

Lines, limbs and landscape



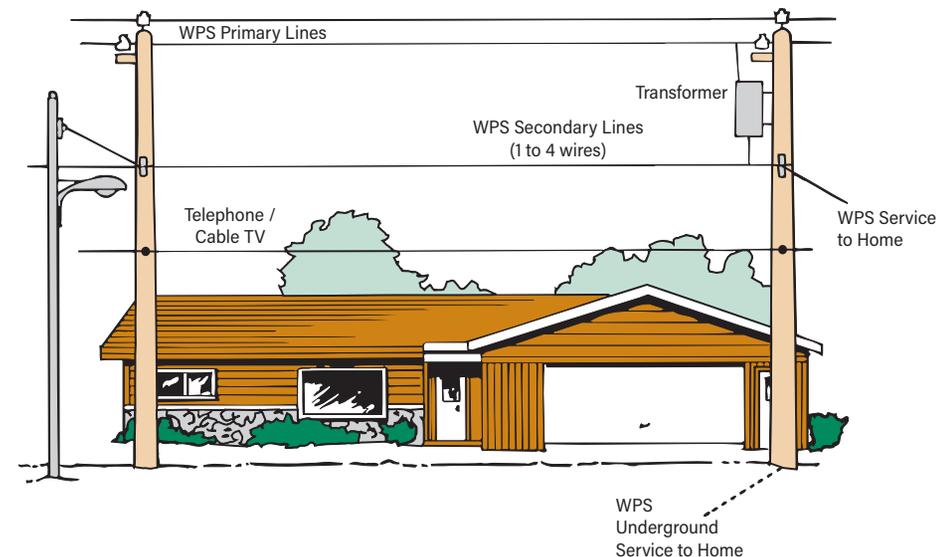
LINES AND LIMBS

Introduction

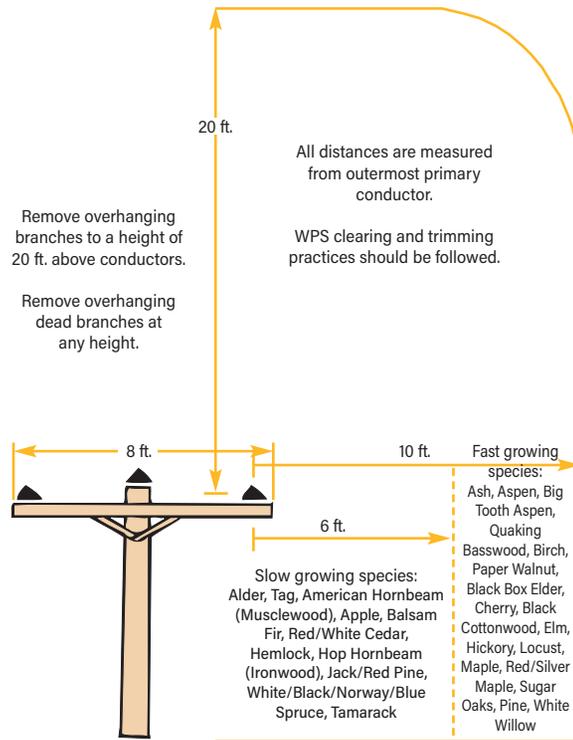
You, your neighbors, hospitals and businesses – your entire community – depend on safe, reliable electric service. Safe and reliable electric service is threatened, in part, by trees growing into electric lines. When electric lines come in contact with trees, problems can occur, such as power outages, fire hazards and safety hazards. Trees cause about 30 percent of all electric service interruptions on Wisconsin Public Service's 18,000-mile distribution system. We spend approximately \$6 million each year for line clearance crews to trim or remove trees to prevent these interruptions.

Electric utility poles carry electric lines of various voltages and other lines of various purposes, such as phone and cable communications. (See diagram below.)

On top are one to three primary electric lines that carry 4,000 to 25,000 volts. **These lines are not insulated.** Below the primary lines, there may be one to four secondary lines, each carrying up to 600 volts. The electric line attached to your house is called the "service wire" that carries 240 volts. Other lines attached to these poles are phone and cable wires. **All overhead and underground wires to your home or business should be viewed as dangerous and life-threatening if touched.**



Primary clearing requirements



On average, we trim trees near power lines on a regular trim cycle that varies from three to six years, depending on tree species and re-growth rates. The line clearance work is done for us by companies with specialized equipment and trained personnel. Contractors must follow our clearance requirements to ensure trees or branches do not interfere with electric service before the next trim cycle. (See diagram above.)

We use a method of natural or directional pruning, which is established by the National Arborist Association and recommended by professional foresters as the best method for maintaining tree health. We direct line clearance contract crews to use natural trimming techniques to prune trees. We also instruct the line clearance crews to remove trees that have fast-growing sprouts and weak wood, because they pose safety and reliability problems.

Poplar, elm, willow, box elder and silver maple are typical examples of this type of tree. Other trees that are diseased or structurally weakened can be a hazard to the electric line and should be removed.

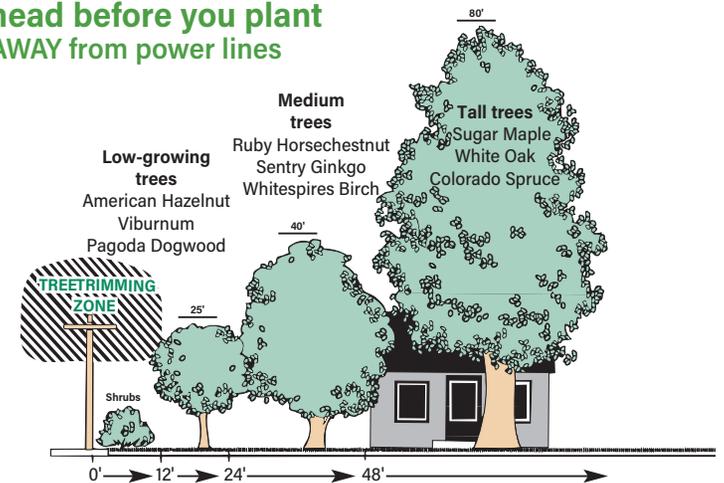
Our line clearance contract crews will explain to you any planned trimming on your property.

LINES AND LANDSCAPING

Shrubs and trees, deciduous or evergreens, enhance a home's appearance and provide shade in summer and protection from winter wind. Properly designed landscaping not only improves your home's appearance and performance but also contributes to better electric service reliability and safety.

Successful landscape design starts with good planning. The graphic below shows how an overhead electric line should be accommodated in the design to ensure long-lasting beauty of trees on your property.

Think ahead before you plant Plant AWAY from power lines



Use this booklet to help develop your landscape plan or to change your current landscape. Always remember to use smaller plants near overhead lines to avoid future interference.

Plants in the Power-Line-Friendly Trees section of this booklet are hardy choices that work well throughout our region. Some plants prefer certain locations in the landscape and certain soil types. For more information and recommendations, consult your local library, city forester, county horticulturist or local nursery specialist.

Call us before you cut down any trees or tree limbs near electric lines. Touching a tree limb in contact with an electric line is extremely hazardous and life-threatening. We will assist you in whatever way we can to see that the job is done safely.

UNDERGROUND LINES AFFECT LANDSCAPING

Underground electric lines, though unseen, require space of their own. Planting of shrubs and trees over underground lines is not recommended because of future maintenance that may be required on these lines. An 8-foot-wide strip centered directly over an underground line is sufficient space for future maintenance needs. Additionally, transformers located on the ground (which step down high electric voltage to a voltage usable by your household) require an area of 8 feet in the front (the side marked with the DANGER HIGH VOLTAGE sign) to be free of vines, shrubs and trees for future maintenance needs.

Uncovering or damaging a buried electric, phone, cable or natural gas line can be a life-threatening situation. Before you start any digging project, including tree or shrub planting, always call 811 at least three working days before digging.

POWER-LINE-FRIENDLY TREES

Shrubs (4' - 10' in height) 0' - 12' distance from line

COMMON NAME	HEIGHT	FORM
Ames Juniper	10'	Pyramidal
Arrowwood Viburnum	10'	Vase
Black Chokeberry	5'	Suckers
Common Witchhazel	10'	Spreading
Cream Edge Dogwood	10'	Mounded
Dwarf Bush Honeysuckle	5'	Mounded
Dwarf Common Ninebark	9'	Rounded
Dwarf Japanese Yew "Taunton"	4'	Rounded
Early Forsythia	10'	Mounded
Fragrant Sumac	8'	Mounded
Japanese Barberry	6'	Mounded
Mint Julep Juniper	4'	Spreading
Red Chokeberry	10'	Erect
Red Osier Dogwood	9'	Spreading

* UW-Extension publication, "A Guide to Selecting Landscape Plants for Wisconsin," also is suggested for use when selecting shrubs or trees. The publication gives a more thorough description of each plant.



**Shrubs and small trees (6' - 20' in height)
12' - 24' distance from line**

COMMON NAME

SHRUBS	HEIGHT	FORM
American Hazelnut	12'	Rounded
Blackhaw Viburnum	15'	Spreading
Eur. Cranberrybush Viburnum	12'	Upright
European Euonymus	25'	Upright
Gray Dogwood	15'	Erect
Many-flowered Cotonester	12'	Mounded
Nannyberry Viburnum	15'	Upright
Pagoda Dogwood	20'	Spreading

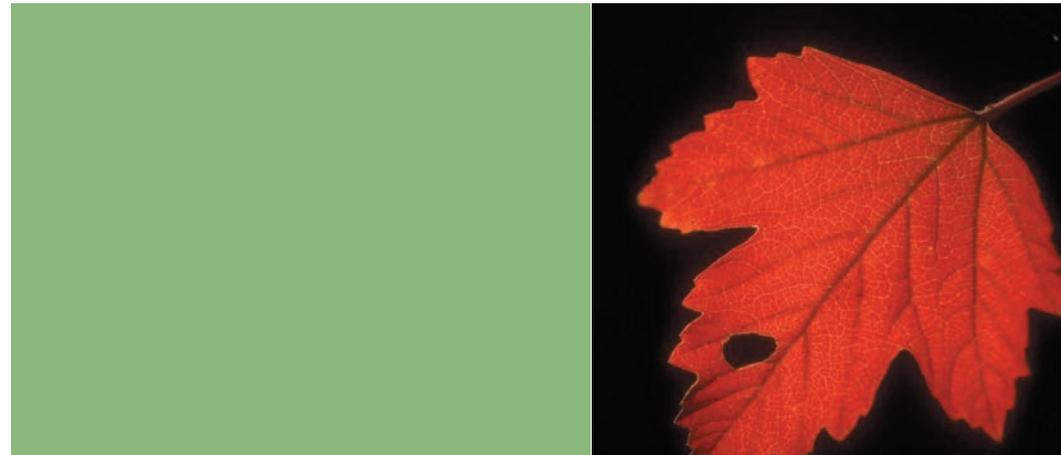
TREES

TREES	HEIGHT	FORM
American Hornbeam	15' - 18'	Spreading
Amur Maalikia	12' - 20'	Round
Amur Maple	15' - 18'	Round
Cockspur Hawthorn	15' - 18'	Spreading
Dogwood	06' - 15'	Round
Eastern Redbud	12' - 18'	Spreading
Flowering Crabapples	15' - 20'	Several
Freedom Honeysuckle	08' - 10'	Spreading
Japanese Tree Lilac	15' - 20'	Upright
Juniper	15' - 20'	Pyramidal
Magnolia	08' - 12'	Pyramidal
Mugo Pine	12' - 15'	Round
Plum, Princess Kay	10' - 12'	Oval
Russian Olive	15' - 20'	Spreading
Siberian Peashrub	10' - 15'	Round
Japanese Maple	15' - 20'	Round

**Medium trees (20' - 45' in height)
24' - 48' distance from line**

COMMON NAME

COMMON NAME	HEIGHT	FORM
3-Flowered Maple	25' - 30'	Upright
American Arborvitae	20' - 30'	Pyramidal
Amur Chokecherry	20' - 30'	Round
Callery Pear	25' - 45'	Pyramidal
Hophornbeam	30' - 35'	Pyramidal
Laurel Willow	20' - 40'	Round
Ohio Buckeye	20' - 40'	Round
Sargent Cherry	20' - 40'	Spreading
Serviceberry	20' - 25'	Spreading
Swiss Stone Pine	25' - 35'	Pyramidal
Ussurian Pear	25' - 35'	Spreading
Washington Hawthorn	20' - 30'	Upright
Yellowwood	25' - 40'	Round



Large trees (30' - 70' in height) Greater than 48' from line

COMMON NAME	HEIGHT	FORM
American Beech	40' - 60'	Oval
Ashes	30' - 70'	Round
Austrian Pine	40' - 60'	Vertical
Birch	40' - 70'	Pyramidal
Blue Spruce	30' - 60'	Pyramidal
Canada Hemlock	40' - 60'	Pyramidal
Corktree	30' - 50'	Round
Ginkgo	40' - 60'	Columnar
Hackberry	40' - 60'	Vase
Honeylocust	40' - 60'	Upright
Kentucky Coffeetree	50' - 70'	Upright
Larch	40' - 70'	Pyramidal
Littleleaf Linden	35' - 50'	Pyramidal
Norway Maple	40' - 60'	Columnar
Oaks	50' - 70'	Round
River Birch	30' - 60'	Vase
Sugar Maple	40' - 70'	Round
White Fir	30' - 50'	Pyramidal

NOTE: For information about shrub/tree species not listed, contact your local nursery.

Tips on planting

Your local nursery is an excellent resource for obtaining planting materials and, if requested, will plant the shrub/tree it supplies. If you choose to plant your own, the following tips should be helpful:

1. **Protect your plants before planting.** Take care not to injure tree branches and stems when moving. If the tree is balled in burlap, gently pick it up by the ball to avoid injuring fine roots. Keep all roots covered, moist and out of direct sunlight.
2. **Prepare a planting site.** The planting site/hole should be three times as wide as the root spread or ball diameter. Plant the tree at the same depth it was at the nursery, which would have the tree's root collar at grade.

3. **Fertilization.** Only fertilize in the planting hole if you use very slow release micropore packets. Follow-up fertilization only should be done lightly, broadcast, low in nitrogen and after the first growing season.
4. **Mulch.** Maintain a 2-4 inch layer over entire planting site for first several growing seasons and indefinitely, if possible.
5. **Pruning.** Only prune at planting time if you need to remove damaged branches causing serious structural problems.
6. **Staking.** Avoid staking if you can. If you must stake, use flexible bindings and wide straps around the trunk. Remove after one growing season.
7. **Water.** Water well at planting time to eliminate air pockets in the soil. In the first growing season, keep the soil moist but not saturated.





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