



## **12 Hour Asset Management Primer Workshop – DRAFT MEMO City of Burlington, Vermont October 15 & 16, 2015**

On October 15<sup>th</sup> and 16<sup>th</sup>, 2015, a workshop was held at the Contois Auditorium to initiate discussions regarding the development and implementation of a Strategic Asset Management Plan. The workshop was facilitated by members of the Hoyle, Tanner asset management team as well as Megan Moir from the City of Burlington Water Resources Division. The goal of the two day primer workshop was to provide the City of Burlington’s key supervisory staff from all departments with a basic understanding of asset management and what is needed to develop and implement a successful asset management program. A four-hour presentation was given by Hoyle, Tanner to introduce the attendees to basic asset management principles, followed by three breakout sessions, where staff joined group discussions to address the 13 topics identified to the right. Attendees were given the opportunity to apply asset management principles to their specific departments and daily work activities. There was a diverse group in attendance, and group participation was outstanding. The information compiled from the breakout sessions provides an initial understanding of the challenges and investment needed to develop and implement a successful asset management program for the City.

The breakout group process allowed the asset management team to facilitate discussions focusing on the staff’s current needs and challenges. Due to each group’s functional diversity, different topics had different

### **Breakout Sessions**

**Getting Started**

**Organizational Challenges**

**Preventative vs. Corrective  
Maintenance**

**Level of Service Development**

**Inventory**

**Condition Assessment**

**Understanding Consequences of  
Failure to Prioritize Assets**

**Return on Investment (ROI) & Life  
Cycle Costing**

**Where Do We Start  
(Implementation)**

**Inventory (Implementation)**

**Training (Implementation)**

**CMMS (Implementation)**

meaning to the various attendees. Understanding these differences is an important aspect of building a successful asset management implementation plan.

## GETTING STARTED

The “Getting Started” breakout group focused on how to establish “buy-in” to the concept of asset management at all levels within the City organization, including the issue of obtaining financial support to effectively complete this project. The discussion also highlighted a need to have a point person or asset management champion (champion) that will promote communication and training between various City departments. The champion’s responsibility would be to coordinate, consolidate and relay information learned through implementations in the various City departments as the program progresses. The champion will also be responsible for understanding the variety of challenges that City departments may have during their integration, such as: current software; database; staff levels and training; and whether they are managing facility (vertical) vs. GIS (linear) assets. The benefit of assigning a champion is that understanding and workflows may be streamlined to reduce process redundancies.

The process of identifying gaps will start in the identification of goals, then working backward to see what is needed to meet those goals. As part of the workshop discussions people resources, usefulness of the data, technology, and unified software were all identified as current gaps.

## ORGANIZATIONAL CHALLENGES

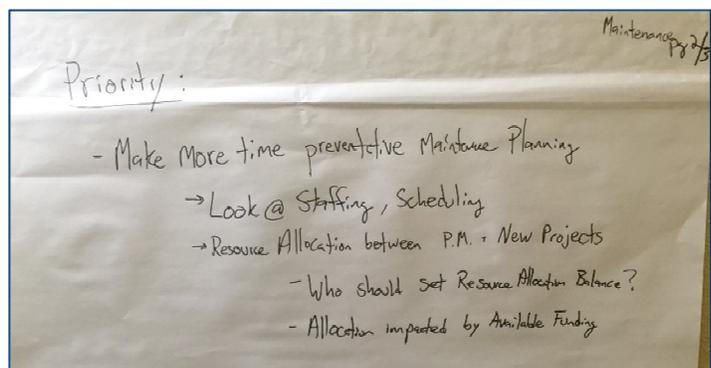
Buy-in at all levels of the City organization was identified as a key to success in the “Organizational Challenges” group. This group identified time constraints on existing staff as the greatest challenge threatening the success of the asset management program. In addition, making sure that the **right** data is collected and becomes available to the staff is imperative. The process of capturing additional data from the operational and maintenance staff will require training to ensure staff understanding of the purpose and value of this information. To reinforce buy-in at all levels, it is important that management provide feedback to the staff demonstrating the value of the data collected prompting further improvements in future data collection. Ensuring staff is properly trained, understands the technology, and how to use it is important to the overall program success.

The most likely path for success will be to designate a champion within each department and develop a “train the trainer” approach. To facilitate the ongoing success of the program, it will be important to prioritize asset management efforts within employees’ job descriptions and responsibilities, and recognize success.

## PREVENTATIVE VS. CORRECTIVE MAINTENANCE

This group stated that due to time constraints and existing workflows, preventative maintenance initiatives can only be accomplished after corrective maintenance and new project assignments have been completed. As a result, preventative maintenance is lagging behind, which eventually requires that more assets require more costly corrective maintenance.

A major focus of the discussion was on the many projects that current staff is involved in and the time/scheduling limitations preventing their



***Prioritizing the Maintenance in Accordance with Available Resources is Key to Making the Program Successful***

completion. This provided insight into the general feeling that the staff is currently overwhelmed.

As part of the Asset Management Policy and the final developments of the implementation plan there needs to be communication and clear understanding of priorities as the City implements an asset management system. Goals and priorities need to be established that look to the long-term advantages of the implementation of a comprehensive asset management system and an understanding that there may be less focus on daily “fires”.

## LEVEL OF SERVICE DEVELOPMENT

The “Level of Service” group started by prioritizing the system assets which already have agency-regulated levels of service including VOSHA’s health and safety requirements, EPA’s and DEC’s environmental requirements, as well as others. It was recognized that capital investments should have an associated and measurable increase in level of service as part of the overall project justification.

A primary goal of the plan is to identify the current level of service. After establishing the departments’ levels of service, they need to concur with management’s expectations and acceptance. Various aspects level of service were discussed and it was realized that various datasets are currently available (flows during hydrant flushing, energy usage, etc.). Utilizing these datasets could be advantageous in the development of level of service documentation.

## INVENTORY

The word inventory means different things to different people and this group discussed many of these differences. These differences range from spare parts to horizontal and vertical assets. There is also considerable variance among the functional asset types such as, water, sewer, buildings, rolling stock, airport, etc. Also, different departments have different needs which may require additional information on the same assets. By understanding the needs and standardizing the information collected on each asset, the information can be utilized to meet the needs of all departments.



*Inventory Sources*

Another challenge discussed was how to collect and track inventory information. New technology (bar codes, RFID tags, more GPS equipment) could be evaluated to assist in the standardization of inventory data collection. Other questions that must be answered include: Where is this data kept? Who has access to it? Who needs this data? It is important to understand how inventory data will be maintained to ensure decisions are made using the most accurate data.

## CONDITION ASSESSMENT

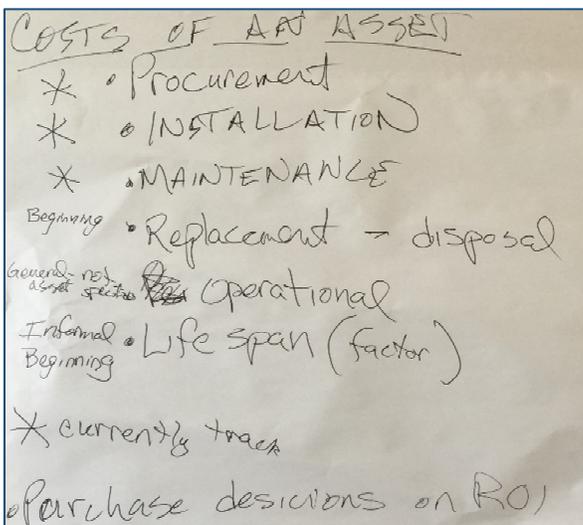
The “Condition Assessment” group understood this was a large task that would need to be broken down into steps to make it more manageable. By walking through the steps, the group defined the difference between condition assessment and inspection. The group felt that they would start by developing a minimum acceptable condition for an asset which would be the basis for the initial inspection of the asset group. Once the inspection is complete, the detailed condition assessment will start with the assets that, in the opinion of the inspector, have fallen below the acceptable minimum standard. This will provide information that will help in the allocation of

resources, such as capital investment, in cases of structural failures; increased maintenance in cases where condition is failing due to lapses in maintenance or capital upgrades in situations where the asset is not meeting minimum performance needs. The condition assessment is used to develop other metrics that would provide the information needed to make better decisions.

## UNDERSTANDING CONSEQUENCES OF FAILURE TO PRIORITIZE ASSETS

The discussion in this group revolved around the need to develop an asset “report card” which would include both the condition assessment and the consequences of failure of a particular asset. By utilizing the report card format, the City can ensure that underground assets are being addressed with the same importance as those above ground. Currently, performance management (public complaints and service calls) dictate the project actions and investments allowing unseen assets to frequently drop below minimum service levels. The report card would provide an asset risk rating based on the utilization of both condition and consequence of failure metrics allowing resources to be expended on high risk assets.

The group also recognized that it was important to understand the consequence of failure of various assets. Failure can have many different impacts in regard economics, environment, public confidence/trust, health and safety. The development of consequences of failure may need to start with simple concepts that are informed by outside resources (such as the AWWA, EPA, and other communities).



## RETURN ON INVESTMENT (ROI) & LIFE

To make wise investment decisions, it is critical to have the life cycle cost information for assets as well as projects. The development of key performance indicators will ensure measurable societal costs. These costs are extremely valuable as decision makers evaluate them compared to desired levels of service.

The City needs to develop policies that reflect the goals and values of the community. This is a drastic change from the low bid process some use and will be challenged by City decision-makers if there are not well-defined policies and data to substantiate the need for investment.

**Staff Members Recognized the Need for Analyzing Not Just the Initial Purchase Price, But Also the Life Cycle Cost Before Purchase**

## WHERE DO WE START (Implementation)

This group focused on the Water Resources Department because it was understood that this was the initial department the asset management program was going to serve. This group has started preparing for this change and the staff determined that the process will start with frontline staff meetings to gather information needed to develop the assessment and gap analysis. During the face-to-face meetings (the next phase of the project), the asset management team will review the information currently being gathered and utilized, Standard Operating Procedures (SOP), the work

order system, and staff challenges. To facilitate an effective and efficient interview process, survey questions will be issued prior to the scheduled interviews to allow staff the time to gather information and prepare for their interview.

## INVENTORY (Implementation)

The need to develop a standard for collecting the inventory and the format that would be used city-wide was discussed. The source of this information may come from many locations such as record drawings, current CMMS, GIS, and the financial department.

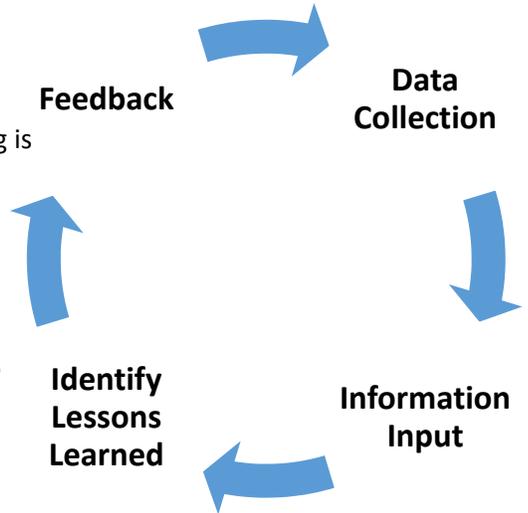
The group understood that they have current inventories which are nearly complete such as: vehicles, trees, sidewalks and roadways, and fleet. There are many other inventories which need to be evaluated as part of the gap evaluation.

## TRAINING (Implementation)

Realizing that effective training is essential to the success of the asset management program and that everyone involved is both a student and a teacher, this group provided many out-of-the-box ideas such as the example of “tailgating sessions”. They also realize there are many resources and opportunities already available including training videos and job shadowing. Through the development of SOPs, the combined experience will be captured as future training needs are defined in the detailed plan.

## CMMS (Implementation)

This group captured a lot of information needs. It is very important to understand the varying needs of the various departments and their customers. It will also be important that the software reflects and improves upon the current workflow.



*Staff Stressed the Importance of a “Continuous Improvement” Cycle Necessary for the Program to be Successful*

### Software Necessities

- Track Time & Job Cost**
- Provide Inventory Information**
- Scalable Program (Increase Capacity)**
- Work Real-Time & Off Line**
- Dashboard for Quick Summary**
- Track & Measure Level of Service**
- Work Order Filter**

The ability to track the time and cost associated with a project, provide information on inventory, be able to work in both real time and off line, provide the a dashboard to quickly summarize data in real time, to track and measure Level of Service, to filter work orders (Triage, preventive, corrective, predictive and etc.) are critical features. This list of needs was developed during a short time period and only reflects the first step in understanding the software requirements. This list will continue to expand during future phases of the project and the goal is to make sure it reflects the City’s needs and goals for the future.

The asset management system workflow should be a reflection of the current workflow to allow the new software to be more intuitive for the staff. This group also pointed out hurdles that will need to be addressed outside of the computerized asset management program such as funding, staff resources, a common direction for all City departments, support from IT & GIS, and development of SOPs and policies.