



Appendix C Tree Valuation Methodology

When the Tree Commission receives a request by a resident to remove a tree that would otherwise not be removed as part of the City's tree maintenance program, the following valuation processes are used to determine the value of city trees. The value of a tree forms one basis for determining compensation that the Tree Commission will ask for removal of the tree from the urban forest. The Tree Commission uses two methods to determine the value of city trees. The basic formula method is used to calculate a monetary value for a tree, whereas the cross-sectional area method is used to determine the value as equivalence in replacement trees.

1. Basic Formula Method

The "Basic Formula Method" is the valuation method adopted in 1983 by the:

American Association of Nurserymen, American Society of Consulting Arborists, Associated Landscape Contractors of America, International Society of Arboriculture, and the National Arborists Association.

This method is most germane to determining the value of trees with trunk diameters >12" (measured approximately 4 feet from the ground). In this method, a Basic Value is assigned to the tree on the basis of its cross-sectional area (for example, \$27.00 per square inch was adopted by the above associations on 4/9/92). The cross-sectional area is calculated as "0.7854 x the diameter²." Thus for a tree with a cross-sectional area of 13", the Basic Value would be calculated as:

$$0.7854 \times 13^2 \times 27 = \$3583$$

The Basic value is then multiplied by percentages (ranging between 0-100%) which adjust the Basic Value in relationship to the 1) tree species, 2) condition of the tree, and 3) location of the tree, using the following formula:

$$\text{Tree Value} = \text{Basic Value} \times \text{Species Factor} \times \text{Condition Factor} \times \text{Location Factor}$$

1) The species factor (e.g., 70%) takes into the account the hardiness of different tree species in that particular region of the country. For trees in Ohio, the Tree Commission uses the adjustment factors published by the Ohio Chapter of the International Society of Arboriculture.

2) The condition of the tree factor (e.g., 50%) takes into account such circumstances as insect damage or infestation, cabling or bracing, mechanical injury, splits and cracks in the trunk, etc, as determined by an experienced and qualified appointee of the Tree Commission.

3) The tree location factor (e.g. 80%) considers the specific location of the tree, such as commercial versus residential locality, aesthetic value (e.g., foliage and flowers) historical value, etc, as determined by an experienced and qualified appointee of the Tree Commission.

For a hypothetical specific tree of 13" diameter the actual Tree Value would be calculated as:
e.g., Tree Value = \$3583 x 0.7 x 0.5 x 0.8 = \$1003



Marietta Tree Commission

2. Cross-sectional Area Equivalence Replacement

In this method, the city would be recompensed with the planting on city property of new trees having a total trunk cross-sectional area equivalent to that of the tree to be removed. The replacement trees must have a trunk diameter of not less than 1.5 inches and be of species approved by the Tree Commission.

For example, a tree with a 7-inch trunk diameter (a cross-sectional area of 38.5 inches) could be replaced with 12 trees with trunk diameters of 2 inches.