USES OF STREET TREE INVENTORY DATA[1]

by Robert L. Tate

Abstract. Methods are discussed which illustrate ways data from properly planned street tree inventories can be used to create an urban tree management program, to aid in obtaining programmatic increases, to help a program in which survival is threatened, to protect from budget cutbacks, to increase the efficiency of an existing program, and to provide information for public information and education.

A street tree inventory is a means by which an urban tree manager can acquire and retain pertinent information about the present condition of the urban tree resource. Some of its potential uses are to help determine the extent of pests and to ascertain the importance of problems which may require immediate maintenance action, to supply objective and quantitative information which can be used to document estimates for funding personnel and equipment, to illuminate present needs which may require a commitment of long term funding, and to identify potential planting locations and profile the composition of existing tree species (Giedraitis and Kielbaso, 1982). An inventory may aid in reducing the subjectivity of tree management decisions and stimulate them to be made rapidly (Tate 1973), and can help reduce potential municipal liability by identifying serious problems in time for corrective maintenance practices to be applied.

A knowledge of general inventory principles can be gained by reviewing comprehensive work done by Bassett (1976), Deneke (1978), and Ziesemer (1978). Information about specific systems has been presented by Sacksteder and Gerhold (1979), and others. Even though much information exists, many inventories have been taken and have failed in various ways. In some cases inventories have not been really needed. In others they were not properly planned, their objectives were unclear, and their date were inappropriately used or not used at all.

After data from a street tree inventory has been collected and processed, to be worthwhile they must satisfy the objectives of the inventory to good advantage. An inventory that is not needed or is not used for its intended purpose is a waste of money and valuable human resources. Moreover, if its objectives are not attained, and it is not used, the inventory and all concerned may lose credibility within the bureaucracy, with political decisionmakers, and with supporters.

Because of the continuing interest in street tree inventories and to aid in their planning and design, some of the major uses of inventory data are discussed and how they may be employed efficiently.

Creation of an urban tree management program. Inventory data can be used to demonstrate the need to develop a systematic tree care program and the possible consequences of failing to develop one. The community is ultimately responsible for maintaining the publicly-owned urban tree resource, and the liability that may result from improperly caring for it. Not having funds to maintain the resource does not absolve a city of an accountability in lawsuits arising from it. Moreover, the cost of a judgement against the community or the defense costs in a lawsuit could conceivably pay for a systematic tree care program for many years.

To create a program, data must be arranged and presented to best put forth a message that is concise, straightforward, and graphic. Charts and graphs catch attention and have the ability to impress the need for a program on all who should be concerned, but who have limited time and interest to spend on interpreting reams of tree-related data. The time for details can come later.

Three major items should be summarized: planting needs, maintenance requirements, and potential hazard to life and property. If a program is created, data from the inventory can aid in the

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development of a specific urban tree management plan. While urban forest management planning has become commonplace in this country, it has not focused on long range objectives (Lobel, 1983). The need for a management plan which includes long-range planning is tremendously important. Inventory data can be used to determine the extent, condition, and maintenance needs of the resource and to compare these parameters with desired objectives stated in a plan.

Programmatic increases. Increased funding without quantitative information is difficult to secure when competing with other departments that have data. Obtaining worthwhile supporting data also lends credibility to budget requests. Police departments, for example, keep crime statistics and can usually make an extremely strong case for their budgets. Obviously urban tree care does not rank in importance with the protection of citizens from crime, but city trees do improve the general quality of urban life and have continuing maintenance requirements which can be demonstrated by inventory data.

Although increases may be denied, it is important to continue to request what can be justified by an inventory. Political decision-makers' and administrators' priorities may change after a certain amount of education. Education can be one of the objectives of an inventory, and budget hearings are in many ways akin to educational sessions. Well-presented information that educates and substantiates the need for a budget increase often gains a more favorable response when contrasted to the annual dramatics and chest-bearing for funding request without proper data seen at many tree budget hearings.

Data presentation for programmatic increases must be concise, straight-forward, and oriented to the graphic (a little drama does not hurt in making a point, however). The principal purpose is to present a picture of the program, where it is now, and where it has to go to satisfy the stated objectives of a resource management plan. All of these are substantiated by inventory data.

Program survival. Each year when various city agencies' budgets are submitted and considered, they are placed in the larger general city budget. Priorities in each community change, sometimes yearly. Programs are ranked by local government and are evaulated for their worth in light of their political and monetary costs and values. A program that cannot defend itself adequately is in danger of being cut back or eliminated. Obviously, cutbacks result in reduced services. The reductions are not readily apparent to city residents over the short run, but may have a tremendous long term impact on the urban tree resource that cannot be reversed by future budget increases.

Unfortunately, many political decision makers do not understand that the exisiting resource must be maintained at some level. Trees in the resource will continue to grow, get dead limbs, die and be removed when they become hazards even though the budget is cut back. Tree removal funds seem to be found in many cases, even though systematic tree care is eliminated, because of the threat of lawsuits and other factors. Even if the tree program is totally eliminated, tree work will be done. Operations will probably be less efficient because there is no full-time tree care agency, or if by contract, will require in-house management and supervision to be effective. More importantly, trees will probably die at greater rates and prematurely when the tree maintenance budget is reduced.

To insulate and protect against budget cutbacks, inventory data can be used to describe the composition and condition of the resource. If cutbacks will affect planting, pruning, and removal, the presentation of data describing number of planting locations, trees requiring pruning, and dead or dying trees to be removed can be used to demonstrate accomplishments with the existing budget, as compared to a reduced one. The work is needed on a regular and sustained basis, and cutting the budget will not make it go away.

Cutbacks may not directly affect the major service elements, but could impact on minor expenditures such as fertilizing, pest control, and post planting care. Then, data describing vigor conditions, insect and disease extent, and the proportion of newly planted trees to the established population can be used to explain the future effects on the resource when these services are cut back.

Increase in efficiency of the program. Efficiency can be improved to some degree in most organizations. Many existing systematic tree care

programs are underfunded. Because of intense competition for funds, tree care programs often have extreme difficulty in gaining real budget increases. What they receive may not cover yearly cost increases due to inflation. To accomplish a higher level of service (in some cases just to maintain the same level) given the same budget, a program must become more efficient.

More efficient dispatching of work crews can be accomplished if it is known in which area of the city large accumulations of trees exist which require similar maintenance needs. For example, trees that have low limbs which interfere with pedestrian and/or vehicular traffic should be pruned for clearance and can be easily handled by crews working from the ground without extensive equipment and training. This work can be done during inclement weather, when equipment is being repaired, or as fill-in when key members of a particular crew are absent and other work cannot be done. Minor pruning and lifting can be performed by seasonal workers and temporary employees. Inventory data can be used to determine the number and size of crews needed for a particular tree maintenance operation. For example, the removal of large trees along busy streets requires more personnel and equipment than the removal of smaller trees in residential areas. The sizes, numbers, and locations of trees to be removed in various areas can be indicated by inventory data and work scheduled more effectively.

Equipment purchases can be more efficient by using inventory data. Does the equipment inventory match tree maintenance needs and is it the most efficient type for existing and future work? For example, the cost of an aerial lift increases proportionally to its working height. If inventory data indicate that most of the street trees needing work are less than 30 feet in height, and only one aerial lift can be purchased, buying a lift which can reach 30 feet rather than a taller one is probably a better decision because it is less costly. The small percentage of taller trees may be done by contract or climbers can be placed into these trees with the smaller lift.

In planting, species can be better matched with the aid of inventory data to the site. If, for example, one of the inventory variables notes the presence and heights of overhead utility lines, planting locations specified under lines can be used to estimate the number of trees needed, which are shorter and compact at maturity. Decisions made about the species mix for future tree purchases will be enhanced. The development of special pruning practices for small trees which will grow into lines can be programmed into the maintenance plan as a result of the inventory.

Properly trained tree crews work more efficiently than do untrained crews (Tate, 1981). Inventory data can indicate exisiting and future tree work. From this an inservice training program can be designed to adequately prepare the crews for necessary operations. If a large number of potential planting locations exist, for example, and an increased planting program is anticipated, crews can be trained in nursery maintenance practices, proper planting techniques, and post-planting care procedures.

Public information and education. Residents are usually interested in their trees but are generally ignorant about them as a resource (Tate, 1976). Inventory data when utilized graphically, can provide information in handouts to citizens and the news media about the largest, rarest, most common, and most exotic trees in the community. Use of inventory data can enlighten the community about the benefits, problems, and costs of urban trees. Informed citizens who are made aware of the value of the urban resource are generally easier to work with and often lend vigorous support to its preservation and management, and can occasionaly be counted on to rally to the defense of a tree program in jeopardy.

Summary and conclusions. A properly designed street tree inventory can be useful in helping to crate a comprehensive urban tree management program. Results from the inventory must be presented concisely and graphically to demonstrate the need for such a program and the consequences of not developing one.

Funding increases can be generally supported more effectively when well-prepared, quantitative data are used to present a current picture of the resource and the requirements to bring it to a desired maintenance level.

A program in jeopardy can, and should be properly evaluated for its worth to the community. Inventory data can be used to describe the com-

position and condition of the tree resource and in what way the proposed cutbacks will affect it.

Inventory data can be used to improve program efficiency by aiding in crews dispatching, determining crew size, and developing improved work scheduling; to aid in the purchase of equipment better suited to resource needs; and can be employed to design inservice training programs.

Finally, inventory data can help develop grass roots support and a sense of pride in community trees by informing citizens that a tremendous and valuable resource exists that needs to be managed and should be preserved.

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MUNICIPAL TREE CONTRACTS[1]

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Abstract. Municipal tree contracts have to be exact to make sure the contractor and the municipality agree as to what work is to be done. The specifications should be as complete as possible. Specifications should include details on purpose, costs, licenses, insurance, notification to utilities, scheduling, how to make changes, acceptance of work orders, delivery, clean-up, and anything else that is pertinent to the situation.

The purpose of a contract is to get a qualified contractor to do the work at the lowest price. If all information is placed on paper, all bidders will be bidding the same set of specifications and hopefully you will end up with a reputable bidder as the lowest bidder.

One way to make sure all bidders understand the specifications is to have a prebid meeting. The prebid meeting is to clarify any confusion that the writer may introduce into the specifications. When you have two parties, a bidder and a muncipality, discussing a subject, you could have two different views. Differences frequently can be eliminated during a prebid meeting. Making it a requirement for a contractor to attend the prebid meeting might not be legal. One year we had a low-bid contractor who was not at the prebid meeting. Legally, we could not find any way of eliminating his bid. An excuse such as being in the hospital or he didn't know about it soon enough, etc., makes it very difficult to hold this requirement against the bidder legally. Sometimes a bluff can work but not all the time.

During the prebid meeting it is wise to go step by step through each section of your specifica-

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