

Lines, Limbs & The Landscape



SECTION 1 - LINES & LIMBS

Introduction

Upper Peninsula Power Company knows that you, your neighbors, hospitals, businesses — your entire community — depend on safe, reliable electric service. That's why it's so important that trees and electric lines stay clear of each other. When electric lines come in contact with trees, problems can occur, such as power outages, fires and other safety hazards. Trees cause about 30% of all electric service interruptions on UPPCO's distribution system, which consists of approximately 3,500 miles of primary and secondary distribution lines and approximately 854 miles of service lines. Beginning in 2014, Upper Peninsula Power Company will be spending at least \$3.2 million on line clearance each year to increase service reliability for its customers. Between 2014 and 2017, UPPCO will be clearing at least 1,760 miles of lines.

Electric utility poles carry several lines with differing voltages and purposes (e.g., electric, phone and cable television). (See Figure 1)

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 carrying up to 600 volts. The electric line attached to your house is called the "service wire" and carries 240 volts. Other lines attached to these poles are telephone and cable television wires. **All overhead and underground wires to your home or business should be viewed as dangerous and life threatening if touched.**

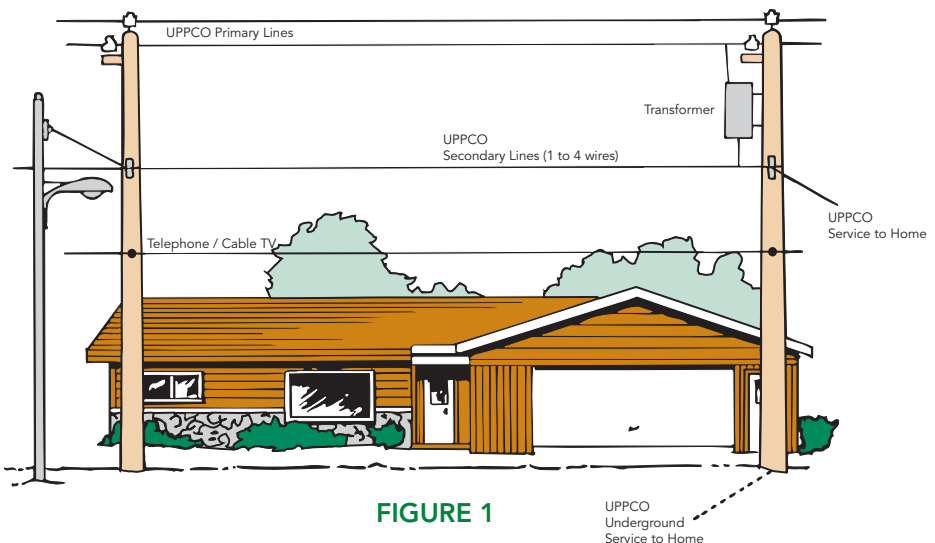


FIGURE 1

UPPCO
Underground
Service to Home

Primary Clearing Requirements

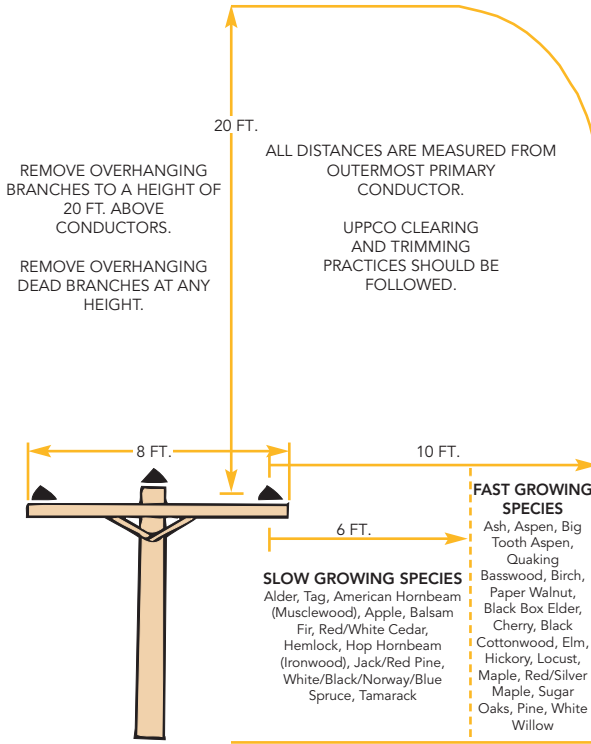


FIGURE 2

UPPCO trims trees away from power lines on a regular schedule, called a “trim cycle,” every six years. The line clearance work is done for UPPCO by companies with specialized equipment and trained personnel. There are clearance requirements that these contractors must follow to ensure that trees or tree branch growth don’t interfere with electric service prior to the next trimming cycle. (See Figure 2)

UPPCO uses 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 risks.

Poplar, elm, willow, box elder and silver maple are common 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.

The line clearance contract crews employed by UPPCO will contact you to explain planned trimming on your property. We appreciate your cooperation.

SECTION 2 - LINES & LANDSCAPING

Shrubs and trees, both deciduous and evergreens, enhance the overall appearance of a home and provide shade in the summer and protection from the icy winds of winter. A properly designed landscape offers many benefits beyond enhancing the appearance of your property; safe and reliable electric service is one of them.

A successful landscape design starts with careful thought. Figure 3 shows how an overhead electric line should fit in with the design plan by providing the proper separation of trees from overhead electric lines. Planning ahead will help ensure long-lasting beauty of the trees you select for your property.

Think Ahead Before You Plant Plant AWAY From Power Lines

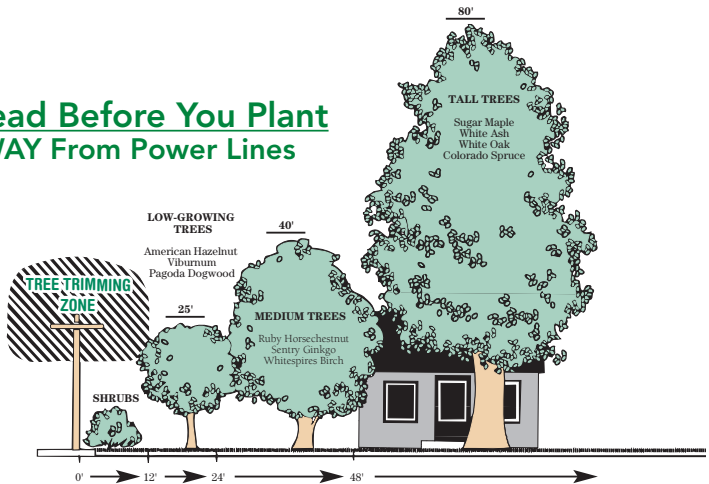


FIGURE 3

This booklet may be useful as a guide when developing your new landscape plan. It may also be helpful when remodeling your current landscape to include smaller-scale plants that won't interfere with overhead lines.

The plants listed in Section 4 are hardy for locations throughout the area served by UPPCO. 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 UPPCO before you cut down any trees or tree limbs near electric lines. Touching a tree limb that is 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.

SECTION 3 - 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 future maintenance will be required on these lines. An 8-foot-wide strip centered directly above an underground line is sufficient space for future maintenance needs. Additionally, transformers located on the ground (which reduce 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.

It is a life-threatening situation to uncover or damage buried electric and telephone cable or gas lines. Before you start any digging project, including tree or shrub planting, call MISS DIG at **811**, or **800-482-7171**. Call at least three working days before digging.

SECTION 4 - 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," is also suggested for use when selecting shrubs or trees. The publication gives a more thorough description of each plant than what is provided here.



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

	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	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 For Planting

Your local nursery is an excellent resource for obtaining planting materials and, if requested, will plant the shrub/tree they supply. 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 3 times 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 should only be done lightly, broadcast, low in nitrogen and after the first growing season.
4. **Mulch.** Maintain a layer of 2 to 4 inches over the entire planting site for the first several growing seasons, 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.



Vegetation Management



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