

**City of Winter Springs  
Ordinance No. 2002-08**

**TABLE 1: TREE REPLACEMENT STANDARDS**

<b>Diameter of Protected Tree</b>	<b>Number of Replacement Canopy Trees Required for Each Tree Removal</b>		<b>Number of Replacement Small Trees or Palms Required for Each Tree Removal</b>		<b>Preferred Plants</b>		<b>Contribution to the Tree Bank</b>
4" up to but not including 9"	1	or	1	or	Preferred Plant(s) w/Credits	or	\$250
9" up to but not including 12"	2	or	2		Preferred Plant(s) w/Credits		\$500
12" up to but not including 16"	3		Not allowed		Preferred Plant(s) w/Credits		\$750
16" up to but not including 24"	4		Not allowed		Preferred Plant(s) w/Credits		\$1,000
24" and above	To be preserved		To be preserved		To be Preserved		To be preserved
*These amounts may be adjusted biannually to compensate for increases to cost of plants as well as to cost of installation and establishment							

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Appendix A: Undesirable Trees

<u>Common Name</u>	<u>Scientific Name</u>
Mimosa, silk tree	<i>Albizia julibrissin</i>
Woman's tongue	<i>Albizia lebeck</i>
Orchid tree	<i>Bauhinia variegata</i>
Bischofia	<i>Bischofia javanica</i>
Carrotwood	<i>Cupaniopsis anacardioides</i>
Australian pine	<i>Casuarina sp.</i>
Camphor tree	<i>Cinnamomum camphora</i>
Laurel fig	<i>Ficus microcarpa</i>
Glossy privet	<i>Ligustrum lucidum</i>
Chinese privet	<i>Ligustrum sinense</i>
Melaleuca	<i>Melaleuca quinquenervia</i>
Chinaberry	<i>Melia azedarach</i>
Catclaw mimosa	<i>Mimosa pigra</i>
Guava	<i>Psidium sp.</i>
Downy rose myrtle	<i>Rhodomyrtus tomentosa</i>
Chinese tallow	<i>Sapium sebiferum</i>
Schefflera	<i>Brassaia actinophylla</i>
Brazilian pepper	<i>Schinus terebinthifolius</i>
Tung oil tree	<i>Aleurites fordii</i>
Paper mulberry	<i>Broussonetia papyrifera</i>
Indian rosewood	<i>Dalbergia sissoo</i>
Ear pod tree	<i>Enterlobium contortisilquum</i>
Goldenrain tree	<i>Koelreuteria elegans</i>
Lead tree	<i>Leucaena leucocephala</i>
Senegal date palm	<i>Phoenix reclinata</i>
Castor bean	<i>Ricinus communis</i>
Rose apple	<i>Syzygium jambos</i>

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Appendix B: Desirable Trees

<b>Canopy Trees</b>					
<b>Common Name</b>	<b>Scientific Name</b>	<b>Replacement Tree Size/Minimum Height</b>	<b>Preferred Plant Size/Minimum Height</b>	<b>Replacement Credits for Preferred Trees</b>	<b>Notes</b>
Bald cypress	<i>Taxodium distichum</i>	15 gal; 6' min hgt	30 gal; 10' min hgt	2:1	30-70' mature height, deciduous, fall color
Bald cypress			65 gal; 14' min hgt	3:1	
Black gum	<i>Nyssa sylvatica var. biflora</i>	15 gal; 6' min hgt	30 gal; 10' min hgt	2:1	50-75' mature height, deciduous, fall color, prefers moist soil
Carolina cherry laurel	<i>Prunus caroliniana</i>	15 gal; 6' min hgt	30 gal; 10' min hgt	2:1	40' mature height, evergreen, black fruit
Chinese (drake) elm	<i>Ulmus parviflora</i>	15 gal; 6' min hgt	30 gal; 10' min hgt	1:1	40-50', evergreen
Winged elm	<i>Ulmus alata</i>	15 gal; 6' min hgt	30 gal; 10' min hgt	3:1	50-80' mature height, winged bark, deciduous, fall color
Florida elm	<i>Ulmus americana floridana</i>	15 gal; 6' min hgt	30 gal; 10' min hgt	3:1	60-70" mature height, deciduous
Dahoon holly	<i>Ilex cassine</i>	15 gal; 6' min hgt	30 gal; 10' min hgt	2:1	30' mature height, evergreen, red fruit
Dahoon holly			65 gal; 14' min hgt	3:1	
Laurel oak	<i>Quercus laurifolia</i>	15 gal; 6' min hgt	30 gal; 10' min hgt	1:1	80-100' mature hgt, 25-50 year lifespan, evergreen
Live oak	<i>Quercus virginiana</i>	15 gal; 6' min hgt	30 gal; 10' min hgt	2:1	100-150' mature height, evergreen
Live oak			65 gal; 14' min hgt	4:1	
Sand live oak	<i>Quercus geminata</i>	15 gal; 6' min hgt	30 gal; 10' min hgt	3:1	50' mature height, evergreen
Water oak	<i>Quercus nigra</i>	15 gal; 6' min hgt	30 gal; 10' min hgt	2:1	80-100' mature hgt, 25-50 year lifespan

<b>Canopy Trees</b>					
Longleaf pine	<i>Pinus palustris</i>	15 gal; 6' min hgt	30 gal; 10' min hgt	3:1	80-125' mature height, evergreen
Slash pine	<i>Pinus elliottii</i>	15 gal; 6' min hgt	30 gal; 10' min hgt	3:1	80-125' mature height, evergreen
Hickory	<i>Carya glabra</i>	15 gal; 6' min hgt	30 gal; 10' min hgt	2:1	40-80' mature height, deciduous, fall color, produces a nut
Red maple	<i>Acer rubrum</i>	15 gal; 6' min hgt	30 gal; 10' min hgt	2:1	50-80' mature height, deciduous, fall color
Red maple			65 gal; 14' min hgt	4:1	
Southern magnolia	<i>Magnolia grandiflora</i>	15 gal; 6' min hgt	30 gal; 10' min hgt	3:1	60-80' mature height, evergreen, white flowers
Southern magnolia			65 gal; 14' min hgt	4:1	
Sugarberry	<i>Celtis laevigata</i>	15 gal; 6' min hgt	30 gal; 10' min hgt	2:1	60-80' mature height, black fruit, deciduous
Sweetbay	<i>Magnolia virginiana</i>	15 gal; 6' min hgt	30 gal; 10' min hgt	3:1	60' mature height, evergreen, prefers moist soil
Sweetgum	<i>Liquidambar styraciflua</i>	15 gal; 6' min hgt	30 gal; 10' min hgt	3:1	60-100' mature height, deciduous, fall color, produces seeds in a spiky ball
Sycamore	<i>Platanus occidentalis</i>	15 gal; 6' min hgt	30 gal; 10' min hgt	3:1	80-120' mature height, deciduous, fall color, attractive bark
Carolina ash	<i>Fraxinus caroliniana</i>	15 gal; 6' min hgt	30 gal; 10' min hgt	2:1	30-40' mature height, deciduous, prefers moist soil

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Appendix B: Desirable Trees

<b>Small trees</b>					
<b>Common Name</b>	<b>Scientific Name</b>	<b>Replacement Tree Size/Minimum Height</b>	<b>Preferred Plant Size/Minimum Height</b>	<b>Replacement Credits for Preferred Trees</b>	<b>Notes</b>
Cassia	<i>Senna bicapsularis</i>	15 gal; 4' hgt min	N/A	1:1	Flowers
Camelia	<i>Camelia sp.</i>	1 gal; 6' hgt min	3 gal; 8' hgt min	2:1	Flowers
Carolina willow	<i>Salix caroliniana</i>	15 gal; 6' min hgt	N/A	1:1	15-20' mature height, prefers moist soil, deciduous
Chapman oak	<i>Quercus chapmanii</i>	15 gal; 4' min hgt	N/A	1:1	Small, evergreen
Myrtle oak	<i>Quercus myrtifolia</i>	15 gal; 5' min hgt	N/A	2:1	Small, evergreen
Turkey oak	<i>Quercus laevis</i>	15 gal; 5' min hgt	N/A	1:1	30' mature height, deciduous, fall color, prefers well drained soil
Chickasaw plum	<i>Prunus angustifolia</i>	15 gal; 6' min hgt	30 gal; 6' min hgt	3:1	White flowers in spring, deciduous
Crape myrtle	<i>Lagerstroemia sp.</i>	15 gal; 6' min hgt	N/A	1:1	Flowers, evergreen
Devils-walking-stick	<i>Aralia spinosa</i>	15 gal; 5' min hgt	N/A	1:1	White flowers, thorny, deciduous
American holly	<i>Ilex americana</i>	15 gal; 4' min hgt	30 gal; 6' min hgt	1:1	Spiny foliage, red berries, evergreen
Yaupon holly	<i>Ilex vomitoria</i>	15 gal; 5' min hgt	25 gal; 7' min hgt standard	3:1	20' mature height, red fruit, evergreen
Yaupon holly			65 gal; 10' min hgt standard	4:1	
Florida Anise	<i>Illicium floridanum</i>	15 gal; 40" min hgt	N/A	1:1	Maroon flowers, prefers moist soil
Flowering dogwood	<i>Cornus florida</i>	15 gal; 6' min hgt	FG; 3.5" min caliper	3:1	White flowers, fall color, deciduous

<b>Small Trees</b>					
Fringe tree	<i>Chionanthus virginicus</i>	15 gal; 5' min hgt	30 gal; 6' min hgt	1:1	20-30' mature height, white flowers, fall color, deciduous
Hercules club	<i>Zanthoxylum clava-herculis</i>	15 gal; 5' min hgt	N/A	1:1	Thorny, deciduous
Japanese blueberry	<i>Elaeocarpus decipiens</i>	15 gal; 4' min hgt	30 gal; 6' min hgt	3:1	Showy, fragrant
Japanese privet	<i>Ligustrum japonicum</i>	15 gal; 5' min hgt	30 gal; 6' min hgt	2:1	Evergreen, white flowers
Loquat	<i>Eriobotrya japonica</i>	15 gal; 6' min hgt	30 gal; 8' min hgt	2:1	Evergreen, edible fruit
Southern magnolia 'Little gem'	<i>Magnolia grandiflora</i> 'little gem'	15 gal; 6' min hgt	30 gal; 7' min hgt	3:1	20' height, similar in appearance to regular magnolia
Southern magnolia 'Little gem'			65 gal; 10' min hgt	4:1	
American hornbeam	<i>Carpinus caroliniana</i>	15 gal; 6' min hgt	15 gal; 6' min hgt	2:1	Deciduous, prefers moist soil and partial shade
Podocarpus, Nagi	<i>Podocarpus nagi</i>	15 gal; 6' min hgt	N/A	1:1	40' mature height, evergreen
Podocarpus, yew	<i>Podocarpus macrophyllus</i>	15 gal; 6' min hgt	N/A	1:1	40' mature height, evergreen
Red mulberry	<i>Morus rubra</i>	15 gal; 6' min hgt	N/A	1:1	50' mature height, edible fruit
Redbud	<i>Cercis canadensis</i>	15 gal; 6' min hgt	30 gal; 6' min hgt	3:1	20' mature height, pink spring flowers, deciduous, prefers partial shade
Rusty lyonia	<i>Lyonia ferruginea</i>	15 gal; 6' min hgt	N/A	1:1	20' mature height, rust color, evergreen
Silverthorn	<i>Elaeagnus pungens</i>	15 gal; 6' min hgt	N/A	1:1	20' mature height, weepy

<b>Small Trees</b>					
Southern red cedar	<i>Juniperus silicicola</i>	15 gal; 6' min hgt	30 gal; 7' min hgt	3:1	25' mature height, evergreen
Sparkleberry	<i>Vaccinium arboretum</i>	15 gal; 5' min hgt	N/A	1:1	Deciduous, fall color
Wild Olive	<i>Osmanthus americanus</i>	15 gal; 5' min hgt	N/A	1:1	20' mature height, evergreen
Sweet Acacia	<i>Acacia farnesiana</i>	15 gal; 5' min hgt	30 gal; 8' min hgt	2:1	Flowers, fragrant
Sweet Olive	<i>Osmanthus fragrans</i>	15 gal; 5' min hgt	N/A	1:1	Evergreen, prefers well drained soil
Tabebuia	<i>Tabebuia sp.</i>	15 gal; 6' min hgt	30 gal; 10' min hgt	1:1	Attractive flowers, deciduous
Titi	<i>Cyrilla racemiflora</i>	15 gal; 5' min hgt	N/A	1:1	Prefers moist soil, white flowers, deciduous
Torulosa juniper	<i>Juniperus chinensis 'torulosa'</i>	15 gal; 5' min hgt	N/A	1:1	Evergreen, sweeping growth form
Tough bumelia	<i>Bumelia tenax</i>	15 gal; 5' min hgt	N/A	1:1	Leaves have copper colored undersides
Walter's viburnum	<i>Viburnum obovatum</i>	15 gal; 5' min hgt	N/A	2:1	20' mature height, white spring flowers
Wax myrtle	<i>Myrica cerifera</i>	15 gal; 5' min hgt	FG; 12' min hgt	3:1	20' mature height, small blue fruit
Weeping willow	<i>Salix babylonica</i>	15 gal; 5' min hgt	N/A	1:1	25' mature height, weeping growth form

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Appendix B: Desirable Trees

Palm trees					
Common Name	Scientific Name	Replacement Tree Size/Minimum Height	Preferred Plant Size/Minimum Height	Replacement Credits for Preferred Trees	Notes
Cabbage palm	<i>Sabal palmetto</i>	10' min hgt	15' min hgt; clear trunk	2:1	50-80' mature height,
Cabbage palm			18' min hgt; clear trunk	3:1	
Canary Island date palm	<i>Phoenix canariensis</i>	15 gal; 40' min hgt	30 gal; 7' min hgt	1:1	60' mature height, evergreen, feather like fronds
Date palm	<i>Phoenix dactylifera</i>	15 gal; 3' min hgt	FG; 10' min hgt; clear trunk	1:1	80' mature height, evergreen
European fan palm	<i>Chamaerops humilis</i>	15 gal; 3' min hgt	15 gal; 3' min hgt; multiple	1:1	15' mature height, evergreen
Needle palm	<i>Rhapidophyllum hystrix</i>	15 gal; 3' min hgt	25 gal; 4' min hgt; triple	5:1	8' mature height, evergreen, cold hardy, native species
Pindo palm	<i>Butia capitata</i>	15 gal; 3' min hgt	25 gal min; 6' min hgt	1:1	20' mature height, blue green color
Pygmy date palm	<i>Phoenix roebelenii</i>	15 gal; 3' min hgt	25 gal; 5' min hgt, triple	1:1	8' mature height, frost sensitive
Sago palm, King	<i>Cycas revolute</i>	15 gal; 3' min hgt	30 gal; 4' min hgt	1:1	20' mature height, feather like leaves
Sago palm, Queen	<i>Cycas circinalis</i>	15 gal; 3' min hgt	30 gal; 4' min hgt	1:1	20' mature height, feather like leaves
Washington palm	<i>Washingtonia robusta</i>	15 gal; 4' min hgt	25 gal; 8' min hgt	1:1	60' mature height, rapid growth,
Windmill palm	<i>Trachycarpus fortunei</i>	15 gal; 3' min hgt	25 gal; 5' min hgt	1:1	20' mature height, gray-green color,

\*Min hgt=minimum height, gal=gallon, FG=field grown, min caliper=minimum caliper



Chapter 5, Appendix C

**Appendix C  
Calculating Tree Protection Zone**

The following guidelines shall be applied to determine the Tree Protection Zone:

1. Evaluate the species tolerance of the tree: good, moderate, or poor.
2. Identify tree age: young (<20% of the tree’s life expectancy), mature (20%-80% of the tree’s life expectancy), or overmature (>80% of the tree’s life expectancy).
3. Using the table below, find the distance from the trunk that should be protected per inch of trunk diameter.
4. Multiply the distance by the trunk diameter to calculate the optimum radius (in feet) for the tree protection zone.

Example:

A healthy, 60 year-old, 30” diameter California black walnut (poor tolerance, mature age)

$1.25' \times 30'' = 37.5'$  radius tree protection zone

Species Tolerance	Tree Age	Distance from trunk in feet (per inch of trunk diameter)
Good	Young	0.5
	Mature	0.75
	Overmature	1.0
Moderate	Young	0.75
	Mature	1.0
	Overmature	1.25
Poor	Young	1.0
	Mature	1.25
	Overmature	1.5

Source: *Trees and Development, a Technical Guide to Preservation of Trees During Land Development*, Nelda Matheny and James Clark, 1998, International Society of Arboriculture, Champaign, IL (ord. No. 2002-08, & 2, 4-8-02; Ord. No. 2003-22, & 2, 10-13-03)



*\*\*This sign shall be made of rigid material only such as wood, metal or durable plastic. The sign shall be two feet wide by three feet long.*