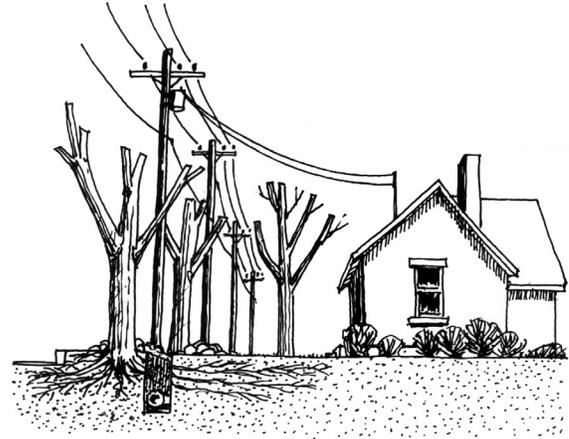




# Tree Line USA

**TREE CITY USA®  
BULLETIN**

No. **25** Editor: Dr. James R. Fazio • \$3.00



**WRONG** Too often, the approach to resolving conflicts between trees and utility lines results in mutilated trees. Trenching instead of tunneling is just as disastrous beneath the surface.

**T**rees in the forest face severe competition to survive, but it is nothing compared with what their city cousins must endure to share space with utilities. In the confined areas along streets and near buildings, limbs and wires compete in the air while roots, cables, and pipes vie for space in the soil below. The dilemma is that both trees and utilities are essential to the high standard of living we expect in our communities. The benefits of trees range from energy-saving shade to pure beauty that brightens our lives and adds value to our property. At the same time, our way of life depends heavily on the delivery of electricity, gas, telephone service, and cable TV — and we want it without interruption.

Utility company employees strive to meet the demands for good service. To do this, they find it necessary to keep overhead lines free from contact with limbs and out of danger from branches that fall during storms. As the companies respond to demands for buried utilities, they face yet another set of challenges in placing or repairing lines in the same soil where roots grow.

In some communities, the tree-utility dilemma has led to the deformation of trees by topping, mortality



**BETTER** Trees and utility lines can co-exist through careful pruning of large trees, planting trees in the future that mature below overhead lines, and tunneling instead of trenching near tree roots.

from severed roots, and the removal of large trees. In other areas, more enlightened companies have developed methods that allow trees and utilities to co-exist — all to the benefit of a better community. In 1992, the Arbor Day Foundation created Tree Line USA to publicly recognize those companies or municipalities that provide utility service while at the same time protecting community trees. Just as importantly, the intent is to inform others about this better way of providing total service to their communities and to encourage them to do likewise.

# The Impact of Utilities

*Trees in the city have a tough life. They are always in competition for high-value space and they are forever under the threat of injury. When horses were essential for transportation, they were a main problem for trees, or at least trees with tasty bark within reach of gnawing teeth. Today the threat is from other essential services such as construction work and sidewalk or road replacement. But nothing has the potential for harming community trees as much as utility work on the ubiquitous wires that form the lifeline of our nation.*



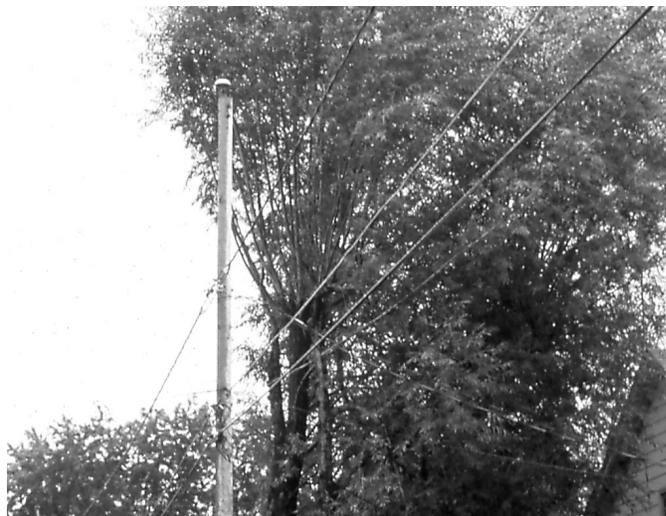
Topped sugar maples diminish the beauty of a community and burden utility companies with high clearance costs.

The Wall Street Journal once quoted conservation groups and “irate residents” who claimed that “millions of trees nationwide are needlessly damaged or killed every year by overzealous and undertrained work crews.” While accuracy of this claim is open to debate, it is a fact that utilities spend about \$3 billion annually in an attempt to keep lines clear of limbs. The work is necessary for two reasons: (1) to prevent energized wires from coming in contact with limbs and either breaking the lines or creating a short, and (2) to keep children or others who may be climbing in trees safely away from deadly contact with the lines. Generally, utility standards call for at least 10 feet of clearance around power lines. This is the same distance OSHA requires between wires and any workers, except those with special training.

Throughout the country, there are utility companies and municipal utilities doing the job of line clearance, pole replacement, and underground work in ways that protect trees while at the same time protecting uninterrupted service to customers. Many of these companies are also engaged in educational campaigns to prevent future problems by asking residents and city foresters to carefully select and place the trees they plant. They even sometimes help underwrite the cost of proper planting, knowing that in the long run, it will save time and money. The practices of these companies were the inspiration behind creating the Tree Line USA program.



V-pruning or through pruning are among the terms used for this practice. There is no danger of falling limbs on the electric lines and the shade of mature trees is preserved.



Directional or side pruning allows large trees to co-exist with overhead lines. Like V-pruning, such practices are a compromise to retain large trees and the ecosystem benefits they provide until it is time for their removal and replacement.

## TRIMMING OR PRUNING?

The difference in wording is small, but the concept is huge. The word “trimming” is commonly used in the tree care and utility industries, but it is slowly being replaced by the more proper word, “pruning.” The difference? Trimming is something you do to a mustache or hedge. It is the indiscriminate removal of unwanted parts to produce a shape. Pruning, on the other hand, implies careful, intentional selection — the key to properly removing limbs for utility line clearance.

# Practices That Favor Trees

*For all who care about trees, there are practices that can help end conflict between trees and the security of overhead lines.*

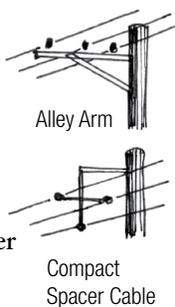
## PLACING UTILITIES UNDERGROUND — CAREFULLY!

Underground utilities are common in new developments and will eventually replace overhead wires in many other areas. This makes particularly good sense in storm-prone areas. However, the practice is not without challenges.

When lines go underground, it is essential to protect tree roots. Roots are the lifeline of a tree. They are usually found within 24"-36" of the surface, spreading to a distance at least equal to the height of the tree. There are many techniques for working within this root zone, including tunneling instead of trenching. A general rule is that a trench should come no closer to the trunk of a tree than 1' for every 1" of trunk diameter. This means that for a tree 10 inches in diameter, tunneling would replace trenching no closer than 10 feet from the tree, and ideally farther away.

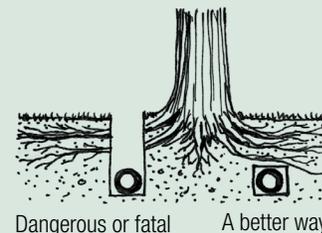
## USING SPECIAL CONSTRUCTION

Engineering is being used by some companies to help protect trees. For example, alley arms may be used to route lines further away from trees. Compact spacer cables eliminate the need for wide crossarms, requiring less pruning for proper clearance. Placing multiple utilities on the same poles on one side of a street can also help.



## TUNNEL, DON'T TRENCH

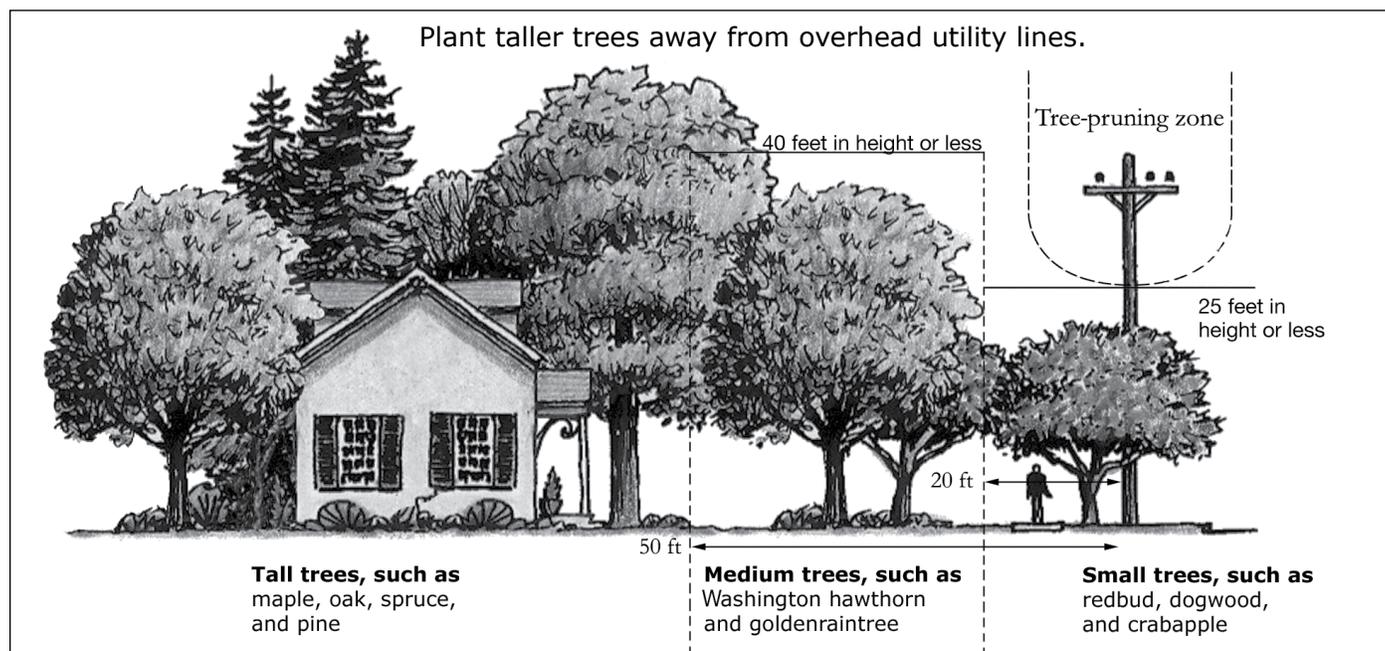
Trenches for underground utility lines can kill or seriously weaken nearby trees. Trees may literally fall over after some trenching operations. Tunneling is a better alternative.



Modern boring equipment enables utility companies to tunnel safely below a tree's critical root zone.

## PLANTING THE RIGHT SIZE TREE

No other technique could go as far toward ending the conflict between trees and utilities than planting properly beneath and near overhead lines. Quite simply, this means planting trees that mature at 25' or less beneath lines. Some utilities will even help financially with the removal of large problem trees and their replacement with appropriately small trees.



# The Tree Line USA Program

**T**ree Line USA is modeled after Tree City USA. The principle behind this program is to recognize and reward private companies and publicly owned utilities that meet specific requirements designed to protect trees. The program is a partnership of the Arbor Day Foundation and the National Association of State Foresters, with the community forestry coordinator in each state playing a particularly important role. The aim is to promote the dual goals of dependable utility service and abundant, healthy trees along America's streets and highways. Today, more than 150 utilities meet the program requirements.



A handsome flag is among the award items presented to utilities that complete Tree Line USA requirements.

## APPLICATION PROCEDURES

Any utility's arborist or other official may obtain an application form from the Arbor Day Foundation by going online to [arborday.org/treelineUSA](http://arborday.org/treelineUSA). A \$150 application fee for first-year utilities is required. A \$75 recertification fee is required every year after. The completed application is then submitted to the state forester's office where it is reviewed and certified for meeting all requirements before it is forwarded to the Foundation for final approval. When more than one state is served by the utility, the application is submitted to the state forester in which the utility's headquarters office is located. Applications must be received by the Foundation by December 1 each year.



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## RECOGNITION AND AWARDS

Utilities that qualify for Tree Line USA are announced annually in the spring and receive an attractive flag from the state forester, usually on Arbor Day. A news release is also distributed. In addition, truck and hard hat decals, caps, and similar items help let citizens know their utility cares about trees.



The dual goals of Tree Line USA are to provide reliable delivery of utility services while at the same time maintaining healthy trees in the landscape. Tree Line USA recognizes utilities that meet requirements that have been established toward that end.

# Results-Oriented Requirements



Utilities can play an important role in educating homeowners about the kinds of trees that should be planted near overhead lines. Tree planting guides, inserts with billings, newspaper ads, and Arbor Day programs are a few of the ways this ongoing educational campaign is being conducted.

*To achieve a Tree Line USA award, a utility must meet the minimum requirements outlined below.*

## 1. QUALITY TREE CARE

- A. **Utility Pruning:** Work practices are formally adopted for line clearance tree pruning that are consistent with current ANSI A300 Part 1 and as explained in ISA Utility Pruning Best Management Practices.
- B. **Integrated Vegetation Management (IVM):** Work practices are formally adopted for management of right-of-way vegetation that are consistent with current ANSI A300 Part 7 and as explained in ISA Integrated Vegetation Management Best Management Practices.
- C. **Underground Utility Construction:** Work practices are recommended for utility trenching and tunneling construction activities near trees, similar to methods described in Trees and Development and in the video, Trenching and Tunneling, both available from the International Society of Arboriculture (ISA).
- D. **Compliance:** The utility's vegetation management standards and work practices comply with all Federal, state, and local tree care statutes, regulations, and ordinances.
- E. **Quality Assurance:** The utility has a quality control program and quality assurance process in place to confirm that the vegetation management work is completed in a manner consistent with the provisions for Quality Tree Care, items A & B above.
- F. **Impact on the Urban Forest:** The utility vegetation management program includes collaboration with other urban forest advocates and strives to enhance the positive impact of its vegetation management program on both natural and urban forests.

## 2. ANNUAL WORKER TRAINING

- A. Employees, contractor workers, and supervisors who perform pruning and right-of-way vegetation maintenance for the utility complete annual formal training.
- B. The utility ensures that training takes place and maintains documentation.

## 3. COMMUNITY TREE PLANTING AND PUBLIC EDUCATION

- A. The utility allocates an annual expenditure of at least 10 cents per customer for use in community tree planting programs throughout the service area.
- B. The utility makes annual contact with all homeowners and customers for the purpose of providing educational information regarding tree-related utility issues.

## 4. TREE-BASED ENERGY CONSERVATION PROGRAM

The utility has a tree-based energy conservation program, which makes special consideration of the benefits of trees in energy conservation.

## 5. ARBOR DAY OBSERVANCE

Annual Arbor Day events are sponsored by or participated in by the utility. Utilities are encouraged to collaborate with other urban forest advocates, such as a municipality, school, or community tree planting group to promote Arbor Day events.

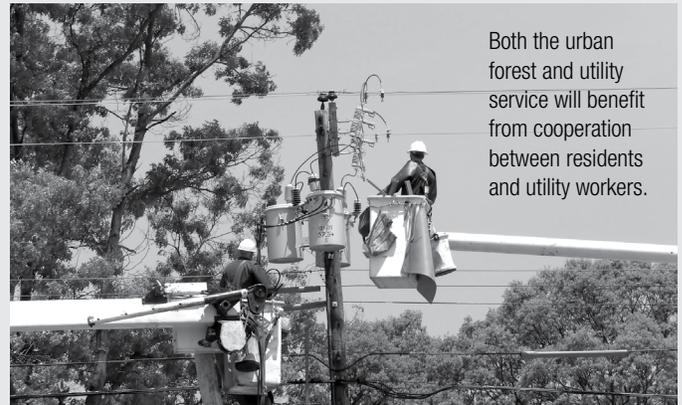
# Collaborating With Your Utility

## WHAT YOU CAN EXPECT FROM YOUR UTILITY ...

- ✓ Safe clearance for utility lines.
- ✓ Carefully pruned branches using Dr. Alex Shigo's natural target pruning method. In this method, pruning cuts are made just outside the branch collar and bark ridge at the base of a limb. This promotes the sealing of pruning wounds and the prevention of decay.
- ✓ Dead and weak limbs removed during light prunes on regular cycles.
- ✓ No topping.
- ✓ The use of V-pruning or directional pruning to prevent the removal of large, healthy trees.
- ✓ Advance notification to adjacent home or business owners before pruning or if it is necessary to remove a tree.
- ✓ Trained tree workers and a knowledgeable staff arborist.
- ✓ Minimum trenching near trees; detouring around the dripline of trees when possible or tunneling (at least 24" deep).
- ✓ When roots larger than 2" must be severed, they are cut sharply or sawed, not torn or crushed.
- ✓ Protection of tree trunks from equipment and prevention of soil compaction over root zones.
- ✓ Communication between utility personnel and the city forester.
- ✓ Sincere concern for the health of trees and other landscape vegetation.

## WHAT YOU CAN DO TO HELP ...

- ✓ Plant low-maturing trees beneath or near overhead lines.
- ✓ Understand the need for line clearance and work cooperatively when crews are in your neighborhood.
- ✓ Accept the use of growth-regulating chemicals when used, realizing that they reduce costs, pose no threat to humans or the environment, and offer other advantages as explained at the bottom of this page.
- ✓ Never attempt pruning within 10 feet of utility wires, and always be careful with ladders or other equipment to prevent contact.
- ✓ Report broken limbs or other threats to line security to the utility.
- ✓ For a list of utilities that have received Tree Line USA awards, visit [arborday.org/treelineUSA](http://arborday.org/treelineUSA). If the utility that serves your community is not on the list, urge them to obtain application materials or send them a copy of this bulletin.



Both the urban forest and utility service will benefit from cooperation between residents and utility workers.

## What Are Growth Regulators?

Some utility companies use chemicals called growth regulators to slow the elongation of twigs on a tree. The advantages of this treatment are: (1) longer periods between routine pruning cycles, (2) less need for sending crews to "hot spot" individual trees that grow into wires, and (3) less biomass to remove from the work site. The utility can also reduce costs in this way and increase worker safety. Happily, there are also advantages to the tree.

The chemicals used are usually in a class called antigibberellins. Gibberellins are natural chemicals in a tree that stimulate cell division and/or elongation. Antigibberellins interfere with that process and slow elongation without damaging the tree. In fact,

trees that are treated with this chemical tend to have smaller, darker leaves and denser canopies — and the treatment actually reduces stress. Whereas pruning shocks a tree by removing the tree's food-manufacturing leaves and thus requiring it to draw on reserves for regrowth, growth regulators let the tree concentrate its energy on surviving drought, insects, and disease attacks.

Trained workers can safely inject the growth regulator right into the xylem of the tree trunk, where it is taken up and distributed as water moves up from the roots. In this way, there is no accidental human contact and no contamination of vegetation other than the target trees.

# Models for Utility Companies

*Utility companies that care about good service and trees make good neighbors. Here are some examples that need to be followed by every utility in America.*

## NATIONAL GRID – AN EXEMPLARY COMPANY

National Grid, a long-time recipient of the Tree Line USA award, serves 3.3 million customers in New York and New England. A staff of 39 arborists guide the tree work and provide annual training to all employees who work on or around trees. Numerous tree-related mailings are directed to customers, and an explanatory booklet has been produced — *Trees and Your Electric Service* — which is now available online. The company also sponsored a tree replacement program following devastating storms, offering residents \$50 per approved tree to replant beneath utility lines.

## STATEWIDE SPONSORS OF ARBOR DAY

Three major utilities in Idaho team up with the Idaho Nursery and Landscape Association and the Idaho Department of Lands each year to offer \$300 grants to communities to help them celebrate Arbor Day. All communities can apply for a grant; approximately 45 are selected from a drawing.

## TREES PLUS PARTNERSHIPS EQUAL ENERGY SAVINGS

The Sacramento Municipal Utility District invests more than \$1 million a year helping to plant trees and promote follow-up care. Working in partnership with the Sacramento Tree Foundation, the utility provides customers with a choice of 27 area-appropriate, pest- and disease-resistant species. Recipients do the planting, unless age or disability requires volunteers help, and Foundation staff provides the technical advice. The goal: more than 1 million new trees with 100 percent survival and enough energy savings from shade to eliminate the need for a new power plant. This means cost savings to power consumers, less air pollution, and all the benefits that come from maintaining a healthy urban forest. Now the concept is being used nationwide as part of the Arbor Day Foundation's Energy-Saving Trees program. More information is available at [arborday.org/est](http://arborday.org/est).



Utilities that invest in tree care and education often see the results in cost savings and more satisfied customers.

## TREE CARE SAVES MONEY

Utility companies that have a tree care program are finding that not only do they enjoy better public relations and happier customers, they also save money. When Central Illinois Public Service Company ended traditional topping practices in the mid-1980s and adopted pruning policies prescribed by arborists and foresters, they found that over a five-year period, line clearance costs dropped by \$2 million annually. The number of tree-related power outages also dropped to an all-time low.

## TREES FOREVER – STATEWIDE PROGRAMS IN IOWA

In the Heartland, numerous private and public utility companies joined with a nonprofit organization to encourage community tree planting programs. Trees Forever was founded in 1989 by two volunteer tree advocates. Today, it works with roughly 200 communities through utility partnerships. The program is a three-way partnership between the utility, Trees Forever, and the municipality. The utility partner provides funding, and Trees Forever administers the program and provides assistance to local volunteers. The local community steering committee provides matching dollars, volunteer labor, and long-term care for the trees that are planted.

## TREES AND GOOD SERVICE ARE PRIORITIES

Pacific Gas and Electric Corporation in California has one of the largest vegetation management programs in the U.S. Ten utility arborists manage the tree pruning crews that clear power lines of tree branches and other vegetation. Contracted consulting utility foresters and/or tree pruning company representatives contact homeowners before tree pruning takes place. Explanations are provided about why tree work must be done and what customers can expect from the pruning. In all cases, the company strives to use directional pruning methods. Educational literature, customer newsletters, school programs, Arbor Day celebrations, and seminars help spread information about the importance of safety around power lines and planting the right tree in the right place. Partnerships with both nonprofit and government agencies also help with education, special tree plantings, and removal/replacement tree projects. PG&E has met the standards of the Tree Line USA program continuously since 1995.

# Communication is the Key

Tree Line USA and its partnership with the utility industry has made great strides in safeguarding community trees. A key to this progress has been communication — both between utilities and their customers and within the industry itself. The Utility Arborist Association (UAA), a member group in the International Society of Arboriculture, has been an important impetus for better communication. Another has been the annual Partners in Community Forestry National Conference sponsored by the Arbor Day Foundation. This popular event brings together the nation's leading tree care and utility experts, practitioners in arboriculture and urban forestry, and interested citizens. It focuses on issues and successful techniques and equipment, but more importantly, it provides a forum for the exchange of ideas and support. It is also the venue where Tree Line USA utilities are publicly recognized for their achievements.

For the date and location of the next conference and more information, please visit [arborday.org/PCF](http://arborday.org/PCF).

## THE BENEFITS OF BEING A TREE LINE USA UTILITY

- ✓ Healthier and more abundant community forests, including less tree mortality when proper pruning and trenching/tunneling practices are used.
- ✓ Increased service reliability because properly pruned trees with healthy root systems will mean less decay and structural weakness and fewer downed lines during storms.
- ✓ Lower line clearance costs resulting from proper pruning instead of topping and from more low-maturing trees being planted beneath lines.
- ✓ Fewer customer complaints.
- ✓ Better public relations resulting from publicity surrounding the award and its requirements.
- ✓ Lower peak air conditioning and heating demand because more trees — and better placement of trees — will help moderate air temperatures.
- ✓ Trees help absorb climate-changing carbon dioxide produced by power plants that burn fossil fuels.
- ✓ Satisfaction that comes from doing one's best to improve our communities and the environment.

## FOR MORE INFORMATION ...

For more information about Tree Line USA or other programs and helpful resources of the Arbor Day Foundation, please visit [arborday.org](http://arborday.org).

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