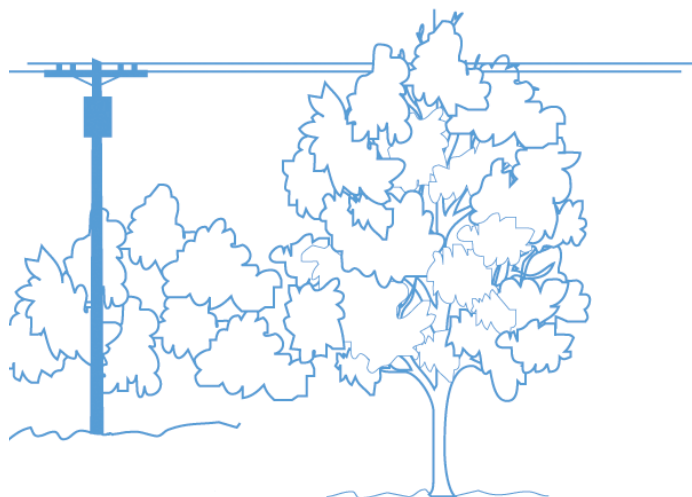


How to avoid tree & utility line conflicts when selecting and planting trees



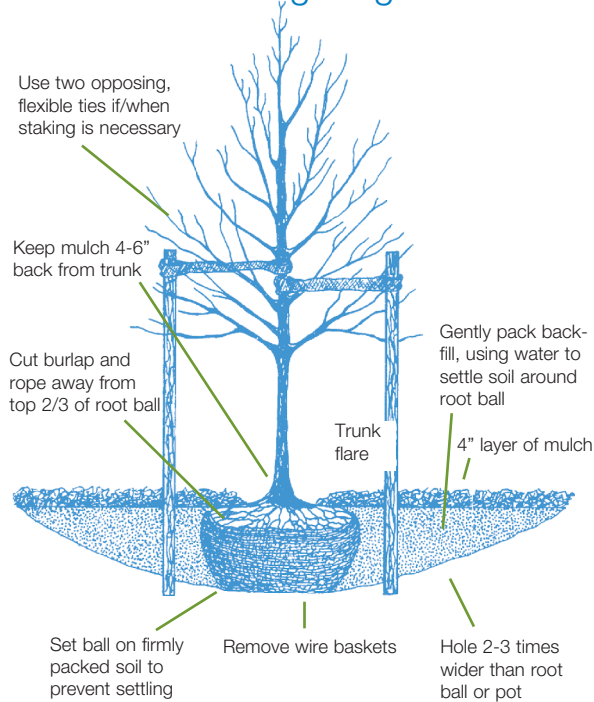
Determining where to plant a tree is a decision that should not be taken lightly. Many factors need to be evaluated prior to planting. Before planting, make sure to consider the tree's full growth potential to see if the location of the tree will affect any overhead or underground utility lines and rights-of-way. The ultimate mature height of the tree to be planted must be within the available overhead growing space. Proper tree species selection and placement will assure the avoidance of or minimize tree and utility line conflicts in the future.

To assist you in making a decision on what type of low-growing tree species to choose, where to place it to avoid potential conflicts and how to plant it properly, National Grid is providing this fact sheet for your use. This will help assure the tree you plant will not only add beauty to your home, your community and benefits the environment, but also contributes to future electric service reliability by avoiding overhead and/or buried lines.



Correct planting instructions

Tree Planting Diagram



1. Dig a shallow hole, 2-3 times wider than the width of the ball/pot, but no deeper than the depth of the ball/pot.
2. Lift and set the tree carefully into the center of the hole on firm soil. **Be sure the top of the trunk flare at the base of the tree is even with grade level, or even 1-2" higher to allow for possible settling. Carefully pull back some soil from the base of the tree to assure the trunk flare and upper layer of roots have not been covered with excess soil. Remove any excess soil back to the original soil level across the top of the ball or pot and raise the ball or pot to the proper level by adding soil to the bottom of the hole.**
3. Straighten the tree and back fill the hole 1/3 of the way. Remove all rope or twine from the base of the tree and top of the root ball; cut and remove the upper 2/3 of the burlap and remove the wire basket. Be sure to remove all plastic/nylon twine and synthetic burlap as this material will not rot away and may strangle tree roots. Plastic pots need to be removed completely while peat pots need only be sliced down the sides. Carefully loosen the outer roots from potted containers.
4. Backfill and pack the soil firmly and uniformly in layers around the hole, watering as you go to settle the soil. It is not necessary to amend the soil or add fertilizers at this time. Use the excess soil to create an earthen berm (low earth wall) around the ball on the surface just past the root ball to help retain water. Apply a 2-4" layer mulch to the entire area under the tree to help maintain moisture, keeping the mulch 4-6" from the base of the tree.
5. Stake the tree for support, only if absolutely necessary, and do so with 2-3 stakes and wide, soft, loose ties which will allow the tree to move with the wind encouraging faster establishment. Water the tree as needed once the upper soil surface has dried well into the Fall. Do NOT cut the main central leader; prune only dead or damaged limbs; do NOT apply tree paints.

For more information, call our Distribution Forestry Department at **315-428-5987**, or visit **www.nationalgridus.com**.

Before You Dig

Upstate NY

Dig Safely

811 or 1-800-962-7962

www.digsafelynewyork.com

at least two working days prior to excavation

Massachusetts and New Hampshire

811 or 1-888-344-7233

www.digsafe.com

72 hours (except weekends and holidays)

Rhode Island

811 or 1-888-344-7233

48 hours (except weekends and holidays)

Recommended Small Trees For Planting Under Low Overhead Utility Lines or Confined Spaces

Urban Trees Recommended for USDA Planting Zones 6 and Below

Common name	Scientific name	Zone	Mature Height**	Crown Shape	Comments
Trident Maple	<i>Acer buergerianum</i>	6a	20'-25'	round	variable Fall color (yellow-red), low branched, requires pruning for street tree use; salt tolerant
	'Street Wise'	6a	20'-25'	oval	can be trained to single stem; new growth reddish-purple at first; burgundy Fall color
Hedge Maple (CU-SS)	<i>Acer campestre</i>	5a	20'-35'	round	adapted to compaction and range of soil Ph; will sustain severe pruning; can become invasive
	'Carnival'	5a	20'-35'		variegated foliage
	'Elegant'	5a	20'-35'	upright	vigorous grower; compact form; ascending habit
	'Elsrijk'	5a	20'-35'	narrow upright	narrow crown form; leaves mildew resistant
	'Evenly Red'	5a	20'-35'		superior red Fall color
	'Field Maple'	5a	20'-35'		more uniform growth habit than species
	'Jade Patina'	5a	20'-35'		dark green leaves; exceptional cold tolerance (not affected by stem frost crack)
	'Louisa Red Shine'	5a	20'-35'		leaves emerge red then fade to reddish-green
	'Metro Gold' (aka 'Panacek')	5a	20'-35'	narrow upright	superior gold Fall color; tighter form than 'Queen Elizabeth'
	'Nanum' (aka 'Compactum')	5a	20'-35'	upright	semi-dwarf, bulbous habit (often grafted on a standard trunk)
	'Postelense'	5a	20'-35'		foliage emerges yellow then matures to green
	'Pulverentum'	5a	20'-35'		variegated foliage
	'Royal Ruby'	5a	20'-35'		new foliage purplish-red
	'Schichtel's Upright'	5a	20'-35'	narrow oval	narrower upright crown form
	'Schwerini'	5a	20'-35'		new purple foliage eventually turns green
	'St. Gregory'	5a	20'-35'	pyramidal	strong central leader, smooth bark; new reddish-green foliage turns a rich, dark green
	'William Caldwell'	5a	20'-35'	fastigate	Fall foliage turns orange/red when planted in acidic soil (not yellow as species)
Miyabe Maple (CU-SS)	<i>Acer miyabei</i>	5a	35-45'	upright oval-round	slow growing, dwarf Sugar Maple with tight conical canopy
	'Rugged Ridge'	5a	35-45'	upright oval-round	more deeply furrowed bark than species; use where taller poles; not likely full height on streets
	'State Street' (aka 'Morton')	4	35-45'	upright oval	good uniform branching, dark green foliage; gold-yellow Fall color
Sugar-Cone' Maple	<i>Acer saccharum</i> 'Sugar-Cone'	3b	<30'	pyramidal	slow growing, dwarf Sugar Maple with tight conical canopy
Amur Maple	<i>Acer tartaricum</i> ssp. <i>ginnala</i>	3a	15'-20'	rounded	often multi-stemmed, but can be trained/specified for single stem; variable Fall color; cold hardy
	'Embers'	3a	15'-20'	rounded	bright red seeds, red Fall color
	'Emerald Fir'	3a	15'-20'	rounded	compact, slow growing; rounded crown
	'Flame'	3a	15'-20'	rounded	red seeds, fiery red Fall color
	'Red Fruit'	3a	15'-20'	rounded	brilliant red seeds
	'Red Rhapsody' (aka 'Mandy')	3a	15'-20'	rounded	lustrous dark green leaves; brilliant red Fall color
	'Rugged Charm'	3a	20-28'	upright oval	15' crown width; compact form; yellow-orange to red Fall color; clusters of white flowers in Spring
	'Beethoven'	4	20'-25'	narrow columnar	10' crown width, central leader; red/yellow Fall color
	'Mozazam' (aka 'Mozart')	4	15'-20'	oval	15' crown width, central leader; red/yellow Fall color; red samaras
Serviceberry	<i>Amelanchier</i> spp.	3b	20'-30'	oval	edible fruit, early white flowers, red to yellow Fall color; can be small tree to large multi-stem shrub
	'Autumn Brilliance'	3b	15'-25'	oval	heavy flowering, bright red-orange Fall color; excellent heat/drought tolerance; resists leaf spot
(possible <i>A. lamarki</i> selection)	'Ballerina'	3b	15'-25'	upright	spreading branches; pendulous flowers; bronze Spring leaves turning dark, glossy green
	'Cole's Select'	3b	15'	rounded	15' wide crown; glossier, smaller green leaves; orange-red to red Fall color

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Common name	Scientific name	Zone	Mature Height**	Crown Shape	Comments
	'Cumulus'	3b	15'-25'	columnar-pyramidal	12-18' wide crown; faster growing; yellow to orange-scarlet Fall color; may root sucker
	'Princess Diana'	3b	25'	oval	bright red, long lasting Fall color; may be single or multi-stemmed
	'Robin Hill'	3b	20'	narrow	12-15' wide crown; heavy flowering, pink buds, early bloomer; bronze tinged leaves
	'Rubescens'	3b			pink flowers in Spring
(possible A. canadensis cultivar)	'Spring Flurry'	3b	25-30'	upright oval	15' wide crown; strong central leader; green Summer foliage; orange Fall color
	'Reflection' (aka 'Refzam')	3b	25'	upright oval	20' wide crown; vigorous growth and similar traits as the species
(possible A. laevis cultivar)	'Majestic'	3b	25-30'	narrow oval	vigorous growth; new dark, reddish-orange foliage turning to dark green; heat resistant
(possible A. canadensis cultivar)	'Tradition' (aka 'Trazam')	3b	25-30'	oval	good branching, strong center leader; heavy fruiting; grey-green foliage; good early bloom
American Hornbeam	Carpinus caroliniana	3b	30'	rounded, spreading	"muscle" bark, good orange-red Fall color; slow to establish; difficult to transplant; native
	'Ball O' Fire' (aka 'J.N. Globe')	3b	15'	rounded	15' wide crown; compact; superior Fall color
	'Firespire' (aka 'J.N.Upright')	3b	20'	upright, narrow	10' wide crown; tight, upright form; impressive orange-red Fall color
	'Native Flame'	3b		upright oval	notable bright red Fall color
	'Palisade'	3b	25'	narrow, upright oval	12' wide crown at maturity; dense, tidy growth habit
Eastern Redbud (CU-SS)	Cercis canadensis	5b	20'-35'	open, spreading	edible, pink, very early Spring flowers; typically multi-stemmed; heart shape leaves; native
	'Ace of Hearts'	5b		rounded	compact form, dense dome-shaped canopy; semi-glossy leaves; zig-zag stems
	'Alba'	5b	20'	open, spreading	white flowers
	'Appalachian Red'	5b		open, spreading	magenta pink buds, dark reddish-pink flowers
	'Flame'	5b		open, spreading	double flowered
	'Forest Pansy'	5b-6	20'	open, spreading	typically smaller, slower growth; cold sensitive; red-purple Spring leaves, bronze Summer foliage
	'Hearts of Gold'	5b		open, spreading	new leaves emerge red then turn chartreuse then fade to green
	'Northern Strain'	5a		open, spreading	more cold hearty; limited availability
	'Rising Sun'	5b		open, spreading	similar to 'Hearts of Gold', more colorful; new leaves red, fading to orange to yellow to green
	'Royal White' (aka 'Royal')	5b		spreading	white flowers, earlier blooming; more compact; larger flowers than 'Alba'
	'Ruby Falls'	5b		weeping	purple foliage; weeping form
	'Silver Cloud'	5b		spreading	irregular, splotchy variegated foliage;
	'Whiters Pink Charm'	5b		open, spreading	brighter pink flowers than the species
Corneliancherry Dogwood (CU-SS)	Cornus mas	5a	20'	round - oval	multi-stemmed; showy early small yellow flowers; heavy fruiting (litter may be a nuisance!)
	'Alba'				white fruit
	'Aurea'				gold to chartreuse maturing foliage
	'Flava'				yellow fruit
	'Golden Glory'		20'	oval	heavy bloomer, larger fruit; red-purple Fall color; not as hardy as others forms
	'Variegata'				white variegated foliage
	'Aureo-Elegantissima' (aka 'Tricolor')				leaf edges bordered in yellow, green and pink
	'Fructu Volcano'				purple fruits

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Common name	Scientific name	Zone	Mature Height**	Crown Shape	Comments
	'Macrocarpa'				larger fruits
American Smoketree	Cotinus obovatus	5b	20'-30'	oval -round	low branching, multi-stemmed tree; 6-10" light, puffy, pyramidal Spring flower; blue green foliage
	'Red Leaf'				superior, reliable Fall clor
	'Grace'	5b	20'	round	more tree-like form; maroon to purple foliage; (can be spec'd for muti or single stemmed tree)
Thornless Cockspur Hawthorn (CU-SS)	Crataegus crus-galli inermis	4a	20'-25'	round	white flowers, bright red persistent fruit; thornless
	'Cuzam' (aka 'Crusader')		15'	round	faster growing; 12-15' wide; reportedly disease resistant
Washington Hawthorn (CU-SS)	Crataegus phaenopyrum	4b	20'-30'	round	white flowers; thorny; reddish-purple Fall color ; insect & disease prone; 'usually' multi-stem
	'Fastigata'		30'	columnar	columnar habit; 20' wide crown
	'Princeton Sentry'		30'	columnar	similar to 'Fastigata' but nearly thornless
	'Vaughn'		20'-30'	oval	hybrid cross with C. crus-galli; long lasting red fruit; prone to rust disease
Winter King Hawthorn (CU-SS)	Crataegus viridis 'Winter King'	5a	20'-30'	oval	thorny, white flowers, purple and scarlet Fall color, fruit persists; more disease resistant
Imperial Thornless Honeylocust (CU-SS)	Gleditsia triacanthos inermis 'Impcole'	4b	30'	broad round	open, spreading form; good branch angles; small leaves; yellow Fall color; only short variety
Goldenraintree (CU-SS)	Koelreuteria paniculata	5b	30'-40'	irreg. rounded	pest free; pyramidal, mid-Summer, yellow flower clusters; specify straight stem when ordering
	'Rose Lantern'		30'-40'	irreg. rounded	pink fruits
	'September'		30'-40'	irreg. rounded	later flowering
	'Summerburst'		30'-40'	irreg. rounded	foliage more glossy; better crown symmetry & heat resistance than species
Amur Maackia (CU-SS)	Maackia amurensis	4a	20-30'	rounded upright	4-6" long white pendulous flower clusters; grey-green leaves turn to olive green; pest free
	'MaacNificent'		20-30'	vase like	vigorous, upright branching; silvery, pubescent foliage in Spring
	'Starburst'		20-30'	rounded upright	denser crown, more uniform & vigorous than species
	'Summertime'		18-20'	rounded upright	smaller than the species 12-15' wide crown
Flowering Crabapple (CU-SS)	Malus spp.	4b			various cultivars (some may be disease resistant):
	'Adams'	4a	20'	round	buds deep pink, flowers deep pink, profuse; leaves green with a red tint; 5/8" persistent red fruit
	'Adirondack'	4	18'	vase	carmine buds to white flowers; bright red fruit 1/2" diameter, dark green leathery leaves
	'American Salute'	4	18'	upright oval	rose-red flower, cherry red 3/8" fruit; maroon-red foliage; 10' wide crown
	'American Spirit'	4	15-18'	round	red buds, rose-red flower, persistent red fruit; 15-18' wide crown; superior disease resistance
	'American Triumph'	4	20'	upright columnar	dark red single flower, dark burgundy-red fruit; reddish-purple leaves; 12' wide crown
	baccata 'Jackii'	3a	20'	round	flowers are white fragrant and early, fruit is deep red-purple; glossy green foliage
	'Cardinal'	4	16'	broad spread.	flowers bright pink-red purple, 1/2" sparse fruit deep dark red, leaves deep glossy purple-red
	'Centurion'	4	20'	narrow oval	flowers rose red, bright red persistent 5/8" diameter fruit, leaves reddish changing to green
	'Coralburst'	4	15'	round	coral pink buds, double rose flowers, bronze 1/2" diameter fruit; resistant to most diseases
	'Donald Wyman'	4	20'	round	pink buds, flowers white, abundant, 3/8" fruit glossy bright red, abundant
	'Doubloons'	4	18'	dense oval	carmine buds, flowers white, double fruit 3/8" bright lemon-yellow, abundant; deep green foliage
	'Firebird'	4	8'	round spreading	red buds, flowers white, fruit 3/8" bright red & very persistent, abundant; dwarf of 'Sargent'
	floribunda	4b	20'	round	flowers pink fading to white, profuse, 1-1 1/2" diameter, fruit yellow-red; disease resistance
	'Golden Raindrops'	4	20'	vase like	white buds & flowers; 1/4" diameter yellow fruit; fine textured, deeply cut foliage

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Common name	Scientific name	Zone	Mature Height**	Crown Shape	Comments
	'Harvest Gold'	4	22'	wide vase like	white buds & flowers; 1/2" diameter yellow fruit; fair scab & fire blight resistance
	'Liset'	4a	15'	columnar	flowers pink-red 1 1/2" diameter, fruit dark red, leaves reddish
	'Madonna'	4	20'	upright	pink bud to double white flower; fruit golden red; leaves emerge bronze to green; disease resistance
	'Ormiston Roy'	4a	20'	oval - round	pink-rose bud, white flower, yellow 3/8" diameter persistent fruit, green leaf
	'Pink Princess'	4	8'	low, spreading	rose pink flower, deep red 1/4" fruit; purple foliage becoming bronze-green; disease resistance
	'Prairifire'	4	20'	oval - round	crimson bud, pink-red flower, orange-red persistent 1/2" fruit, leaves age to red-green
	'Professor Sprenger'	4	20'	oval - round	pink bud, white fragrant flower, orange-red persistent 1/2" diameter fruit, green leaf
	'Purple Prince'	4	20'	round	carmine bud, rose red flower, persistent maroon 3/8" fruit, purple-bronze leaf
	'Red Jewel'	4	15'	oval	pink-white bud, white flower, persistent bright red 1/2" diameter fruit, green leaf
	'Robinson'	4	25'	oval	crimson bud, deep pink flower, dark glossy red 3/8" fruit, red aging to bronze leaf
	'Royal Raindrops'	4	20'	upright spread.	pink bud, bright pinkish flower; persistent red 1/4" fruit; purple cut-leaf, orange-red Fall color
	'Sentinel'	4	18'	narrow oval	red buds, white-pink flower, persistent bright red 1/2" fruit, dark green glossy leaf
	'Silverdrift'	4	20'	round	pink buds, white-pink flower, persistent orange 3/8" fruit, bright green glossy leaf
	'Snowdrift'	4	18'	narrow oval	red buds, white flower, small persistent red fruit; good disease resistance
	'Strawberry Parfait'	4	18'	vase	red buds, large pink flower, yellow 3/8" fruit, red aging to green leaf
	'Sugartyme'	4	18'	oval	pink bud, white fragrant flower, red persistent 1/2" diameter fruit, green leaf
	x zumi 'Calocarpa'	4a	20'	round	bright red, persistent 3/8" diameter, leaves large green, dense canopy
Hop Hornbeam	Ostrya virginiana	3b	30-50'	oval	pest free; slow growing; yellow Fall color; tolerates some shade; grayish-brown, exfoliating bark; use only where taller pole/wire sites; Northeast native
Persian Parrotia (CU-SS)	Parrotia persica	5	20'-30'	pyra.-round	relatively pest free; red-purple new foliage to green in Summer, yellow-red in Fall
Accolade Flowering Cherry	Prunus 'Accolade' (P. sargentii x P.subhirtella)	5a	20'-25'	round-vase	deep rose-pink bud, semi-double pink flowers, attractive bark; more disease resistant
Snow Goose Cherry	Prunus 'Snow Goose'	5	20'-25'	upright	white flowers, foliage green aging to yellow-red in Fall; 1/4" blue-black fruit; good disease resistance
Edgewood Callery Pear (CU-SS)	P. calleryana x P. betulaefolia 'Edgedell'	4	30'	round	leaves emerge with purple tint, silvery green through Summer, red-purple in Fall
Jack Callery Pear (CU-SS)	Pyros calleryana 'Jaczam'	4	15'-20'	oval; dense	glossy green to gold-red leaves in Fall; 1/2" yellow-green fruit
Jill Callery Pear (CU-SS)	Pyrus calleryana 'Jilzam'	4	15'-20'	round	olive green to gold leaves in Fall; 1/2" yellow-green fruit
Valiant Callery Pear (CU-SS)	Pyrus calleryana 'Valzam'	4	25'-30'	upright-pyram.	glossy hunter green to crimson red leaves in Fall; 1/4" tan fruit
Black Locust (CU-SS)	Robinia pseudacacia 'Globe'	4b	20'	round; dense	late Spring flowering (possibly flowerless); spineless; medium to blue-green leaves
	'Bessoniana'	4b	30'	oval	late Spring flowering; essentially spineless; medium to blue-green leaves; central leader
	'Umbraculifera'	4b	20'	umbrella-like	dwarf form; few-no thorns, sparsely flowered; prone to borers & ice damages
Swedish Mountain Ash (CU-SS)	Sorbus intermedia	5b-6a	25-35'	round	green upper leaf/grayish white undersides; orange-red Fall color
Columnar Oakleaf Mountain Ash (CU-SS)	Sorbus thuringiaca	3b	25-35'	oval-pyram.	dark green upper leaf/whitish undersides; rusty orange-yellow Fall color
	'Fastigiata'	3b	25-35'	narrow pyram.	more narrow pyramidal crown form
Japanese Tree Lilac (CU-SS)	Syringia reticulata	3a	20'-25'	oval	large cream colored flowers in late June; good for use in large containers

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Common name	Scientific name	Zone	Mature Height**	Crown Shape	Comments
	'Ivory Silk'	3a	25'	round	dense; compact; heavy flowering; fast growing; cherry-like bark
	'Regent'	3a	20'-25'	upright	glossy leaves; heavy pure white flower producer
	'Snowcap'	3a	15-20'	rounded	compact for; heavy creamy-white flowers
	'Snowdance'	3a	25'+	upright	very dark, glossy leaves; blooms earlier than species; no seed head production
	'Summer Snow'	3a	16'	round	glossy leaves; heavy flowering
Summer Sprite Littleleaf Linden (CU-SS)	<i>Tilia cordata</i> 'Halka'	4	15'-20'	narrow pyram.	may grow slower than the species; fragrant, mid-Summer flowers (attracts bees!)
Wireless Japanese Zelkova (CU-SS)	<i>Zelkova serrata</i> 'Schmidtlow'	5	35'	broad vase	exfoliating bark; less likely than species to have poor branch structure; Elm-like appearance
	'City Sprite'	5	20'	upright	as above, smaller in form; red Fall foliage

* Trees over 30' in mature height should be planted at least 25' away from the edge of overhead wires; trees that mature over 25' and planted directly underneath electric conductors may require minor pruning in the future to avoid wire conflicts to maintain required clearances

(CU-SS = Trees suitable for planting in Cornell University Structural Soil mix)

Tree list summarized from RECOMMENDED URBAN TREES: SITE ASSESSMENT AND TREE SELECTION FOR STRESS TOLERANCE; 2015 (revised)
 Urban Horticulture Institute, Dr. Nina Bassuk, Deanna Curtis, B.Z. Marranca & Barb Neal; Cornell University, 134-A Plant Science Bldg., Ithaca, NY 14853
 nlb2@cornell.edu; urbanhort@cornell.edu

For more information and pictures of these trees, please go to the Cornell Woody Plant Database at: <http://woodyplants.cals.cornell.edu>

For more information, call our Distribution Forestry Department
at **315-428-5987**, or visit **www.nationalgridus.com**.