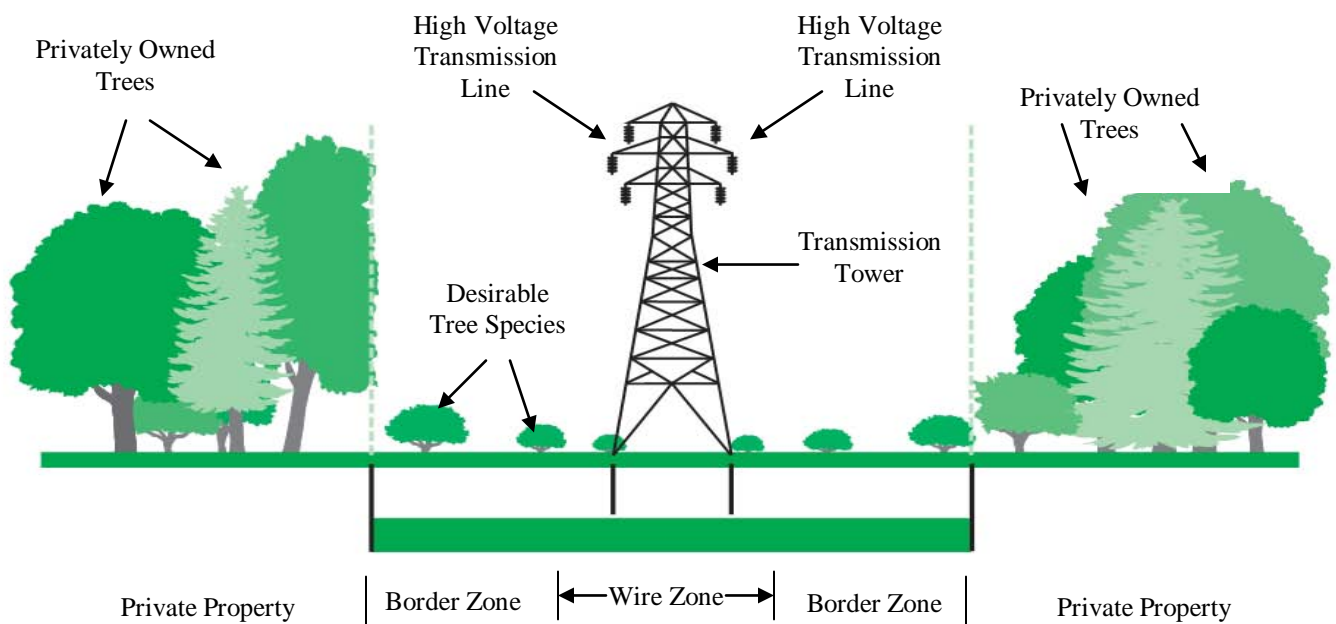


# **Vegetation Management on Con Edison's Transmission Line Rights-of-Way**



Consolidated Edison Company of New York, Inc  
Vegetation Management Program Overview  
3/10/2010

## Transmission Line Right-of-Way (ROW)



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Consolidated Edison Company of New York, Inc.

## **General Information about Con Edison's Transmission Line Vegetation Management Program**

Consolidated Edison Company of New York, Inc. (Con Edison) maintains a network of bulk-power transmission lines which are critical to the Northeastern United States. Con Edison typically operates these lines at 345,000 volts. At such extreme voltage, proper clearance between vegetation and wires is critical to maintain system reliability and public safety since electricity can spark over to objects such as tall trees growing, and trees falling, near the lines. The trees do not have to actually make contact with the lines to cause a spark over, so it is imperative that the appropriate clearances are always maintained. The Northeast blackout of 2003 was, in part, initiated by such an incident under a 345 kV transmission line in Ohio. Since this event, there have been significant changes in the regulation of transmission line vegetation management practices throughout the United States and Canada. Con Edison's Transmission Line Vegetation Management Program follows industry-recognized Best Management Practices in bringing its rights-of-way (ROW) into compliance and ensuring that reliability is maintained. Vegetation maintenance work is typically carried out in a three-year cycle that addresses different segments of Con Edison's overhead system each year. However, there are some areas in Westchester County that need to be maintained more frequently because the corridor is not as wide as on other right of ways.

Con Edison owns approximately 80% of the land where transmission line ROWs exist in Westchester, Putnam, Dutchess and Richmond counties. The other 20% of the land, mainly situated in Westchester County, is owned by the City of New York and operated by the New York City Department of Environmental Protection (NYCDEP). Con Edison maintains land use agreements to operate its overhead transmission lines on land owned by the City of New York. ROW widths vary throughout the overhead transmission system from 50 feet to over 500 feet in some cases. Generally, Con Edison aims to complete the following tasks when performing routine vegetation management during each treatment cycle:

- Clearing of brush around transmission tower bases to maintain clear access to structures for inspection, climbing, and other maintenance activities.
- Clearing of brush along access roads to ensure maintenance crews can safely and efficiently traverse the ROW during both scheduled and emergency work.
- Removal of undesirable vegetation from the wire zone. Generally, the wire zone is the area immediately beneath the wires, also referred to as the floor of the ROW. Undesirable vegetation is that which can grow, or fall, within an unsafe distance of a transmission line. Con Edison aims to promote early successional ecosystems on the floor of the ROW. Ideally, this area will become established with low-growing shrubs and grasses which are beneficial to wildlife and not capable of interfering with the lines. Since transmission line heights vary from wire span to wire span, the maximum allowable height of species on the floor will also vary. Generally, the floor work is an effort to remove newly established tree species that might be anywhere from 1.5 feet to 10 feet tall.
- Removal of undesirable vegetation from the border zone. The border zone is the general area between the outer boundary of the wire zone and the ROW property line. Between 2003 and 2010, Con Edison completed significant undesirable tree removals and therefore expects that

additional undesirable tree removals of this magnitude will not be required for some time. Any tree species on the ROW that has the potential to grow tall enough to impact the lines was removed during the cycle, regardless of its actual height. For example, if a 10 foot tall flowering dogwood is growing next to a 10 foot tall ailanthus, only the ailanthus is removed, since this species can become tall enough to impact the lines at some point in its lifetime. In most places, the dogwood can never become tall enough, and is therefore allowed to remain. Topping of trees is not performed, as this practice is not compliant with best management practices or ANSI standards in the majority of situations encountered on transmission corridors.

- Trimming of privately-owned tree branches that encroach onto the ROW. If undesirable vegetation is wholly or partially rooted off the ROW and is on adjacent private property, Con Edison only trims branches that impact clearance levels back to the property line. Con Edison is not allowed to remove any privately-owned trees without written permission from the landowner, and does not solicit this work unless it is deemed necessary for transmission system safety and reliability.
- Chipping of woody debris. When trees are trimmed or fully removed during the vegetation management cycle, all debris is chipped on site, removed completely, or strategically placed on the ROW. Chipping on site keeps nutrients in the ecosystem, while providing short-term soil protection and erosion control. Removing debris fully, or placing it strategically, on the ROW minimizes aesthetic impact to neighbors.
- Herbicide application. Herbicides are chemicals that are used to retard, or stop vegetation growth. Only herbicides approved by the United States Environmental Protection Agency and the New York State Department of Environmental Conservation (NYSDEC) are used on Con Edison ROWs. Herbicide applications are made on undesirable tree species rooted in the ROW that are 10 feet tall or less, and on cut tree stumps that have the ability to re-sprout from the stump or root system. Generally, stump sprouting results in many more stems than were originally present, creating a far more extensive and difficult management problem. Con Edison does not use broadcast or indiscriminate high-volume herbicide application techniques. When herbicide application is utilized, notification and posting is done in accordance with NYSDEC requirements. All contractor employees working on Con Edison's vegetation management program must have the appropriate state license to apply herbicides if such application is part of the scope of work. Additionally, Con Edison management employees overseeing the implementation of the vegetation management program must be certified as NYSDEC Pesticide Technicians.

## Vegetation Management Frequently Asked Questions (FAQs)

1. **Q:** What is a right-of-way (ROW)?

**A:** A right-of-way is defined as a legal right of passage over another person's ground or the land used or owned by a public utility.

2. **Q:** What is an overhead transmission line?

**A:** An overhead transmission line is a high voltage circuit that carries electricity typically over long distances and is supported by large steel lattice structures installed on the transmission ROW.

3. **Q:** When does Con Edison complete vegetation management work?

**A:** Con Edison completes vegetation management work on a 3-year cycle across its entire overhead transmission system in Westchester, Putnam, Dutchess, and Richmond Counties. Some areas in Westchester County are addressed more frequently since the ROW widths are smaller and clearances between private trees and the wires are much less than on other ROWs.

4. **Q:** Does Con Edison notify residents before starting vegetation management work?

**A:** Yes. Con Edison contractors hand out notification cards to residents living adjacent to or near transmission right-of-way up to two weeks before work begins. In 2010, revised notification cards are being designed to include a more specific work scope and additional background information. Depending upon where you live, Con Edison will also notify the applicable contacts in your municipality (e.g., Department of Public Works, Highway Department, Environmental Planner, etc.). A Con Edison contact phone number and company website information are included on each notification card.

5. **Q:** Why does Con Edison remove small trees that may never grow tall enough to make contact with or fall in close proximity to transmission lines?

**A:** Con Edison removes undesirable vegetation from the ROW regardless of height. Undesirable vegetation is defined as woody plants with one or more trunks which can grow or fall within an unsafe distance of a transmission line. Certain tree species on our ROWs can grow up to ten feet per year and have the potential to negatively impact the transmission lines in a very short time. Trees do not have to make physical contact with a transmission line to cause a spark-over, so any tree that could grow to reach an unsafe distance from the lines is removed. The goal is not to remove every tree on the ROW regardless of species. In many areas of Westchester County, however, only undesirable vegetation may exist on the ROW and, when it is all removed, the result is an area barren of the large hardwood trees that were once there. There are specific areas of the overhead transmission system where compatible trees do exist and Con Edison's goal of achieving a meadow-like landscape consisting of low growing trees, shrubs and grasses is achieved. Trees may appear to be very far from the lines from one perspective, but in actuality, may not be as far away from the lines as you think. Tree clearances must be viewed from at least two or three different positions on the ROW before confirming that no

hazard exists for the transmission line. Con Edison transmission line maintenance staff also measures tree clearance and fall-over risks with sophisticated laser surveying devices.

**6. Q:** Does Con Edison apply herbicides to the ROW?

**A:** Yes. Con Edison applies a low volume foliar herbicide on select vegetation on the ROW and also applies a small herbicide treatment to tree stumps soon after cutting. Only chemicals approved by the United States Environmental Protection Agency (USEPA) and New York State Department of Environmental Conservation (NYSDEC) are used and applied by properly certified pesticide applicators. Herbicide application is an effective means for controlling undesirable vegetation and is recognized as a critical component of Con Edison's Integrated Vegetation Management strategy. This strategy is used by many utilities throughout the United States.

**7. Q:** Now that the trees have been cut down, will there be soil erosion and flooding near my home?

**A:** Removing trees from the ROW alone does not cause flooding or soil erosion. Water flow, or runoff, is based largely on existing site topography and soil permeability. Con Edison's ROW vegetation management practices do not alter either of these conditions. Con Edison does recognize that root systems absorb water trapped within the soil to allow photosynthesis to occur. However, tree roots mainly absorb water trapped within the soil, not on the surface, and do not absorb greater quantities of water during rain events. Excess water received during rain events will continue to be trapped in the soil and filtered to groundwater at the soil rate. Once the soil is saturated, runoff will be determined by site topography.

Regarding soil erosion, any soil exposed during tree clearing activities is managed in accordance with the NY State Standards and Specifications for Erosion and Sediment Control. Common erosion control techniques include proper installation of various sediment barriers and re-seeding. All sediment controls are installed prior to land disturbance, routinely inspected throughout the duration of the clearing activities, and left in place until permanent vegetation has re-established on-site. In order to facilitate the re-establishment of vegetation all bare soil areas are re-seed utilizing a native seed mix and covered with mulch.

**8. Q:** Will Con Edison be planting new trees in their ROW to replace the ones that were removed?

**A:** Con Edison has been working with individual homeowners on a case-by-case basis to replant compatible vegetation on their private property in exchange for permission to remove private trees that have the potential to threaten the transmission lines. Con Edison does not replant trees on the ROW since native shrubs and woody plants typically grow very aggressively during the summer months and would consume the new vegetation. Constant maintenance would be required for these new plantings as they adjust to the new soil conditions and, since Con Edison maintains over 100 miles of ROW, this would not be practical. Con Edison will spread native seed mixes, where needed, to promote stable, low-growing, transmission line compatible plant communities that are beneficial to wildlife and ecology.

**9. Q:** Do any regulatory agencies monitor Con Edison's vegetation management program?

**A:** Yes. As outlined in PSC Case 04-E-0822, issued in June 2005, Con Edison was required to submit a transmission ROW vegetation management plan to the New York State Public Service Commission

for approval. This plan was approved in 2007 and has been successfully implemented over the past three years. The Federal Energy Regulatory Commission (FERC) also oversees that utilities throughout the country maintain reliability through effective vegetation management practices. FERC has designated the North American Electric Reliability Corporation (NERC) as the Electric Reliability Organization responsible for enforcing the Transmission Vegetation Management Program Standard, FAC-003-1. Serious violations of this standard can result in sanctions up to \$1,000,000 per day for each requirement violated. Instances where utilities have been sanctioned for various violations of this standard can be found on the NERC website ([www.nerc.com](http://www.nerc.com)). Please click on the link below under the Federal Energy Regulatory Commission heading for more details and frequently asked questions regarding the federal guidelines on vegetation management.

## Helpful Links:

United States Federal Energy Regulatory Commission – Vegetation Management Frequently Asked Questions  
<http://www.ferc.gov/industries/electric/indus-act/blackout/vm-faq.pdf>

North American Electric Reliability Corporation:

<http://www.nerc.com/>

<http://www.nerc.com/files/FAC-003-1.pdf>

New York State Public Service Commission - Vegetation Management Info and Frequently Asked Questions

[http://www.dps.state.ny.us/Vegetation\\_Management.html](http://www.dps.state.ny.us/Vegetation_Management.html)

Northeast Blackout of 2003

[http://en.wikipedia.org/wiki/Northeast\\_Blackout\\_of\\_2003](http://en.wikipedia.org/wiki/Northeast_Blackout_of_2003) (chain of events)

<http://www.nerc.com/filez/blackout.html>

Utility Arborist Association – Integrated Vegetation Management

[http://tdworld.com/veg-management/power\\_uaa\\_helps\\_utilities/](http://tdworld.com/veg-management/power_uaa_helps_utilities/)

Con Edison Vegetation Management:

[http://www.coned.com/publicissues/treeguide\\_intro.asp](http://www.coned.com/publicissues/treeguide_intro.asp)

Tree Maintenance Guide – Tips on tree selection, planting, and pruning

<http://www.oru.com/documents/energyandsafety/treemaintenanceguide.pdf>

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