capital costs refer to costs for new assets and costs for replacing existing assets as they age. Future capital costs should be determined following a 20-year cost forecast. In circumstances where municipalities have yet to develop their master plans for key asset groups, the following procedure for determining renewal costs could be helpful.

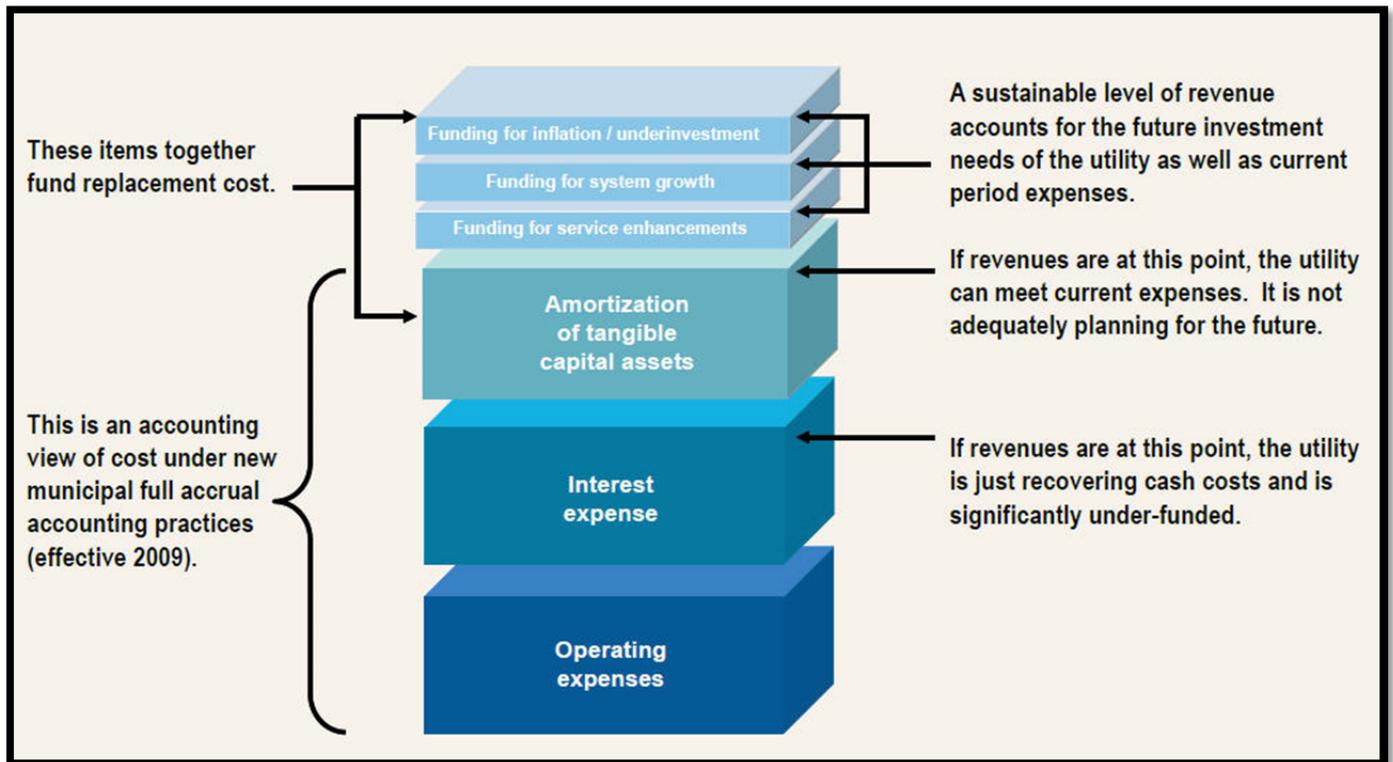
**A. Renewal costs are determined by four steps:**

- a. Determine the likely fail year based on install date and expected life span = PSAB asset data;
- b. Determine typical replacement costs for each asset type = current unit costs;
- c. Determine current replacement cost of each asset = current unit rates
- d. Using the likely fail year and the current replacement cost to graph future renewal costs by year.

**B. Capital new asset costs**

In order to determine capital new asset costs, an evaluation needs to be done to determine what new assets will need to be built and when. The cost of asset renewals should be based on the replacement cost of the assets with modern equivalents but without increasing the size or service. New assets may be required to support population growth, to comply with new standards/requirements and to support community development.

## Example: A Building Blocks Approach to Determining Cost



### d) Funding sources

Funding sources refers to resources where funding for infrastructure management could be generated from and an estimate of much that funding will be. Municipalities' primary funding sources are generated from taxes, fees and charges, reserves, grants and loans. Knowing your funding sources are an important step in determining if current and expected levels of service are affordable, in addition to determining whether or not your asset management program is sustainable. Completing an assessment of income from your aligned funding sources will equally forecast potential interruptions of funding, identify funding shortfalls and anomalies, allowing your municipality to plan and react accordingly.

Although for most organizations, the Chief Financial Officer is responsible for assessing future funding, it is recommend that the review of income versus expenses be done as a collaborative process between all departments. The goal of this joint assessment is to ensure that all possible resources, risks, potential financial vulnerability and suitable solutions are being identified, in addition to ensuring consensus within your municipality.

#### Important to questions to consider are:

- Does your municipality have enough funding to maintain your assets for your required level of service?

- Is your rate structure sustainable for your system's long term needs?

**Best practices include:**

- Revising the rate structure;
- Funding a dedicated reserve from current revenues, such as developing an asset annuity; and
- Financing asset rehabilitation, repair, and replacement through borrowing or other financial assistance.
- Coordinate capital spending across multiple assets. A good example is coordinating water and wastewater repair/replacement with municipal road replacement.

**Example - Details of the following funding sources should be known:**

- a) Taxes
  - Details of the amount of current revenue from taxes
  - Details of potential revenue from taxes
- b) Revenue
  - Details of the amount of revenue and source for non-tax revenue
  - Details of potential revenue and source for non-tax revenue
- c) Funding rules, regulations and limitations
  - Details of funding source for operations expense
  - Details of funding source for maintenance expense
  - Details of funding source for asset renewals/replacements
  - Details of funding source for capital works, including new assets and improvement upgrades
  - Details of any pre-approved budgets or cost predictions for future works
  - Any limitations, regulations or requirement relating to tax revenues
  - Any limitations, regulations or requirements relating to non-tax revenues.

\*Note that should be a total per annum estimated income preferably with additional details giving a breakdown of the total by revenue source.