



FLORIDA CHAPTER of the INTERNATIONAL SOCIETY OF ARBORICULTURE

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DETERMINING THE MITIGATION VALUE OF ROADSIDE VEGETATION

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Key Words and Definitions

- o *Diameter* - a standard measurement for forest trees recorded at 54" (inches) above grade.
- o *Caliper* - a standard measurement for nursery trees recorded at 6" (inches) above grade on trees up to and including 4" (inches) in caliper, and 12" above grade for larger trees.
- o *Diminution* - the depreciation factor(s) of a tree's condition expressed as a percentage multiplier.
- o *Square inch value* - the monetary value of one square inch of trunk area, *contained within* a caliper or diameter measurement, derived from the value of one 6" caliper replacement tree.
- o *Qualified nursery grower* - a wholesale plant nursery registered with the Division of Plant Industry; with promulgated prices.
- o *Replacement cost method(s); cost to cure, and appraisal methodologies* - values of plants and tree appraisal methodologies are based on, "Florida #1 or better," plants from a qualified nursery grower as outlined in, *Grades and Standards for Nursery Plants*. Florida Department of Agriculture and Consumer Services, Division of Plant Industry. 2nd Edition: February 1998.
- o *Pruning, Fertilization, and Safety* - all work on trees, shrubs, and woody plants shall conform to ANSI A-300 Part 1 & 2, and ANSI 2133.1. American National Standards Institute. 11 West 42nd Street, New York, New York 10036
- o *Collector* - a person or company who finds palm trees growing in situations where the collector purchases the subject tree; harvests, delivers, and installs to an end user.

Appraisal Methodologies

1. Trees 6" caliper or less - replacement cost method
 - o Three (3) wholesale values from a qualified nursery grower
 - o Average wholesale cost of casualty replacement tree (same species)
 - o x 2.5 mark-up of the average wholesale plant price
 - o x diminution rating
 - o = mitigation cost

Example:

- o A 4" sweetgum tree (*Liquidambar styraciflua*) is removed
- o A 4" sweetgum tree (replacement) averages \$155.00 wholesale cost
- o $\$155.00 \times 2.5 = \387.50
- o $\$387.50 \times \text{diminution of } 70\% = \271.25
- o mitigation cost = \$271.25

2. Trees 6" diameter or greater - replacement cost method
 - o Three (3) wholesale values from a qualified nursery grower
 - o Average wholesale cost of largest available replacement tree (same species) (6" diameter)
 - o x 2.5 mark-up of the average wholesale plant price
 - o x the diameter of the subject casualty tree
 - o x diminution rating
 - o = mitigation cost

Example:

- o An 18" live oak tree (*Quercus virginiana*) is removed
- o A 6" live oak tree (replacement) averages \$550.00 wholesale cost
- o $\$550.00 \times 2.5 = \1375.00
- o $\$1375.00 \div 6''$ (replacement tree) = \$229.00 per diameter inch
- o 18" (casualty tree) x \$229.00 (replacement tree) = \$4,122.00
- o $\$4,122.00 \times$ diminution of 70% = \$2885.40
- o mitigation cost = \$2,885.40

3. Trees larger than 36" diameter - replacement cost method
 - o Trunk area mitigation method
 - o Average of three (3) wholesale values from qualified nursery growers
 - o Average wholesale cost of largest same species replacement tree (6" diameter)
 - o Determine square area of inches within diameter
 - o x square inch value
 - o x diminution rating
 - o = mitigation cost

Example

- o A 37" live oak tree (*Quercus virginiana*) is removed
- o A 6" live oak tree (replacement) averages \$550.00 wholesale cost
- o $\$550.00 \times 2.5 = \$1,375.00$
- o A 6" diameter tree has 28 square inches of trunk area (0.785 d²)
- o $\$1,375.00 \div 28$ square inches (6" replacement tree) = \$49.11 per square inch of Trunk Area
- o 37" subject casualty live oak tree = 1075 square inches of Trunk Area
- o 1075 (square inches of trunk area) x \$49.11 = \$52,793.25
- o $\$52,793.25 \times$ diminution of 70%
- o mitigation cost = \$36,955.28

4. Shrubs - Cost to Cure method
 - o Three (3) wholesale values from a qualified nursery grower
 - o using same replacement plant species and size as casualty plant species
 - o x 2.5 mark-up of the average wholesale plant price
 - o x the actual number of casualty plants
 - o x diminution rating
 - o = mitigation cost

Example

- o Twenty (20), 4' x 4' ligustrum plants are removed
- o A 4' x 4' ligustrum replacement plant averages \$22.50
- o $\$22.50 \times 2.5 = \56.25 each
- o $\$56.25 \times 20$ removed ligustrum plants = \$1,125.00
- o $\$1,125.00 \times$ diminution of 70% = \$787.50
- o mitigation cost = \$787.50

5. Palm Trees - replacement cost method

- o Three (3) wholesale values from a qualified nursery grower or collector
- o Average wholesale cost of same size and species replacement palm tree, if available. If replacement palm tree is not available from wholesale grower or collector, then the average wholesale cost of a replacement palm tree (same species) will be calculated by over-all height, clear trunk, clear wood, or other measurement as defined in “*Replacement cost method(s); cost to cure, and appraisal methodologies*” (Refer to Key Words and Definitions)
- o x 2.5 mark-up of the average wholesale plant price
- o x the diameter of the subject casualty tree
- o x diminution rating
- o = mitigation cost

Example (Palm replacement tree available)

- o A 16’ Washington palm tree (*Washingtonia robusta*) is removed
- o A 16’ Washington palm tree replacement averages \$8.00 per foot wholesale cost or collector cost
- o $\$8.00 \times 2.5 = \20.00 per foot
- o $\$20.00 \times 16' = \320.00
- o $\$320 \times \text{diminution of } 70\% = \224.00
- o mitigation cost = \$224.00

Example (Palm replacement tree **not** available)

- o A 40’ Washington palm tree (*Washingtonia robusta*) is removed
- o A 40’ Washington palm tree replacement is not available from a wholesale grower or collector
- o The wholesale or collectors cost is \$8.00 per foot (based on a 16’ replacement tree)
- o $\$8.00 \times 2.5 = \20.00 per foot
- o $\$20.00 \times 40' = \800.00
- o $\$800.00 \times \text{diminution of } 70\% = \560.00
- o mitigation cost = \$560.00

6. Transplant - cost to cure method

- o The cost to transplant, install, and establish plants (including trees) into a remainder site or other FDOT approved site.

7. Timber cruise method

- o Valuations based upon the methodologies outlined in *Forestry Handbook*, 2 nd Edition, Society of American Foresters, 1984.

Note: The appraisal methodologies outlined above are intended for application by qualified professionals with Advanced Training in Roadside Vegetation, provided by the Florida Chapter, International Society of Arboriculture. This document is incorporated by reference in Rule 14-40.030, Florida Administrative Code.