Common Name	Scientific Name	Width at Maturity	Height at Maturity	Irrigated Tree Wells/Grates	Street Trees	Parking Lot Interiors	P-lot Perimeter/ Planting Strips	Residential Yard	Buffers	Comments / "Approved Cultivars"
Alder, Manchurian	Alnus hirsuta	20	40	Y		Y	Y	Y	Y	
Ash, Green	Fraxinus pennsylvanica	25	50					Y	Y	Cultivars only,: "Patmore", "Summit", "Marhsall's Seedless"; Borers can still be a problem
Ash, White	Fraxinus americana	40	50					Υ		Cultivatrs only: "American Applause", "Autumn Purple®"; Needs space
Beech, American	Fagus grandifolia	40	50						Y	Shallow roots
Birch, River	Betula nigra	40	40				Y	Y	Υ	Drought sensitive, "DuraHeat [®] ", "Fox Valley", "Heritage", "Suwanee"
Birch, Sweet	Betula lenta	35	40				Y	Y	Y	
Buckeye, Yellow	Aesculus flava	30	50						Y	Moist soils only
Cedar, Atlantic White*	Chamaecyparis thyoides	10	40					Y		Full Sun
Cedar, Atlas*	Cedrus atlantica	30	40					Y		Specimen tree
Cedar, Blue Atlas*	Cedrus atlantica 'Glauca'	40	60				Y	Y	Y	No wet or poorly drained soils
Cedar, Deodar*	Cedrus deodara	30	40				Y	Y	Y	Needs space; "Aurea"
Cedar, Eastern Red*	Juniperus virginiana	10	30					Y		Needs full sun; "Brodie", "Emerald Sentinel", Princeton Sentry"
Cedar, Incense	Calocedrus decurrens	10	30					Υ	Υ	
Coffeetree, Kentucky	Gymnocladus dioicus	40	60			Y	Y	Y	Y	Drops pods
Cryptomeria, Japense*	Cryptomeria japonica	25	50					Y	Y	"Ben Franklin", "Black Dragon", "Compacta", "Lobbii", "Yoshino"
Cypress, Arizona*	Cupressus arizonica	15	30				Y	Υ	Y	Best in full sun
Cypress, Bald	Taxodium distichum	20	50				Y	Y	Y	"Monarch of Illinois", "Shawnee Brave", "Autumn Gold", Needs space
Dogwood, Giant	Cornus controversa	20	35	Y				Y	Y	
Elm, Lacebark (Chinese)	Ulmus parvifolia	35	40	Y	Υ		Υ	Υ	Υ	Needs to be trained to central leader, "Athena®", "Allee®", "Drake", "Bosque"; Needs Space
Falsecypress, Hinoki*	Chamaecyparis obtuse	10	50						Υ	"Crippssii", "Fernspray", "Fernspray Gold", "Kosteri", "Mariesii", "Tempelhof"
Falsecypress, Japanese*	Chamaecyparis pisifera	10	50						Y	"Boulevard", "Lemon Thread", "Snow", "Tsukuma"
Fir, China	Cunninghamia lanceolata	20	30						Y	"Chason's Gift"
Fir, Cilicica*	Abies cilicica	25	60						Y	

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Fir, Japanese*	Abies firma	20	40					Y	Y	
Gum, Black	Nyssa sylvatica	20	40				Y	Y	Y	No standing water, residential street tree only
Hackberry (Sugarberry)	Celtis laevigata	60	60					Y	Y	
Hackberry	Celtis occidentalis	40	40	Y		Y	Y	Y	Y	"Prairie's Pride"
Hemlock, Southern Japanese*	Tsuga sieboldii	20	30					Y	Y	
Holly, American*	llex opaca	20	30				Y	Y	Y	Single trunk only
Honeylocust	Gleditsia triacanthos	25	50				Y	Y	Y	Thornless cultivars only
Hornbeam, American	Carpinus caroliniana	20	30	Y		Y	Y	Y	Y	
Linden, American	Tilia americana	45	60	Y		Y	Y	Y	Y	Not good for wet sites
Magnolia, Cucumber Tree	Magnolia acuminate	50	50					Y		"Yellow Fever"
Magnolia, Freeman*	Magnolia x 'Freeman'	30	60					Y	Y	
Magnolia, Hybrid	Magnolia x spp.	30	40				Y	Y	Y	"Yellow Bird"
Magnolia, Southern*	Magnolia grandiflora	30	40					Y	Y	"Alta™ ", "Baldwin", "Claudia Wannamaker", "D.D. Blancher", "Dearing", "Edith Bogue", "Gloriosa", "Goliath", "Greenback™", "Hasse", "Kingsville", "Majestic Beauty", "Russet", "Samual Sommer", "Satin Leaf"
Maple, Freeman	Acer x freemanii (rubrum x saccharum)	20	40					Y	Y	"Armstrong", "Autumn Blaze™", "Celebration/ <i>Celzam</i> ", "Marmo", "Morgan", "Scarlet Sentinel™"
Maple, Nippon	Acer nipponicum	30	50				Y	Y	Y	
Maple, Red	Acer rubrum	25	40					Y	Y	"Autumn Flame", "Autumn Radiance", "Bowhall", "Burgundy Belle", "Northwood", "October Brilliance", "October Glory", "Red Sunset", "Schlesingeri", "Shade King", "V.J. Drake"
Maple, Sugar	Acer saccharum	30	50		Y	Y	Y	Y	Y	"Arrowhead", "Bonfire", "Caddo", "Commemoration", "Green Mountain", "Goldspire", "Legacy", "Newton Sentry", "Seneca Chief", "Sweet Shadow"
Mountainash, Korean	Sorbus alnifolia	20	30					Y	Y	"Redbird"; "Skyline"
Oak, Bur	Quercus macrocarpa	70	70					Y		Tolerates urban conditions, but difficult to transplant
Oak, Chestnut	Quercus prinus	40	60					Y	Y	Wildlife food

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Oak, Columnar English	Quercus robur Fastigiata	10	50					Y	Y	
Oak, Daimyo	Quercus dentate	50	50					Y	Y	"Pinnatifida"
Oak, English	Quercus robur	40	40					Y		Needs a lot of space; "Filicifolia", "Variegata"
Oak, Laurel*	Quercus hemisphaerica	30	40	Y		Y	Y	Y	Y	Soil needs to be well-drained
Oak, Oriental	Quercus variabilis	40	60					Y	Y	
Oak, Overcup	Quercus lyrata	35	35			Y	Y	Y	Y	"Highbeam®"
Oak, Pin	Quercus palustris	40	60					Y	Y	Tends to have more surface roots
Oak, Post	Quercus stellata	30	40			Y		Y	Y	
Oak, Red	Quercus rubra	60	60					Y	Y	Needs sun, drought and pollution tolerant
Oak, Sawtooth	Quercus acutissima	30	30	Y	Y	Y	Y	Y	Y	Very adaptable
Oak, Shingle	Quercus imbricaria	50	50					Y	Y	
Oak, Shumard Red	Quercus shumardii	40	40					Y	Y	Shallow roots
Oak, Southern Red	Quercus falcate	50	70					Y	Y	
Oak, Swamp Chestmut	Quercus michauxii	50	60					Y	Y	Shallow roots
Oak, Swamp White	Quercus bicolor	50	50					Y	Y	Not good with air pollution
Oak, Water	Quercus nigra	30	50					Y	Y	
Oak, Willow	Quercus phellos	30	60			Y	Y	Y	Y	
Pear, Chinese sand	Pyrus pyrifolia	30	30				Y	Y		Needs well-drained soil and sun
Pecan	Carya illinoensis	40	70					Y	Υ	
Persimmon	Diospyros virginiana	20	30						Y	
Pine, Bosnian*	Pinus heldreichii	30	70						Υ	
Pine, Cluster*	Pinus pinaster	20	40						Υ	
Pine, Japanese Black*	Pinus thunbergiana	25	50					Y	Υ	
Pine, Lacebark*	Pinus bungeana	20	30						Y	
Pine, Loblolly*	Pinus taeda	30	50						Υ	
Pine, Longleaf*	Pinus palustris	30	80						Y	Needs sandy soil, prone to storm damage, dense buffers only

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Pine, Pond*	Pinus serotina	20	30						Y	Needs sun
Pine, Scotch*	Pinus sylvestris	20	30					Y	Y	Needs sun and well-drained soil
Pine, Spruce*	Pinus glabra	30	40						Y	
Pistachio, Chinese	Pistacia chinensis	25	30	Y	Y	Y	Y	Y	Y	
Planetree, London	Platanus acerifolia	65	70	Y		Y	Y	Y	Y	"Columbia"
Planetree, Oriental	Platanus orientalis	50	60			Y	Y	Y	Y	
Poplar, Tulip	Liriodendron tulipfera	20	40					Y	Y	"Arnold"
Raisintree, Japanese	Hovenua dulcis	20	30				Y	Y	Y	
Redwood, Dawn	Metasequoia glyptostroboides	15	50				Y	Υ	Y	"Ogon"
Redwood, Sierra*	Sequsiadendron giganteum	25	60				Y	Y	Y	"Hazel Smith"
Redwood, Soquel*	Sequoia sempervirens	20	50				Y	Υ	Y	
Sassafrass	Sassafras albidum	25	30						Y	
Spruce, Purple Lijiang	Picea likiangensis	15	30					Y	Y	
Sweetgum	Liquidambar styraciflua	50	60			Y	Y	Y	Y	Drought sensitive, "Rotundiloba" (fruitless)
Sweetgum, Formosan	Liquidambar formosana	25	40						Y	
Tulip Tree, Chinese	Liriodendron chinense	35	70						Y	
Willow, Hankow/Pekin	Salix matsudana	20	40					Y	Y	
Willow, Weeping	Salix babylonica	20	30						Y	Somewhat brittle, so should be protected in buffers
Willow, White	Salix alba var. sericea	50	60				Y	Y	Y	Moist Soils
Zelkova, Japanese	Zelkova serrata	40	50	Y	Y	Y	Y	Y	Y	"Autumn Glow", "GreenVase", "Green Veil", "Halka", "Spring Grove", "Village Green"
Zelkova, Schneider	Zelkova schneideriana	50	50	Y	Y	Y	Y	Y	Y	

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Alder, Japanese	Alnus japonica	10	15	Y		Y	Y	
Apricot, Japanese	Prunus mume	15	20	Y		Y	Y	Best on well-drained sites
Birch, River	Betula nigra	20	20			Y	Y	"Heritage®" cultivar only
Buckeye, Hybrids	Aesculus x	15	15				Y	Moist soils only; "Arnoldiana", "Homestead"
Buckeye, Red	Aesculus pavia	10	10			Y	Y	"Splendens", "Humilis"
Buckeye, Painted	Aesculus sylvatica/georgiana	10	10				Y	Moist soils only
Cherry, Higan	Prunus subhirtella	15	15	Y		Y		
Cherry, Japanese Flowering	Prunus serullata	15	20	Y	Y	Y	Y	"Accolade", "Okame", "Snow Goose", "Kwanzan", Best on well-drained sites, Beetles and root rot can be problems
Cherry Laurel, Carolina*	Prunus caroliniana	10	10			Y	Y	"Compacta", "Emerald King [™] ", "Bright 'N Tight [™] "; Needs good drainage
Chinquapin	Castanea pumila	10	20				Y	
Crabapple	Malus spp.	10	10					"Adirondack", "Centurion®", "Coralburst [™] ", "David", "Glendora White", "Golden Raindrops", "Indian Magic", "Madonna®", "Prairifire", "Spring Snow", "Snowdrift", "Sugar Tyme®", <i>floribunda, sargentii</i>
Crape myrtle	Lagerstroemia indica	10	15	Y	Y			"Burgundy Cotton [®] ", "Byers Standard Red", "Byers Wonderful White", "Catawba", "Centennial Spirit", "Cherokee", "Dallas Red", "Dynamite TM ", "Near East", "Peppermint Lace", "Potomac", "Powhatan", "Red Rocket [®] ", "Sarah's Favorite", "Seminole", "Siren Red [®] ", "Tonto", "Watermelon Red", "White Chocolate", "Yuma"; no dwarf cultivars; pruned to tree form
Crape myrtle	Lagerstroemia indica x Lagerstroemia faurei	10	15	Y	Y			"Acoma", "Arapahoe", "Biloxi", "Cheyenne", "Choctaw", "Lipan", "Miami", "Muskogee", "Natchez", "Osage", "Pecos", "Sioux", "Tuscarora", "Tuskegee", "Zuni"; no dwarf cultivars; pruned to tree form
Crape myrtle, Fantasy	Lagerstroemia faurei	10	15	Y				
Cypress, Italian	Cupressus sempervirens	5	20				Y	"Glauca", "Wichita Blue"
Dogwood	Cornus x spp.	20	20			Y	Y	"Aurora®", "Celestial®", "Constellation®", "Stellar Pink®",
Dogwood, Chinese	Cornus kousa chinensis	15	20	Y		Y	Y	
Dogwood, Cornelian Cherry	Cornus mas	15	20				Y	"Aurea", "Spring Glow", "Variegata"

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Dogwood, Flowering	Cornus florida	20	20				Y	Needs partial shade, "Cloud 9", "Weaver's White", "Red Cloud", "Rubra"
Dogwood, Kousa	Cornus kousa	20	20			Y	Y	"Wolf Eyes", "Satomi"
Fringetree	Chionanthus virginicus	15	15			Y	Y	Tree form only
Fringetree, Chinese	Chionanthus retusus	20	15			Y	Y	Well drained; tree form only
Goldenrain Tree	Koelreuteria paniculata	15	20	Y	Y	Y	Y	"September"
Holly, Dahoon*	llex cassine	10	20			Y	Y	"Baldwin", "Bryanii", "Tortifolia", "Tryon Palace", "Wild Robert"
Holly, Long Stalk*	llex pedunculosa	15	20			Y	Y	
Holly, Weeping Yaupon*	llex vomitoria f. pendula	10	20			Y	Y	
Holly, Nellie R. Stevens*	llex x 'Nellie R. Stevens'	10	25			Y	Y	
Holly, Carolina Sentinel*	llex x 'Carolina Sentinel'	10	20			Y	Y	
Holly, Foster's*	llex x attenuata	10	20			Y	Y	"East Palatka", "Foster's #2", "Savannah", "Sunny Foster"
Hophornbeam, American	Ostrya virginiana	15	25	Y		Y	Y	
Hornbeam, Heartleaf	Carpinus cordata	10	20			Y	Y	
Hornbeam, Japanese	Carpinus japonica	10	20			Y	Y	
Maackia, Amur	Maackia amuremsis	20	20	Y		Y	Y	
Magnolia, Columbus	Magnolia x vietchii	15	25	Y		Y	Y	
Magnolia, Hybrid	Magnolia x spp.	15	15			Y	Y	"Ann", "Athene", "Betty", "Butterflies", "Elizabeth", "Galaxy", "Jane", "Jon Jon", "Judy", "Paul Cook", "Pristine", "Randy", "Ricki", "Royal Crown", "Spectrum", "Susan", "Tina Durio", "Vulcan"
Magnolia, Hybrid Evergreen*	Magnolia x spp.	15	20			Y	Y	"Monland"
Magnolia, Lily	Magnolia liliiflora	10	10			Y	Y	"O'Neill", "Nigra"
Magnolia, Little Gem*	Magnolia grandiflora 'Little Gem'	10	15		Y	Y	Y	"Little Gem"
Magnolia, Loebner	Magnolia x loebneri	20	20			Y	Y	"Balleriana", "Leonard Messel", "Merrill", "Spring Snow", "Super Star", "white Stardust"
Magnolia, Oyama	Magnolia sieboldii	10	10			Y	Y	
Magnolia, Saucer	Magnolia x soulangiana	15	15		Y	Y	Y	"Alexandrina" (tree form), "Rustica Rubra"
Magnolia, Southern*	Magnolia grandiflora	20	20			Y	Y	"Baby Doll", "Bracken's Brown Beuaty", "Green Giant", "St. Mary", "Victoria"

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Magnolia, Star	Magnolia stellata	10	10			Y	Y	"Pink Stardust", "Royal Star"
Magnolia, Sweetbay (Swamp)	Magnolia virginiana	10	10			Y	Y	
Maple, Amur	Acer ginnala	15	15			Y	Y	"Flame"
Maple, Chalk (Whitebark)	Acer leucoderme	25	25	Y		Y	Y	Soil needs to be well drained
Maple, Fernleaf	Acer japonica f. aconitifolium	20	20				Y	
Maple, Hedge	Acer campestre	25	25			Y	Y	"Pulverulentum", "Queen Elizabeth", "Royal Ruby"
Maple, Japanese	Acer palmatum	10	15			Y	Y	
Maple, Paperbark	Acer griseum	15	20				Y	
Maple, Purple blow	Acer truncatum	20	20	Y		Y	Y	"Norwegian Sunset™"
Maple, Southern Sugar	Acer barbatum	20	20				Y	No dry or compact soil, shallow roots
Maple, Trident	Acer buergeranum	20	25	Y	Y	Y	Y	"Mino Yatabusa", "Naputo Kaede", "Street Wise®",
Mimosa	Albizia julibrissin	25	20				Y	Needs Sun; "Charlotte", "Tryon"
Oak, Georgia	Quercus Georgiana	15	15			Y	Y	Needs Sun
Oak, Henry tanbark	Lithocarpus henryi	15	25			Y	Y	
Oak, Japanese Blue	Quercus glauca	10	20			Y	Y	
Olive, Wild*	Osmanthus fortunei	10	15				Y	
Peach, Corinthian cultivars	Prunus persica Corinthian	10	20			Y	Y	"Corinthian Mauve", "Corinthian Rose", "Corinthian White", "Pillar"
Persimmon, Japanese	Diospyros khaki	10	10				Y	
Pine, Dwarf Loblolly*	Pinus taeda	10	20				Y	"Dixie", "Nana"
Pine, Swiss Mountain*	Pinus mugo	15	25			Y	Y	"Gallica"
Pine, Virginia*	Pinus virginiana	10	15				Y	
Plum, Blieriana	Prunus x bileriana	15	15			Y	Y	Needs sun and well-drained soil
Plum, Chickasaw	Prunus augustifolia	15	15			Y	Y	
Plum, Purple Leaf	Prunus cerasifera	15	15			Y	Y	Needs sun and well-drained soil; "Atropurea"
Redbay*	Persea borbonia	10	15				Y	
Redbud, California	Cercis californica	10	10				Y	
Redbud, Chinese	Cercis chinensis	10	10				Y	"Alba", "Avondale", "Nana", "Shipobana"

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Redbud, Eastern	Cercis canadensis	25	20			Y	Y	Moist soil but good drainage; "Appalachian Red", "Flame", "Forest Pansy", "Pinkbud", "Royal White", "Silver Cloud", "Tennessee Pink", "Winthers Pink Charm"
Redbud, Mediterranean	Cercis silicuastrum	10	15				Y	
Redbud, Mexican	Cercis Canadensis spp mexicana	10	15				Y	
Redbud, Oklahoma	Cercis canadensis spp retisus	15	20			Y	Y	
Redbud, Texas	Cercis canadensis spp texensis	15	15			Y	Y	"Texas White"
Rhamnella	Rhamnella franguloides	15	20				Y	
Sapphireberry	Symplocos paniculata	10	15				Y	
Serviceberry, Allegheny	Amelancier laevis	15	15				Y	"Snowcloud"
Serviceberry, Apple	Amelanchier x grandiflora	15	20			Y	Y	Partial shade recommended, tree-trained, multi-stem; "Autumn Brilliance", "Autumn Sunset", "Ballerina", "Cumulus", "Princess Diana", "Prince Charles", "Prince William", "Robin Hill"
Serviceberry, Downy	Amelanchier arborea	10	15			Y	Y	Tree-trained only, multi-stem
Seven-son Flower	Heptacodium miconioides	10	10				Y	
Silverbell, Carolina	Halesia tetraptera	15	20				Y	Needs well-drained soil
Silverbell, Two-winged	Halesia diptera	15	15			Y	Y	
Smoketree	Cotinus coggygria	10	10			Y	Y	
Snowbell, Japanese	Styrax japonicus	20	20				Y	Best in partial shade; "Crystal", "Emerald Pagoda", "Fargesii", "Issai", "Snowfall"
Sourwood	Oxydendron aboreum	10	20			Y	Y	
Styrax, Fragrant	Styrax obassia	15	20				Y	
Sweetheart Tree, Korean	Euscaphis japonica	10	20				Y	
Willow, Corkscrew	Salix matsudana var. tortuosa	15	20				Y	

*Evergreen trees

Town of Knightdale Approved Shrub List

Any plant shown on the Shrub list maintained by the North Carolina State University Department of Horticulture Science's website, located at: <u>https://content.ces.ncsu.edu/shrubs-1-4-for-north-carolina-landscapes</u> <u>https://content.ces.ncsu.edu/shrubs-4-8-for-north-carolina-landscapes</u>

The plant must be hardy for Zone 8, not be prone to disease or pests, or be specifically mentioned as intolerant of heat or drought.

The minimum range of the width and height for each plant will be used for setting the dimensions of the plant at maturity and for fulfilling the performance standards of each Buffer Yard type listed in Section 8.6(B) of the Town of Knightdale Unified Development Ordinance.

Town of Knightdale Expressly Prohibited Trees

Prohibited Trees:

Alder, Common Boxelder Chestnut, American Chestnut, Spanish Elm, American Elm, Siberian Hemlock, Eastern Hemlock, Carolina Hornbeam, European Horsechestnut, Common Linden, Littleleaf Maple, Nikko	Alnus glutinosa Acer negundo Castanea dentate Castanea sative Ulmus americana Ulmus pumila Tsuga canadensis Tsuga caroliniana Carpinus betulus Aesculus hippocastanum Tilia cordata Acer nikoense	Only hardy to Zone 7 Brittle, bugs Disease problems Only hardy to Zone 7 Dutch Elm disease Brittle, elm leaf beetle Only hardy to Zone 7 Only hardy to Zone 7 Only hardy to Zone 7 Only hardy to Zone 7 Only hardy to Zone 7 Disease problems, only hardy to Zone 7 Only hardy to Zone 7
Maple, Norway	Acer platanoides	Only hardy to Zone 7
Maple, Silver	Acer saccharinum	Weak wood, shallow roots
Oak, Live	Quercus virginiana	Too cold in winter
Pear, Bradford Pine, Austrian	Pyrus calleryana 'Bradford' Pinus nigra	Splitting problem Only hardy to Zone 7
Pine, Eastern White	Pinus strobus	Only hardy to Zone 7
Pine, Shortleaf	Pinus echinata	Shallow roots, pine beetle
Sycamore	Platanus occidentalis	Scorch and disease problems