ENVIRONMENTAL FINANCE CENTER

Asset Management for Stormwater

Once a community has installed infrastructure to handle its stormwater, the next step is to manage the stormwater infrastructure in the best way possible to ensure the assets are kept in proper operational order, will last as long as possible, and are replaced when necessary. This type of management is called "Asset Management." Asset Management represents a way of thinking about assets in a strategic way so that they are sustained over the long-term at the lowest overall life cycle cost while meeting the needs of the community.

Although it may sound complicated, it doesn't need to be. Asset management is a self-educating process and can be done by any organization. The process relies on what you already know about the assets and uses the resources available to you. Just starting the process is the best way to learn about asset management. Because it is an on-going, long-term process, it is always possible to make adjustments to the asset management activities over time.

There are five core components that make up an asset management program. These components are not linear – they can be completed in any order – and they are very interrelated. The five core components are: current state of the assets, level of service, criticality, life cycle costing, and long-term funding. A brief description of each of these components is contained below.

Current State of the Assets

A fundamental aspect of the overall asset management process is determining what physical assets make up the system. In this component, it is necessary to answer the following questions:

- What assets make up the stormwater management system?
- Where are the assets located?
- What is the useful life remaining of each asset?
- What is the value of the assets?
- What is the current condition of the assets?
- Does the asset require energy?

This step involves taking an inventory of your assets so that you know what components are in your system. You will also want to collect information on the assets you own, such as: date of installation, condition, serial number, manufacturer, suggested maintenance, type of material, size, etc. The information can be stored in a computer program, such as a spreadsheet or database, or it can be stored using a commercial product specifically designed for asset inventory. This component also involves developing a map of your stormwater assets so you know where your assets are located.

Level of Service

It is important to know what you want your assets to provide for your community. We refer to this as the level of service. This is the step where you state what it is you want your assets to do. For example, you may want your assets to be able to contain a storm of a certain size without flooding streets.

Level of service is directly tied to cost. Higher levels of service mean higher cost. It is important for community members who will be paying for installation and upkeep of stormwater assets to understand this connection. If they want you to provide a higher level of service, you can do that, but it will cost them more money. The more directly the community members understand this connection, the easier it will be for you to receive the money you need to install and maintain your assets.

Criticality

Not all assets are equally important to the system. Some assets are going to be much more important than others. It is important to be able to identify those assets that are more critical because those assets require more attention. There are two components of criticality: how likely the asset is to fail and how serious the consequence is if it does fail. An asset that is highly likely to fail and will cause serious consequences if it does fail is much more critical than one that is unlikely to fail and it doesn't matter if it does.

Once the assets that are more critical to the system are identified, extra efforts can be made to ensure that these assets are properly maintained and are replaced when needed to prevent catastrophic events from happening.

Life Cycle Costing

Once assets are installed, there are two major activities related to them. One is the operation and maintenance (O&M) of the assets and the other is replacement of the assets. O&M represents those day to day activities that are done to the assets. We know that doing more preventative and routine maintenance on our assets can help extend their life, but we also know that these activities take time, money, and resources to complete. Therefore, we have to balance what to do, when to do it, and which assets to do it on. The best way to make these decisions is to consider the criticality – or risk – of the assets. We want to focus our preventative maintenance program on those assets that are most critical to the system. We don't want these assets to fail, so we want to do all we can to prevent the failures.

At some point, all assets will have to be replaced. The question always arises of when to replace the assets. Similar to the situation with the O&M activities, it is important to think of risk when considering asset replacement. Those assets that are of greatest risk or criticality should be replaced sooner before a failure occurs and those assets that are low risk should be allowed to fail prior to replacement.

Long-term Funding Strategy

Managing assets always requires adequate funding. Funding is needed to perform routine and preventative maintenance, to hire and pay for staff, to repair assets, and to replace assets. It is important to determine how much money is needed to properly sustain the stormwater assets over time and to have a means of obtaining the needed funds. There are many ways of getting the necessary revenues. No matter what method is used, it is important to involve the community members who will

benefit from the stormwater assets in the process so that they are supportive of the revenue generating approaches used. They need to understand that the assets are providing a service to them and that they need to pay for this service. The more directly they understand this connection, the better able the community will be to collect and maintain the necessary revenue.

Getting Started

The best way to get started with asset management is to just do it. Choose one area that seems reasonable to you and start there. For example, if the community does not have a map of its stormwater assets, that might be a great place to start. A map can be completed at any sophistication level from a hand-drawn map to a map using free software, such as Google Earth or Mapquest, all the way to a Geographic Information System (GIS) map.

Once you jump into asset management, you will learn what information you need to have and then you can start collecting it. As you collect the information you need, the program will improve. You can start with any of the five components and you will naturally be led to each of the other components.

Measuring Progress

It's very important to measure the progress of your program. You want to be able to tell your staff, your elected officials, and your community members how well your program is working. One tool to help measure progress is the Asset Management IQ tool. This tool is a series of 30 questions that are all multiple choice with a score of 0 to 5 points per question. The 0 point answer indicates that nothing is being done in this area and the 5 point answer shows the organization is at the level they need to be for that item. It is recommended that a community undertake the IQ test at the very beginning, prior to starting any activities in asset management, in order to establish a baseline. Then, the IQ can be repeated on a routine basis, such as once a year, to measure the improvement in asset management implementation. Because the 30 questions are divided into six sections (one general section and one section for each of the five core components), by comparing scores from the individual sections, it is possible to tell how the community has improved in each part of the process. This tool can identify strengths in the program – places where the community is doing very well in asset management implementation as well as weaknesses in the program – places where additional activities may be required. The IQ tool is available on-line through the Environmental Finance Center Network.

Resources

There are many resources to help a community establish an asset management program. One tool is the Environmental Finance Center Network's A.M. KAN Work! tool. This tool was developed with funding from the Kansas Department of Health and Environment (KDHE) and is meant to be a self-help guide. It contains video clips of communities who have engaged in asset management activities to provide opportunities for peer to peer learning. In fact, one of the best resources for any community is another community that is also engaged in asset management. It is important to reach out to other people who are engaged in asset management and share experiences, advice, what worked well, and what didn't work so well. Sharing this type of information can really help you advance your own program.