Saving Time and Money (and Trees) with Inventories

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Humans naturally gravitate towards large trees. If you take a group of kids on a nature walk, it is often the largest and oldest trees that captivate their attention. Whether it is shade, beauty, or tree-house potential, there is simply a magnetic draw to the largest trees. Unfortunately, it can take a lot of time and effort to grow a tree. Once mature, large trees are nearly impossible to replace if severely damaged. As a result, scores of arborists, nurserymen, and landscape professionals have dedicated their entire career to providing tree health care to promote tree health, safety, and longevity.

Aside from our obvious preference for large, majestic trees, trees have become more and more recognized as an asset -- an investment. Tools like the National Tree Benefits Calculator (http://www.treebenefits.org) and the i-Tree suite (http://www.itreetools.org) help calculate the benefits that trees provide and place a monetary value on these benefits and the tree itself. Professional arborists are likely familiar with the Council of Tree and Landscape Appraisers *Guide for Plant Appraisal* which is a system for developing a monetary value for specimen and landscape trees. Recent scientific research suggests that trees in front of a house can increase home value by as much as 6.4%[1]. Combined, this shows that trees continue to grow in value over time -- but only if they are afforded the proper care to reduce issues and extend longevity.

Taking care of one tree can be hard enough, but managing an entire population can prove to be very challenging. To assist in the management of large populations of trees, arborist have developed innovative tools that help track and monitor trees. Chief among these is a tree inventory, which is a database of information about a particular population of trees. At a minimum, an inventory includes information about each tree's location, species, and size. Depending on its use, additional attributes such as the tree's condition, maintenance recommendations (e.g. pruning, fertilization, removal), tree risk assessment, conflicts (e.g. overhead utilities, hardscape), or other field observations are often included included as well.

Most tree inventories include all the trees within a specific property or area of interest. In cities, tree inventories are regularly conducted for the trees along streets or in parks. Some inventories, however, concentrate on specific objectives such as trees susceptible to a pest or disease (e.g. emerald ash borer; *agrilus planipennis*), or focus on those posing risk to life or property. In other cases, data may be collected on a sample or subset of a trees and used to extrapolate information on the entire population. Ultimately, there are multiple ways to conduct a

[1] Donovan, G.H., and D. T. Butry. 2008. Market-based approaches to tree valuation. Arborist News 17: 52-55.

tree inventory based on priorities, budget, and management objectives. With the vast array of options, an inventory can be tailored to meet a range of project needs and budgetary limitations.

While municipal foresters have been the primary users of tree inventories, many commercial or residential landscapes contain large numbers and varieties of trees, often requiring very specific and different types of care. In these cases, an inventory is a critical tool that can help track, plan, and organize maintenance and care across a large number of trees. The data contained within an inventory can help grounds managers and landscape professionals project future tree care needs, helping to improve operations, budget appropriately, and schedule work efficiently.

Tree inventories begin with a recognition of an objective[2]. How will the data be used? For what purpose? These objectives help develop a project scope which includes the population or area to be inventoried, as well as the data fields needed to provide the desired information. A professional arborist navigates to each tree, records its location, and assesses the tree for all the necessary information. Many inventories are systematic and include data collection on all trees at once. Others may be phased and completed over time. Still others may collect information on each tree as it is provided care, slowly building a database on the entire population. Regardless, the data from any tree inventory can be immediately used to inform the care and maintenance of any number of trees.

Simplistically, inventory data can be collected and stored on pen and paper. If your population is small, this may be the economical way for you to store information. For larger populations, a more technologically advanced database is usually required. Paper, or even excel spreadsheets can become very cumbersome as tree populations become larger. A variety of software tools are available to assist data collection and management. Tools such as Davey's TreeKeeper® (http://www.davey.com/treekeepersuite) or even some Google applications and maps (http://www.google.com) can help use and manage inventory data.

A large function of tree inventories is risk management. An inventory completed by a Certified Arborist can help to identify potential tree issues and recommend corrective action that can be taken to mitigate risk to person or property. Completed inventories are a way to communicate that a firm, individual, or organization is taking significant action towards improving the safety of its properties. In some cases, having an inventory and performing priority maintenance activities is an essential activity to demonstrate due diligence in property management and tree care.

Tree inventories can also support management and planning. With a tree inventory, a user has a robust database that contains deep information about a tree population, including condition, maintenance needs, and associated data. This information can be analyzed in any number of ways to understand the extent and condition of a tree population, and even consider plans to improve the tree's contribution to the landscape. Understanding these data and their implications can help landscape professionals and grounds managers develop yearly

[2] Bond, J. 2013. Tree Inventories. International Society of Arboriculture, Best Management Practices.

maintenance expectations and determine resource and budgetary needs. There is an old saying that you “can’t manage what you can’t measure” and a tree inventory is the tool used to measure and support the management any number of trees.

A tree inventory may also help to save time and money. When each tree is reviewed independently by a Certified Arborist, small issues may be noticed long before they become big issues. When corrective pruning or basic tree health care is recommended and performed early, it may prevent larger more expensive problems down the road. Aside from the costs, pro-active maintenance is key to investing in trees as assets. Provided the appropriate care, trees can live longer, provide greater benefits, and contribute more fully to the landscape.

Beyond tree maintenance, inventories can also be applied to a variety of other uses. In some communities, tree surveys are required prior to development. Traditionally, these surveys include all trees over a specific diameter (often 6” or 8”) and their species, size, and condition. Planners, architects, and designers use this information to minimize the impact of construction activities on the parcel’s trees. In some communities, replacement is required or fees are assessed to encourage optimization of tree canopy following construction.

Inventories can include more than trees. Once on-site, it is usually cost effective to collect additional information about the size and location of planting beds, irrigation lines, hardscape features, or even turf management needs. These additional data can be used to develop comprehensive and long-range landscape management plans that can help landscape managers budget and allocate resources effectively to provide better, long-term care that maximizes the landscape’s functionality and aesthetic appeal.

Landscape and green professionals can leverage inventories to provide clients with tailored tree care and landscape management recommendations. Most professionals provide on-demand services or recommendations based on established management practices. With an inventory, landscape professionals can work directly with clients to develop long-term plans that maximize the value and aesthetic appeal specifically for a client’s cherished landscape. The systematic nature of inventories can reveal problems that may have been otherwise missed, allowing professionals to provide additional services and more comprehensive landscape solutions. Moreover, inventories can be used to follow up with clients, providing reminders for different management activities that should be performed to improve and maintain the landscape. These professional and added value services can be key in distinguishing landscape professionals from their competition.

Whether its trees, plants, turf, or hardscape, people are placing larger and larger values on their landscape features. As these elements become more valuable, professionals will be required to provide ever increasing levels of care and service. But our landscapes can be complex, often including a variety of plants, trees, and hardscape features interacting together. Tracking and providing the right care for all of these trees and other features poses a significant challenge to the landscape manager and tree care professional. Luckily, our profession has developed a

series of tools over time that can help effectively organize operations and provide, more pro-active care to our trees and landscapes -- and a tree or landscape inventory is just the tool for the job.

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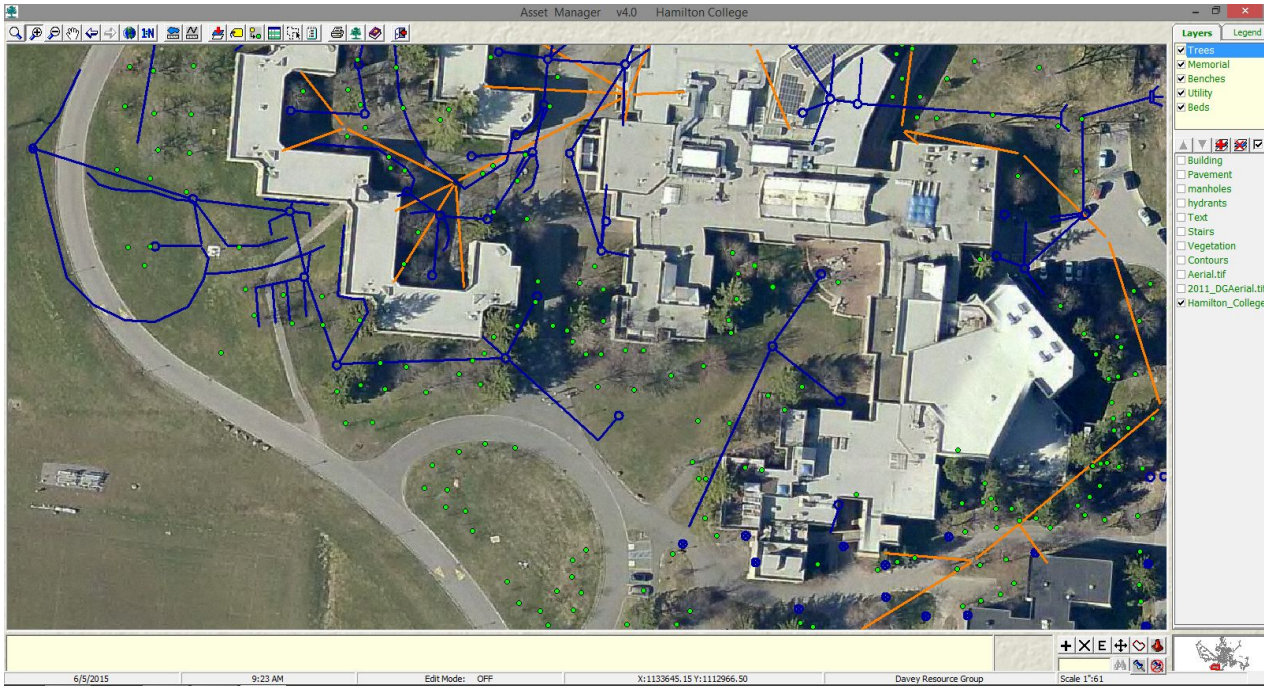

While inventories can be stored on paper or in excel spreadsheets, various software tools exist which can really improve the way inventory data are collected, managed, or used -- integrating data into your daily operations.