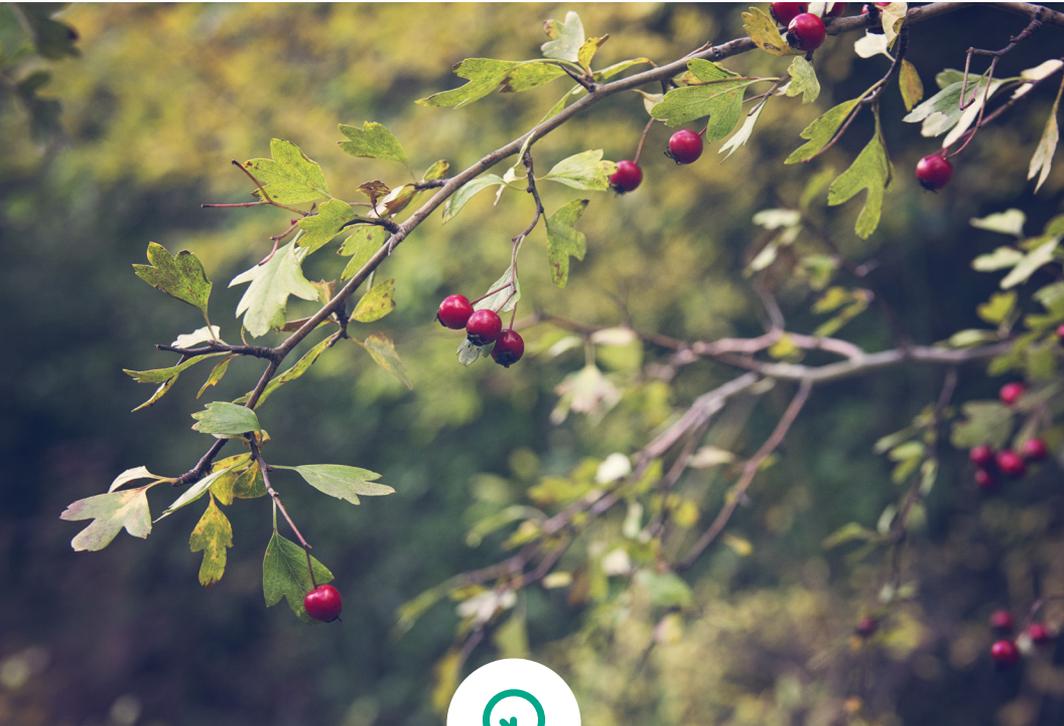


Tree Maintenance Guide

Selection, planting, and pruning tips
for your yard and property



Right Tree, Right Place

Planting the right trees in the right place can help you save energy, reducing the need for air conditioning in the summer and blocking cold wind in the winter.

Fallen trees and branches are among the leading causes of power outages. However, with proper landscape planning, you can enjoy all the benefits of trees along with safe, reliable electric service.

Where you plant is as important as what you plant to make sure a tree thrives and enhances your environment when it's fully grown. Choose shrubs and trees that will look beautiful in 10 or 20 years, rather than the day you put them in the ground.

Aesthetics aren't the only consideration. The wrong tree in the wrong place could interfere with power lines, damage your roof or siding, and clog gutters with leaves. When fully grown, will the tree obscure road signs or traffic signals? Are there local ordinances controlling what and where you plant?

Learn to choose shrubs and trees that will enhance your property for years to come, while avoiding potential electric service problems for you and your neighborhood.

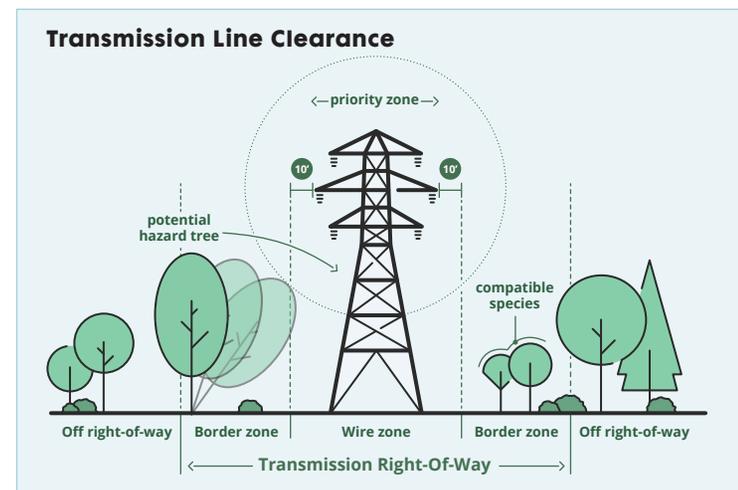
Trees and Power Lines

To avoid interference with power lines, it's important to maintain safe clearance between trees and distribution lines on the street and the service line from the street to your home. If branches rub against power lines, they can wear away the protective coating and cause power problems. Branches that touch power lines may also become electrified and hazardous to anyone climbing the tree. In rainy or icy weather, trunks and limbs can become electrified because water conducts electricity. High winds, thunderstorms and snow or ice storms can cause branches to break and cause power outages.

Near distribution lines—the power lines between poles along streets—you should only plant medium- and low-height trees and place them at least 15 feet away from power lines. Trees that grow to more than 40 feet high should be at least 40 feet away from power lines.

Strict regulations control vegetation in the right-of-way around transmission lines (larger, taller poles and steel lattice towers). Vegetation growing in these areas must not grow taller than 20 feet (in New Jersey, the limit is 15 feet).

See pages 13 to 17 for a list of trees that won't interfere with power lines.





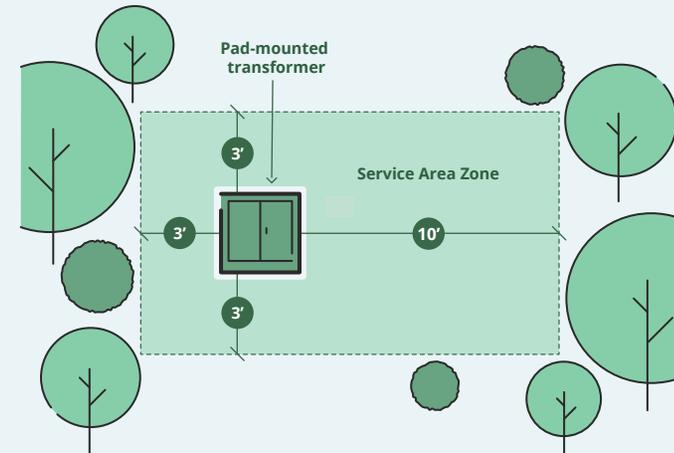
Safety Tips for trees near power lines

- Maintain a good distance from overhead lines when using a ladder.
- Stay away from trees with overhead lines running through them.
- Never touch a tree that's in contact with a power line.
- Don't climb, play in, or build treehouses in trees near overhead power lines.
- If a kite gets tangled in power lines or in a tree branch near a power line, leave it. It's not worth the risk of injury.



Have You Seen These Green Metal Boxes?

Pad-mounted transformer clearance guidelines



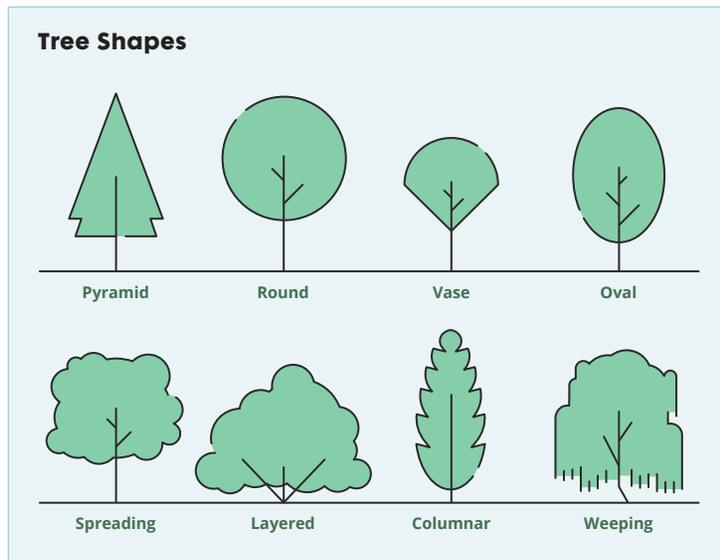
Pad-mounted transformers are important equipment for underground electric service. It's crucial that our crews have unobstructed access to this equipment at all times, so we can perform maintenance or restore service. Any shrubs, trees or structures must be at least 10 feet away from the front opening of a pad-mounted transformer and three feet from the sides and back. We are not responsible for replacing or restoring any landscaping that hinders access to our equipment.

Do not change the ground level around pad-mounted transformers. Pad-mounted transformers are connected to high-voltage underground wires. If you or a contractor dig in the wrong spot, you run the risk of a serious accident or injury.

Choose the best species for your needs

Size: How big will the tree be at maturity? Keep in mind circumference and the spread of its branches, as well as its maximum height.

Shape: In addition to how it will look in your landscape, consider how the shape of the tree will contribute to its overall size when it's fully grown.



Suitability: Make sure any species you are considering is right for our general climate (most of our service area is Hardiness Zone 6, but check with your nursery), and for the soil on your land. Also, be sure the spot you choose provides the right amount of sun. Will the tree be strong enough to bear snow and ice without breaking? Is its root system shallow or deep?

Maintenance: Will the tree require spraying? Will you need to rake leaves or clean up fallen fruit and seeds? Is the species susceptible to disease or insects?

Choose a healthy tree

Shop at a reputable nursery. Ask friends or neighbors for recommendations, and always look for a guarantee from the nursery. Then follow these tips for selecting a healthy specimen:

- 1 Look for good proportions.
- 2 Don't choose a tree that has roots that are crowded, crushed or growing outside the container.
- 3 Select a tree with a well-developed, straight trunk that is free from damage or broken branches.
- 4 Avoid pale or yellowing foliage.
- 5 Check for signs of disease or insects.

Call Before You Dig

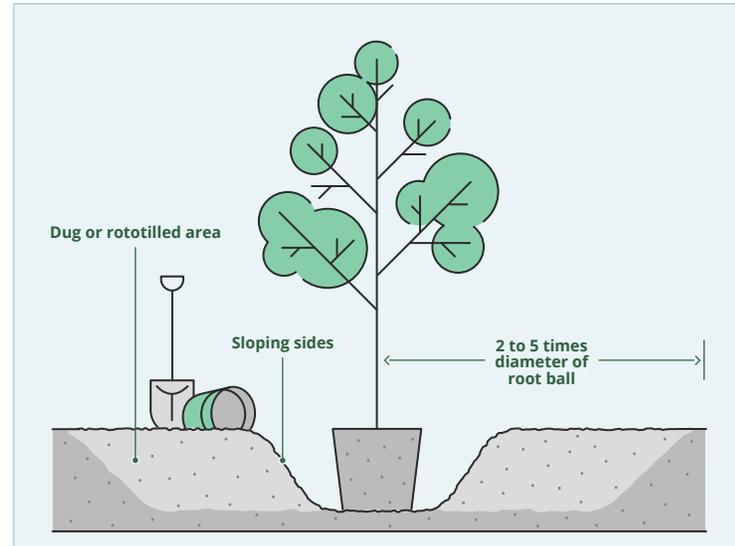
Call 811 at least two to 10 days before you dig so utilities can mark the location of underground facilities for you for no charge.

Just as important as what's above your tree is what's below it. Before you plant, make sure you're clear of all underground utility lines running through your property. If your shovel, tiller, or backhoe strikes an underground electric cable or a natural gas pipeline, you run the risk of serious injury, or costly property damage.

Planting Tips

The best time to plant most trees is early to mid-spring and early to mid-fall. Temperatures are generally moderate, so there is less chance for extreme heat or cold to stress newly planted trees. Also, spring and fall rain helps new trees establish their root systems. Planted correctly, a tree will grow twice as fast and live twice as long as a tree planted incorrectly. Make sure the nursery gives you proper planting instructions for your new tree, and follow these tips:

- Always pick up the tree by the root ball or container, never by the stem or trunk.
- Till the soil to encourage root growth and a healthier tree.
- Brace the tree only if it will not remain upright in a moderate wind.
- If you need to stake or brace the tree, don't do it too tightly. The tree should be able to sway gently to develop "trunk taper," which is important to grow a strong tree.
- Use brace materials that will not injure the bark. Purchase bracing material from the nursery, or use wire covered with hose. Remove bracing after a year.
- Remove dead and dying branches from the tree.
- Wait until the second growing season to fertilize and shape the tree.
- Remove any tags from the trunk or branches.



About Roots

Plan for adequate rooting space, especially near paved areas. Tree roots can crack your driveway or the sidewalk, which is expensive to repair and a hazard to pedestrians.

Knowing where roots will grow can help you choose the best spot for your tree.

- Roots need oxygen, so they don't grow well in the compacted soil under paved areas.
- Roots grow out to a diameter of one to two times the height of the tree.
- 85% of a tree's roots grow only 8 to 24 inches below the surface.

Caring for Young Trees

With the right care at the beginning, a young tree will develop and grow to enhance your property.

Watering

- Young trees require watering until their roots are able to tap available ground water (about one year).
- Water deeply and slowly.
- Make every effort to water trees during periods of draught.

Mulching

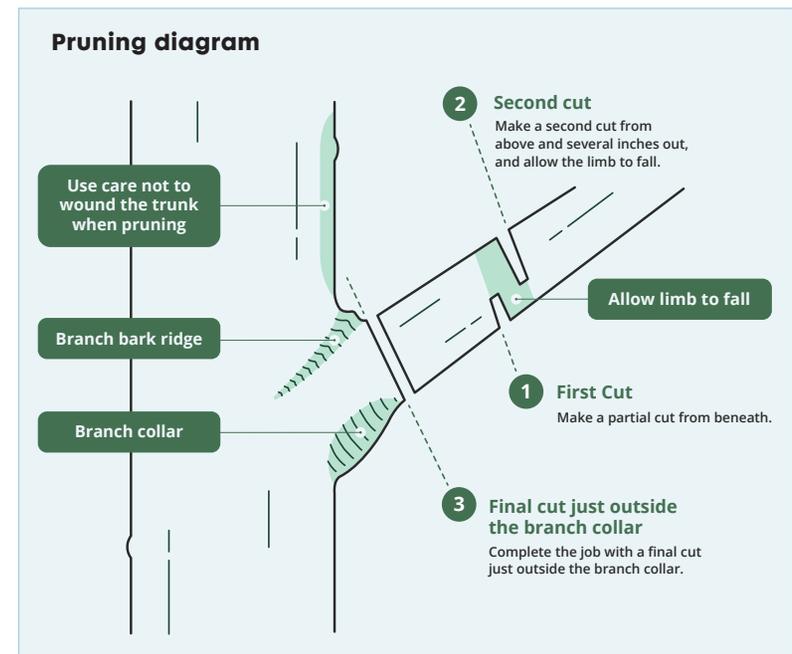
- Insulates soil and raises temperature of soil around the tree
- Retains moisture
- Keeps out weeds
- Prevents soil compaction
- Prevents damage from mower and string-trimmer
- Gives a neat appearance

Proper Pruning

- Ensures tree health
- Reduces chance of falling branches
- Maintains visibility – limbs don't move up as a tree grows

Doing your own pruning?

The best time to prune is in late winter, after the coldest part of the season, but while trees are still dormant. To prune properly, you need to be able to identify the branch bark ridge and the branch collar to ensure you make a healthy cut. It's important to avoid damaging the branch collar. This allows the tree to heal from the cut and helps prevent decay.



Branch bark ridge: The line of raised bark between the limb and the parent stem.

Branch collar: The “swollen” area just outside the branch bark ridge, which is part of the tree trunk or parent limb.

Planting Tips

Avoid these mistakes:

- Don't "top" trees. Pruning the large upright branches of a tree can result in decay and ugly, weakly attached branches that will grow taller than the original branches.
- Avoid cutting lateral branches to reduce crown width. Like topping, it leads to unsightly sprouting and can cause death to some of the cut branches.
- Never remove more than a third of a tree's crown.
- Improper cutting—cutting through the branch collar, ripping branches away can lead to decay and prevent proper healing of cuts.
- Don't apply tree paint to pruning cuts. It doesn't prevent decay or promote faster closure.

Why Hire an Arborist?

Arborists are trained to make proper, healthy cuts on trees; they know the proper techniques for cabling; can spray or inject trees to control disease, and are also trained to safely operate pulleys, chain saws and bucket trucks to safely prune or remove trees.

You should always hire an arborist if you need a tree removed, and any time pruning requires climbing or using a chain saw. It's also smart to call an arborist before you buy a new home that has a lot of trees. They can inspect for disease, and offer a risk assessment of possible dangerous trees that could fall and cause property damage or power outages.



Red Flowering Dogwood
Low-height trees



Golden Rain Tree
Medium-Height Trees



Dawn Redwood
Tall Trees



Mountain Laurel
Transmission Line Compatible Trees



Royal Purple Smoke Tree
Transmission Line Compatible Shrubs

Compatible Species List

Compatible Species List

Low-Height Trees

These species grow less than 25 feet tall. Plant at least 15 feet from power lines.

Shantung Maple	<i>Acer truncatum</i>	20' – 25'
Amur Maple	<i>Acer ginnala</i>	20' – 25'
Tatanan Maple	<i>Acer tatanicum</i>	18' – 20'
Globe Norway Maple	<i>Acer platanoides 'Globosum'</i>	20' – 25'
Japanese Maple	<i>Acer palmatum</i>	15' – 20'
White Fringe Tree	<i>Chionanthus virginicus</i>	20' – 25'
Red Flowering Dogwood	<i>Cornus rubra</i>	15' – 25'
White Flowering Dogwood	<i>Cornus florida</i>	15' – 25'
Kousa Dogwood	<i>Cornus kousa</i>	15' – 18'
Cornelian Cherry Dogwood	<i>Cornus mas</i>	18' – 20'
Lavalle Hawthorn	<i>Crataegus lavallei</i>	15' – 25'
Thornless Cockspur Hawthorn	<i>Crataegus crus-galli inermis</i>	18' – 20'
Crimson Cloud English Hawthorn	<i>Crataegus laevigata 'Superba'</i>	15' – 20'
Ohio Pioneer Dotted Hawthorn	<i>Crataegus punctata 'Ohio Pioneer'</i>	20' – 25'
Eastern Redbud	<i>Cercis canadensis</i>	20' – 25'
Upright Siberian Crabapple	<i>Malus baccata f. Columnaris</i>	20' – 25'
Jackii Siberian Crabapple	<i>Malus baccata var. jackii</i>	20' – 25'
Rose Sargent's Crabapple	<i>Malus sargentii 'Rosea'</i>	10' – 15'
Snowdrift Crabapple	<i>Malus 'snowdrift'</i>	20' – 25'
Trinity Flowering Pear	<i>Pyrus calleryana 'Trinity'</i>	15' – 20'
Kwanzan Cherry	<i>Prunus serrulata 'Kwanzan'</i>	15' – 25'
Purple Leaf Flowering Plum	<i>Prunus cerasifera</i>	15' – 25'
Japanese Tree Lilac	<i>Syringa amurensis japonica</i>	20' – 25'

Medium-Height Trees

These species grow up to 40 feet tall. Plant at least 25 feet away from power lines.

Hedge Maple	<i>Acer campestre</i>	20' – 30'
Crimson Sentry Maple	<i>Acer platanoides 'Crimson Sentry'</i>	30' – 40'
Armstrong Red Maple	<i>Acer rubrum 'Armstrong'</i>	35' – 40'
Goldenspire Sugar Maple	<i>Acer saccharum 'Goldenspire'</i>	35' – 40'
Downy Shadblow	<i>Amelanchier canadensis</i>	30' – 35'
Apple Serviceberry	<i>Amelanchier X grandiflora</i>	25' – 35'
Allegheny Serviceberry	<i>Amelanchier laevis</i>	25' – 35'
Pyramidal American Hornbeam	<i>Carpinus caroliniana 'Pyramidalis'</i>	20' – 40'
European Hornbeam	<i>Carpinus betulus 'Fastigiata'</i>	30' – 40'
American Hornbeam	<i>Carpinus caroliniana</i>	30' – 40'
Golden Rain Tree	<i>Koelreuteria paniculata</i>	30' – 40'
Sweetbay Magnolia	<i>Magnolia virginiana</i>	35' – 40'
American Hophornbeam	<i>Ostrya virginiana</i>	25' – 40'
Amur Corktree	<i>Phellodendron amurense</i>	30' – 40'
Autumn Blaze Callery Pear	<i>Pyrus calleryana 'Autumn Blaze'</i>	35' – 40'
Chanticleer Callery Pear	<i>Pyrus calleryana 'Chanticleer'</i>	35' – 40'
Redspire Callery Pear	<i>Pyrus calleryana 'Redspire'</i>	30' – 40'
Spring Snow Crabapple	<i>Malus 'Spring Snow'</i>	25' – 35'
European mountain Ash	<i>Sorbus aucuparia</i>	25' – 35'
Washington Hawthorn	<i>Crataegus phaenopyrum</i>	25' – 35'
Imperial Honey Locust	<i>Gleditsia triacanthos 'Impcole'</i>	30' – 40'
Columnar Sargent Cherry	<i>Prunus sargentii 'Columnaris'</i>	30' – 40'
Greenspire Little-leaf Linden	<i>Tilia cordata 'Greenspire'</i>	35' – 40'

Tall Trees

These species grow to 40 feet or higher. Plant at least 40 feet away from power lines.

Crimson King Norway Maple	<i>Acer platanoides</i> 'Crimson King'	35' – 40'
Parkway Norway Maple	<i>Acer platanoides</i> 'Columnarbroad'	40' – 50'
Autumn Flame Red Maple	<i>Acer rubrum</i> 'Autumn Flame'	50' – 75'
Green Mountain Sugar Maple	<i>Acer saccharum</i> 'PNI 0285'	50' – 75'
Heritage River Birch	<i>Betula nigra</i> 'Heritage'	40' – 50'
Katsura Tree	<i>Cercidiphyllum japonicum</i>	40' – 60'
Copper Beech	<i>Fagus sylvatica</i>	50' – 80'
Princeton Sentry Ginkgo	<i>Ginkgo biloba</i> 'PNI 2720'	50' – 80'
Shademaster Honey Locust	<i>Gleditsia triacanthos</i> 'PNI 2835'	60' – 70'
Thornless Honeylocust	<i>Gleditsia triacanthos var. Inermis</i>	30' – 60'
European Larch	<i>Larix decidua</i>	30' – 60'
Dawn Redwood	<i>Metasequoia glyptostroboides</i>	65' – 85'
Black Tupel	<i>Nyssa sylvatica</i>	40' – 70'
Pin Oak	<i>Quercus palustris</i>	55' – 70'
Baldcypress	<i>Taxodium distichum</i>	60' – 80'
Legend American Linden	<i>Tilia americana</i> 'Village Green'	50' – 60'
Village Green Japanese Zelkova	<i>Zelkova serrata</i> 'Village Green'	50' – 60'

Transmission Line Compatible Trees

Strict regulation controls the vegetation in the transmission line right of way.* These species grow less than 20 feet tall.**

Flowering Almond	<i>Prunus triloba</i>	6' – 10'
Star Magnolia	<i>Magnolia stellata</i>	10' – 20'
Hopa Crabapple	<i>Malus</i> 'Hopa'	12' – 18'
Mary Potter Crabapple	<i>Malus</i> 'Mary Potter'	10' – 15'
Kousa Dogwood	<i>Cornus kousa</i>	16' – 18'
Dwarf Norway Spruce	<i>Picea abies</i> 'Compacta'	8' – 12'
Dwarf Globe Blue Spruce	<i>Picea pungens</i> 'R.H. Montgomery'	10' – 15'
Mountain Laurel	<i>Kalmia latifolia</i>	5' – 6'
Winterberry	<i>Ilex verticillata</i>	6' – 8'
Redosier Dogwood	<i>Cornus sericea</i>	7' – 9'
Nanking Cherry	<i>Prunus triloba</i>	6' – 10'
Arrowwood	<i>Viburnum dentatum</i>	6' – 10'

* Situational and topographical conditions may rule out selected species in some locations. Ask us about planting limitations at your site.

** In New Jersey, the New Jersey Board of Public Utilities prohibits any species growing over three feet tall in the area directly under the conductors along a transmission line right-of-way. It also prohibits any species growing to more than 15 feet in the area from the conductors to the edge of the right-of-way along transmission lines.

Transmission Line Compatible Shrubs

Strict regulation controls the vegetation in the transmission line right of way.* These species grow less than 20 feet tall.**

Japanese Flowering Quince	<i>Chaenomeles speciosa</i>	8' – 10'
Siberian Pea Shrub	<i>Caragana arborescens</i>	10' – 15'
Gray Dogwood	<i>Cornus racemosa</i>	8' – 10'
Royal Purple Smoke Tree	<i>Cotinus coggygria</i> 'Royal Purple'	10' – 15'
Forsythia	<i>Forsythia X intermedia</i>	8' – 10'
Siberian Arborvitae	<i>Thuja occidentalis</i> 'Wareana'	12' – 18'
Hatfield Yew	<i>Taxus X media</i> 'Hatfieldii'	6' – 12'
Upright Japanese Yew	<i>Taxus cuspidata</i> 'Capitata'	10' – 12'
Blue Hollies	<i>Ilex X meserveae</i> 'Prince/Princess'	10' – 15'
Chinese Witch Hazel	<i>Hamamelis mollis</i>	10' – 15'
Rhododendron	<i>Rhododendron</i> (various species)	10' – 20'

* Situational and topographical conditions may rule out selected species in some locations. Ask us about planting limitations at your site.

** In New Jersey, the New Jersey Board of Public Utilities prohibits any species growing over three feet tall in the area directly under the conductors along a transmission line right-of-way. It also prohibits any species growing to more than 15 feet in the area from the conductors to the edge of the right-of-way along transmission lines.

Vegetation Management Legal Requirements

When planning any planting near transmission line right-of-ways in New York, please be aware that the New York State Public Service Commission Order 04-E-0822 directs all New York transmission operators to remove to ground level all undesirable (noncompatible) vegetation rooted within the transmission line right-of-ways, including noncompatible vegetation buffers. Undesirable species are those species whose mature height will encroach into the wire security zone.

When planning any planting near transmission line right-of-ways in New Jersey, please be aware that the New Jersey Board of Public Utilities Vegetation Management Standard 14:5-8 directs New Jersey utilities under 14:5-8.6 that a public utility shall not allow any vegetation that grows taller than 15 feet at maturity to grow anywhere within a transmission line right-of-way. It also directs that public utilities shall not allow woody plants that naturally mature above three feet to grow in the area of the right of way directly below the transmission conductors (the "wire zone").





Resources

conEd.com/TreeTrimming

Arbor Day Foundation
arborday.org

International Society of Arboriculture
isa-arbor.com

New York State Public Service Commission
dps.ny.gov

U.S. Federal Energy Regulatory Commission
ferc.gov

North American Electric Reliability Corporation
nerc.com

