

# APPENDIX A

## The City of Woodstock County Tree Species List

The City of Woodstock Tree Species List is intended to support site planning and design activities for tree preservation and replacement, tree maintenance planning and decision making in general. The list is arranged alphabetically by the tree's common name with the "genus" listed first. The latin name is also listed for more definitive species identification.

(As adapted from the Athens-Clarke County Tree Species List)

### Key to Symbols and Tree Species Characteristic Descriptions

TREE CHARACTERISTIC	DESCRIPTION and ENTRY CHOICES
Species Common Name	Entered with genus common name first, then species, then cultivar if applicable. For some species an alternate common name is included in parentheses.
Latin Name	Genus, species, and variety or cultivar; always italicized or underlined.
<b>Parking Lot Canopy Tree</b>	<p><b>Trees approved for planting in parking lots.</b></p> <p>1 = trees that will project significant shade, intercept enough water, substantially filter out pollutants, and survive the conditions within a parking area to the extent they could be considered a "canopy" tree.</p> <p>2 = the same as 1, except these trees are ONLY appropriate for large, expanded tree islands or landscape strips, swales, or moist soil conditions with plenty of rooting space.</p>
<b>Canopy Size Category</b>	<p>Very Small - 150 square feet with a 15 foot crown diameter <i>The minimum open soil surface area is 25 sq. ft.</i></p> <p>Small – 400 square feet with a 25 foot crown diameter <i>The minimum open soil surface area is 100 sq. ft.</i></p> <p>Medium – 900 square feet with a 35 foot crown diameter <i>The minimum open soil surface area is 225 sq. ft.</i></p> <p>Large – 1,600 square feet with a 45 foot crown diameter <i>The minimum open soil surface area is 400 sq. ft.</i></p>
<b>RECOMMENDED USES</b>	
<b>Level of Use</b>	<p><b>The level of use that the tree should receive.</b></p> <p>P = Plant New Trees and Conserve Existing Trees</p> <p>C = Conserve Existing Trees</p> <p>L = For Limited Planting or Conservation Only</p> <p>N = Do Not Plant</p>
<p><b>Large Landscape Areas</b></p> <p><b>Road Frontages – Street</b></p> <p><b>Road Frontages – Yard</b></p> <p><b>Parking Lots</b></p> <p><b>Plazas and Downtown Settings</b></p> <p><b>Riparian Zones and Drainage Areas</b></p> <p><b>Utility Corridors</b></p>	<p><b>Recommendations on the site situation where the tree may be planted and/or conserved; locations where the tree would adapt well.</b></p> <p>O = tree to avoid; not suitable</p> <p>Blank = may or may not be suitable</p> <p>x = good choice</p> <p>XX = excellent choice</p>

<b>TREE CHARACTERISTIC</b>	<b>DESCRIPTION and ENTRY CHOICES</b>
<b>PHYSICAL CHARACTERISTICS</b>	
<b>Height Class in Urban Conditions</b>	<p><b>Height class (ground to tip of leader or tallest branch) of a mature tree commonly achieved in urban situations with less than optimal growing conditions.</b></p> <p>S = Small: 15-25 feet  M = Medium: 25-40 feet  L = Large: 40 feet and taller</p>
<b>Crown Class in Urban Conditions</b>	<p><b>The width of the crown (at its widest point) commonly achieved in urban situations with less than optimal growing conditions.</b></p> <p>VS = Very Small (150 square feet with a 15 foot crown diameter)  S = Small (400 square feet with a 25 foot crown diameter)  M = Medium (900 square feet with a 35 foot crown diameter)  L = Large (1,600 square feet with a 45 foot crown diameter)</p>
<b>Mature Crown Form</b>	<p><b>General shape of the tree crown (leaves and branches) when fully leafed out.</b></p> <p>Irregular  Multi-Stemmed  Oval (Columnar)  Pyramidal  Rounded  Spreading  Upright (Vase)</p>
<b>Typical Range of Mature Tree Height</b>	<b>Typical range of height of tree in feet from ground to bud at tip of leader or tallest branch under various conditions.</b>
<b>Typical Range of Mature Crown Width</b>	<b>Typical range of spread of branches in feet at the widest diameter across the crown under various conditions.</b>
<b>Leaf Type</b>	<p><b>Persistence and type of leaf on the tree. Deciduous trees lose their leaves in the fall.</b></p> <p>DB = Deciduous Broadleaf  DC = Deciduous Conifer  EB = Evergreen Broadleaf  EC = Evergreen Conifer</p>
<b>Leaf Texture</b>	<p><b>Relative size and appearance of leaves.</b></p> <p>F = Fine  M = Medium  C = Coarse</p>
<b>Fall Leaf Color</b>	<p><b>The typical color of the tree's fall foliage.</b></p> <p>EV = evergreen  BR = bronze or brown  MA = maroon  MU = multi-colored: maroon, red, orange, yellow  OR = orange  RE = red  YE = yellow  I = insignificant color change</p>

TREE CHARACTERISTIC	DESCRIPTION and ENTRY CHOICES
<b>PHYSICAL CHARACTERISTICS (continued)</b>	
<b>Flower Color</b>	<b>For trees with showy flowers, indicates the typical flower color.</b>
	B = blue
	L = purple
	M = multiple colors: white, pink, purple, red, or others
	P = pink
	R = red
	W = white
	Y = yellow
<b>Flowering Time</b>	<b>For trees with showy flowers, the general season of blooming for the species.</b>
<b>Wildlife Value</b>	<b>Indicates with an "X" if the tree produces flowers (nectar) or fruits that are consumed by insects, birds, or mammals.</b>
<b>Excessive Litter</b>	<b>Indicates with an "X" if the tree produces large or hazardous leaves, fruit, or other litter.</b>
<b>ENVIRONMENTAL CHARACTERISTICS AND TOLERANCES</b>	
<b>Native Tree to metro Atlanta Area</b>	<b>Indicates whether or not the tree is found naturally growing in the metro Atlanta area</b>
	Y = Yes
	N = No
<b>Growth Rate</b>	<b>Typical rate of growth under urban conditions.</b>
	S = Slow: 1/2 to 1-1/2 feet/year
	M = Moderate: 1-1/2 to 2-1/2 feet/year
	F = Fast: 2-1/2 to 3+ feet/year
<b>Average Life Span</b>	<b>The average life span (useful service life) of the species when growing under average urban conditions. A tree is at the end of its useful service life when its risk of failure becomes unacceptable and cannot be improved or when the tree is no longer an asset due to its appearance or condition.</b>
	S = Short: less than 25 years useful service life.
	M = Moderate: 25 to 40 years useful service life.
	L = Large: 50 years or greater useful service life.
<b>Net Effect on Air Quality</b>	<b>The net monetary effects in cents attributable to the species on air quality; listed as a benefit (positive) or cost (negative). Includes the species net effect on ozone, sulfur dioxide, nitrogen dioxide, particulate matter (PM10), and carbon monoxide.</b>
<b>Soil Moisture</b>	<b>The typical soil moisture conditions for the species in its native habitat.</b>
	H = Hydric: wet and may be occasionally flooded for short periods
	M = Mesic: moist but moderately well- to well-drained
	X = Xeric: dry and very well-drained

TREE CHARACTERISTIC	DESCRIPTION and ENTRY CHOICES
<b>ENVIRONMENTAL CHARACTERISTICS AND TOLERANCES (continued)</b>	
<b>Drought Tolerance</b>	<p><b>Tolerance of the species to infrequent rain, low soil moisture, full sun, and high temperatures.</b></p> <p>Low = not tolerant to drought conditions</p> <p>Moderate = tolerant to mild drought conditions; moderately tolerant to severe drought conditions</p> <p>High = very tolerant to mild to severe and prolonged drought conditions</p>
<b>Preferred Soil pH</b>	<p><b>Relative soil acidity or alkalinity preferred by the species. In many cases, a range of pH preference is given if it was available. In other cases, a general level is given. A pH of 7.0 is neutral, a pH of less than 7.0 is acidic, and a pH of greater than 7.0 is alkaline.</b></p> <p>ac = acidic (5.0 to 6.0)</p> <p>sl ac = slightly acidic (6.0 to 7.0)</p> <p>nu = neutral (7.0)</p> <p>sl al = sl alkaline (7.0 to 8.0)</p> <p>al = alkaline (8.0 to 8.5)</p> <p>n/a = no information available</p>
<b>Light Requirement</b>	<p><b>The amount of sunlight the species prefers or will tolerate. Trees that are typically found in the understory or are characteristic of late forest successional stages prefer shade or at least partial shade, while trees that typically form the overstory or are characteristic of early successional stages prefer full sun.</b></p> <p>FS = Full Sun</p> <p>PS = Partial Shade</p> <p>SH = Shade</p>
<b>Construction Tolerance/Limitations</b>	<p><b>The broad tolerance of the species in its home range to construction damage, and the limitations that constrain a species tolerance to damage.</b></p> <p>Tolerance</p> <p>P = Poor</p> <p>M = Moderate</p> <p>G = Good</p> <p>Limitations</p> <p>I = physical injury, wood compartmentalization and decay</p> <p>P = pest complications, including chronic and acute attacks</p> <p>S = soil conditions, including aeration and water availability</p> <p>C = limited climatic tolerances, including native range, hardiness, and micro-climate change</p> <p>A = all of the limitations described above</p>
<b>Urban Tolerant Tree</b>	<p><b>Based upon other characteristics and tolerances to urban conditions; an "X" indicates the species is suitable for planting under "tough" urban conditions.</b></p>







**City of Woodstock Tree Species List, as adapted from Athens Clarke County**

SPECIES COMMON NAME	LATIN NAME	CANOPY AREA FOR DEVELOPMENT CODE			RECOMMENDED USES								PHYSICAL CHARACTERISTICS										ENVIRONMENTAL CHARACTERISTICS AND TOLERANCES											
		Square Feet of Canopy	Parking Lot Canopy Tree	Canopy Size Category	Level of Use	Large Landscape Areas	Road Frontages - Street	Road Frontages - Yard	Parking Lots	Piazas and Downtown Settings	Buffers	Riparian Zones and Drainage Areas	Utility Corridors	Height Class in Urban Conditions	Crown Class in Urban Conditions	Mature Crown Form	Typical Range of Mature Tree Height	Typical Range of Mature Crown Width	Leaf Type	Leaf Texture	Fall Leaf Color	Flower Color	Flowering Time	Wildlife Value	Excessive Litter	Native Tree to metro Atl.	Growth Rate	Average Life Span	Net Effect on Air Quality	Soil Moisture	Drought Tolerance	Preferred Soil pH	Light Requirement	Construction Tolerance/Limitations
Poplar, Yellow (Tuliptree)	<i>Liriodendron tulipifera</i>	1,600	2	Large	P	XX	x	x			XX	0	L	L	Oval	80-150	30-60	DB	C	YE	Y	Spring	X		Y	M	L	0.171	M	L	sl ac	FS	P/IS	
Redbud, Eastern	<i>Cercis canadensis</i>	400		Small	P	XX	XX	XX	XX	XX	x	XX	S	S	Spreading	25-50	15-25	DB	M	YE	P	Spring	X		Y	F	S	0.012	M	M	ac-sl ac	PS	M/S	
Redbud, Eastern White	<i>Cercis canadensis</i> var. <i>alba</i>	400		Small	P	x	XX	XX	XX	x	x	XX	S	S	Spreading	20-30	15-25	DB	M	YE	W	Spring	X		Y	F	S	n/a	M	M	ac-sl ac	PS	n/a	
Redbud, 'Forest Pansy'	<i>Cercis canadensis</i> 'Forest Pansy'	400		Small	P	x	XX	XX	XX	x	x	XX	S	S	Spreading	20-30	15-25	DB	M	YE	P	Spring	X		Y	F	S	n/a	M	L	ac-sl ac	PS	n/a	
Redbud, 'Oklahoma'	<i>Cercis reniformis</i> 'Oklahoma'	400		Small	P		XX	XX	x	XX		XX	S	S	Rounded	20-25	15-20	DB	M	YE	P	Spring	X		N	M	S	n/a	D	H	ac-sl ac	FS	n/a	X
Redbud, 'Texas White'	<i>Cercis reniformis</i> 'Texas White'	400		Small	P		XX	XX	x	XX		XX	S	S	Rounded	20-25	15-20	DB	M	YE	W	Spring	X		N	M	S	n/a	D	H	ac-sl ac	FS	n/a	
Redcedar, Eastern	<i>Juniperus virginiana</i>	900		Medium	P	x		XX	x		XX	x	0	M	M	Pyramidal	40-60	10-20	EC	F	EV	I		X	Y	S	M	-0.010	M	H	ac-nu	FS	M/IS	
Redwood, Dawn	<i>Metasequoia glyptostroboides</i>	900		Medium	P	x		XX	x		XX		L	M	Pyramidal	75-100	25-30	DC	F	BR	I				N	F	L	0.163	M	M	n/a	FS	n/a	X
Royal Paulownia (Princess-Tree)	<i>Paulownia tomentosa</i>	900		Medium	L		0	x	0	0	0	0	M	M	Irregular	30-50	20-50	DB	C	YE	P	Spring	X		N	F	S	0.022	M	M	ac-sl alk	FS	g	
Sassafras	<i>Sassafras albidum</i>	900		Medium	C	x		x		x	x		M	M	Oval	30-60	20-40	DB	M	OR	Y	Spring	X		Y	M	M	0.069	M	H	sl ac	FS	G/	
Serviceberry, Downy	<i>Amelanchier arborea</i>	400		Small	P	XX	XX	XX		XX	XX	x	S	S	Irregular	15-40	10-20	DB	M	OR	W	Spring	X		Y	S	M	0.004	M	M	acidic	PS	M/IS	
Silverbell, Carolina	<i>Halesia carolina</i>	900	2	Medium	P	XX	x	x	x			x	M	M	Irregular	30-60	20-35	DB	M	YE	W	Spring			Y	M	M	n/a	M	L	ac-sl alk	PS	M/ISC	
Smoketree, American	<i>Cotinus obovatus</i>	150		Very Small	L			x				x	S	VS	Oval	15-30	10-25	DB	M	MU	P	Spring			Y	M	S	n/a	D	H	sl ac-sl alk	PS	n/a	X
Smoketree, Common	<i>Cotinus coggygria</i>	150		Very Small	L			x				x	S	VS	Oval	10-15	10-15	DB	M	MU	P	Late Spring			N	M	S	n/a	D	H	sl ac-sl alk	FS	n/a	X
Sourwood	<i>Oxydendrum arboreum</i>	900	2	Medium	C	XX		x	x				M	M	Spreading	30-60	20-30	DB	M	RE	W	Summer			Y	M	S	0.018	M	M	ac-sl ac	FS	P/A	
Sparkleberry, Tree	<i>Vaccinium arboreum</i>	150		Very Small	C			x			x	x	S	VS	Irregular	10-20	5-10	DB	F	RE	W	Late Spring	X		Y	S	S	n/a	M	M	ac-sl alk	S	M/A	
Spruce Varieties	<i>Picea</i> species	900		Medium	N								L	M											N									
Sugarberry	<i>Celtis laevigata</i>	1,600		Large	C	x		x			0	x	L	L	Spreading	60-80	25-60	DB	F/M	YE	I		X		Y	M	M	0.118	M	M	ac	FS	G/I	
Sweetgum	<i>Liquidambar styraciflua</i>	1,600		Large	C	x		0	x	0	0	x	L	L	Oval	60-80	40-60	DB	M	MU	I		X	X	Y	F	L	-0.488	M	L	sl ac	FS	G/	
Sweetgum, Fruitless	<i>Liquidambar styraciflua</i> 'Rotundiloba'	1,600	2	Large	P	x		x	x	x			L	L	Oval	50-70	35-45	DB	C	MU	I				Y	M	M	n/a	M	L	ac-sl alk	FS	n/a	
Sycamore	<i>Platanus occidentalis</i>	1,600	2	Large	P	x		x	x		x	0	L	L	Oval	70-100	30-70	DB	C	BR	I		X		Y	F	M	-0.789	M	M	sl ac-sl alk	FS	G/	
Tallowtree, Chinese	<i>Sapium sebiferum</i>	900		Medium	N								M	M											N									
Tree-of-Heaven (Ailanthus)	<i>Ailanthus altissima</i>	900		Medium	N								M	M											N									
Walnut, Black	<i>Juglans nigra</i>	1,600		Large	C	x		0	x	0	0	x	L	L	Rounded	60-70	50-70	DB	M	YE	I		X	X	Y	M	L	0.086	M	L	acidic	FS	P/IS	
Waxmyrtle, Southern	<i>Myrica cerifera</i>	150		Very Small	P			x	x		x	0	S	VS	Multi-Stemmed	10-30	10-30	EB	F	EV	I		X		N	M	S	n/a	M	M	ac-alk	FS	G/	
Willow, Black	<i>Salix nigra</i>	900		Medium	C	x		0		0	0	x	M	M	Irregular	30-40	30-40	DB	F/M	YE	I				Y	F	S	-0.177	W	L	n/a	FS	G/	
Willow, Weeping	<i>Salix babylonica</i>	1,600		Large	L	x		0	x	0	0		L	L	Rounded	30-70	20-70	DB	F/M	YE	I				N	F	M	-0.096	W	M	acidic	FS	mg	
Winterberry, Common	<i>Ilex verticillata</i>	150		Very Small	P	x		x			x	x	S	VS	Multi-Stemmed	5-15	5-10	DB	M	I	I		X		Y	M	S	n/a	M	L	ac	FS	G/	
Witchhazel, Common	<i>Hamamelis virginiana</i>	400		Small	P	x		x		x	x		S	S	Spreading	20-35	20-35	DB	M/C	YE	Y	Fall			Y	M	M	-0.009	M	M	sl ac	PS	M/IS	
Yellowwood, American	<i>Cladrastis kentukea</i>	900	2	Medium	L	x		x	x				M	M	Upright	30-50	40-50	DB	M/C	YE	W	Spring			N	M	M	0.013	M	M	n/a	PS	P/A	
Zelkova, Japanese	<i>Zelkova serrata</i>	1,600	1	Large	L			x	x	x		0	L	L	Upright	40-80	30-75	DB	M	RE	I				N	M	M	0.084	M	H	ac-sl alk	FS	n/a	X

1 = trees that will project significant shade, intercept enough water, substantially filter out pollutants, and survive the conditions within a parking area to the extent they could be considered a "canopy" tree.  
 2 = same as 1, except that these trees are ONLY appropriate for large, expanded tree islands or landscape strips, swales, or moist soil conditions with plenty of rooting space.

**Evergreen & Semi-evergreen Shrubs - Suggested List for Buffers**

- Additional shrubs allowed subject to approval from staff**
- Abelia 'Rose Creek' Abelia or similar
  - Cleyera Cleyera japonica
  - Chinese Holly Ilex cornuta 'Needlepoint' or similar
  - 'Shamrock' Holly Ilex glabra 'Shamrock' or similar
  - Dwarf yaupon Holly Ilex vomitoria 'nana' or similar
  - Anise Illicium parviflorum
  - Loropetalum Loropetalum chinensis - also includes dwarf varieties
  - Myrica cerifera Wax myrtle
  - 'Emerald' Arborvitae Thuja occidentalis - or similar shrub species
  - Viburnum Viburnum obovatum 'Mrs. Schillers delight' or similar