

Pennsylvania Urban and Community Forestry

Pruning for Utility Line Clearance

Why do utility companies have to prune trees?

■ To ensure safe, reliable electric service, utility companies must prune branches away from high-voltage electric lines. If branches make contact with these lines, they can cause power outages. Worse yet, if children or adults climb a tree whose branches are growing up into energized lines, they could be electrocuted. Every year people are severely burned or killed while climbing trees and making contact with electric lines.

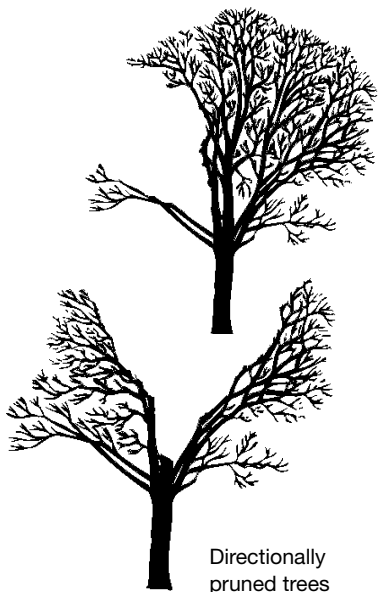
What is directional pruning?

■ The most appropriate way to prune trees for electric utility line clearance is by directional pruning. This pruning method removes branches growing toward conductors in favor

of those growing away. Reduction cuts are used for all branches that are pruned. With reduction cuts branches are pruned properly back to a lateral branch that is at least one-third the diameter of the branch being removed. This allows for good wound closure and protects apical dominance, which reduces water sprouting. In addition, directional pruning removes fewer leaves, which trees need for making food. Directional pruning actually removes fewer branches and increases wound closure, thereby reducing internal decay.

Don't top trees!

■ In the past, utilities obtained line clearance by "topping" trees or "rounding" them over every few years. These techniques give little consideration to tree health or structural integrity. Current research shows that topping or heading cuts create entry points for wood decay. This slowly weakens the tree internally, shortening its life and in many cases causing future storm damage.



Internal decay caused from topping a tree

How will a tree look after it is directionally pruned?

■ Trees growing directly under conductors appear U or V shaped. Trees growing alongside a conductor may appear L shaped from side pruning. At first the tree may appear misshapen, especially if you are looking down the curb line, but that changes over the years as the tree leafs out and grows in. Viewed from directly across the street, the form of a tree that has been pruned by directional pruning appears natural, with lines running through it. Directionally pruned trees stay healthier than topped trees, have a much better form, and require less pruning in the future because of the use of reduction cuts.



View from down the curb



View from across the street

Won't the tree break apart once its center is cut out?

■ If properly pruned back to sound lateral branches, free of internal decay, V-shaped trees do not split

apart, even in storms. The tree's strength is in its solid wood and strong natural branch attachments. Internal decay from poor pruning, such as topping, or structural defects such as weak branch unions often are factors in tree failures. Directional pruning is done to minimize decay and improve weak branch unions.

- If you see defective trees that pose a threat to electric lines, property, or people, please contact your local utility company. They may be able to remove the tree. If you have further concerns about a tree's safety, contact an International Society of Arboriculture (ISA) Certified Arborist to perform a professional evaluation. (A list of certified arborists can be found at www.isa-arbor.com.)

A local tree service or landscaper told me this is bad for my tree.

- Misinformation abounds regarding tree-pruning practices. The American National Standards Institute publishes the *ANSI-A300 Standards for Tree Maintenance*. These standards are recognized and approved by the National Arborist Association, the ISA, and the USDA Forest Service. Directional pruning for trees in conflict with utility lines meets these guidelines, while tree topping is a prohibited practice. In addition, the National Arbor Day Foundation recognizes utilities that practice proper tree pruning and train their contract crews by providing them with awards such as the Tree Line USA Award.
- Directional pruning is promoted by Pennsylvania Community Forests, the Pennsylvania DCNR Bureau of Forestry, and the Energy Association of Pennsylvania as the proper way to prune trees in conflict with electric lines.

What other options do I have for dealing with trees that are growing into power lines?

- First, avoid having your tree topped or rounded over. That will only remove more foliage, make more pruning wounds, and stress the tree, causing unstable decay and water sprouting. The best long-term solution for tree-utility conflicts is to remove large trees and replace them with compatible species that will mature to a lower height than the electric conductors. Or plant trees far enough from utility lines that they will not make contact. Tree species such as crabapple, hawthorn, serviceberry, dogwood, hedge maple, or Japanese tree lilac are compatible replacements for large trees. For more information, see the references listed below or contact your local utility forester, Penn State Cooperative Extension office, or the DCNR Bureau of Forestry office and ask for information on utility-compatible tree species.



Utility-compatible flowering crabapple tree

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For more information

Arboriculture: Care of Trees, Shrubs, and Vines. Hall, Inc., Englewood Cliffs, NJ 07652.

Modern Arboriculture. Shigo and Trees, Associates, 4 Denbow Road, Durham, NH 03824-3105.

How to Prune Young Shade Trees. (Other publications on tree care and maintenance are also available.) The National Arbor Day Foundation, 100 Arbor Avenue, Nebraska City, NE 68410. Phone: 402-474-5655.

Questions about Trees and Utilities. Pennsylvania Urban and Community Forestry Fact Sheet 7, Publications Distribution Center, 112 Agricultural Administration Building, The Pennsylvania State University, University Park, PA 16802-2602. Phone: 814-865-6713.

Standard Practices for Trees, Shrubs, and Other Woody Plant Maintenance. (ANSI A300) International Society of Arboriculture, PO Box GG, Savoy, IL 61874. Phone: 217-355-9411.

Standard Practices for Tree Care Operations—Pruning, Trimming, Repairing, Maintaining, Removing Trees, and Cutting Brush—Safety Requirements. (ANSI Z153.1-1994) International Society of Arboriculture, PO Box GG, Savoy, IL 61874. Phone: 217-355-9411.

Landscape Tree Fact Sheets. Publications Distribution Center, 112 Agricultural Administration Building, The Pennsylvania State University, University Park, PA 16802-2602. Phone: 814-865-6713.

Tree-Pruning Guidelines. (Other publications on tree care and maintenance are also available.) International Society of Arboriculture, PO Box GG, Savoy, IL 61874. Phone: 217-355-9411.

Trees Are Good. Created by the International Society of Agriculture to provide the general public with quality tree care information. www.treesaregood.com

International Society of Agriculture. A worldwide organization dedicated to fostering a greater appreciation of trees and their care. www.isa-arbor.com

This fact sheet was prepared with guidance from the Pennsylvania Community Forests and support from the Pennsylvania DCNR Bureau of Forestry. For more information, contact the Pennsylvania Urban and Community Forestry Program, School of Forest Resources, The Pennsylvania State University, 334 Forest Resources Building, University Park, PA 16802; 814-863-7941.

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