

## **Guidelines and Best Management Practices For Right of Way Management**

**Copper Valley Electric Association Guidelines and Best Management Practices for  
Right of Way Management**

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# **Copper Valley Electric Association Guidelines and Best Management Practices for Right of Way Management**

## **Section 1 HISTORY AND GOALS**

This document is intended as a guide for Copper Valley Electric Association (CVEA) and Contractor employees. It is the goal of Copper Valley Electric Association to maintain its right of ways for safety, cost efficiencies, and reliability while being respectful of the members and responsible for the environment on which CVEA's rights of way lie. CVEA strives to have rights of way that are accessible by equipment and personnel. Issues that are not covered or concerns that may arise after implementing this standard will be addressed as needed to make any changes to this standard.

## **Section 2 Right of Way Maintenance Schedules**

The table in EXHIBIT A includes a line clearance frequency schedule for each circuit based by substation. CVEA has established a right-of-way line clearance cycle of seven years. However, this cycle may be more or less frequent on a circuit-by-circuit basis depending on several factors including but not limited to potential fire risk, past experiences, unanticipated circumstances such as a wind storm, and availability of resources.

- 2.1 The Operations Department is responsible for determining the appropriate line clearance schedule for each circuit and will update the schedule as needed.
- 2.2 Line patrol currently based on substation circuits is completed on a three-year cycle and includes inspection for hazard trees. If a hazard tree is identified, it should be documented and reported for further action. Trees determined to pose a serious hazard should be cleared in 45 days or less when possible.
- 2.3 Hazard tree evaluation will be completed 3 years after the normal clearing cycle for the specified circuits based by substation. Utility circuits will be patrolled for hazard trees and the hazard trees will be removed according to guidelines set forth in this document.

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### **Section 3 HAZARD TREE REMOVAL METHODS AND PROCEDURES**

- 3.1 The CVEA authorized representative for implementing and maintaining the ROW program and this document is the Director of Operations or his/her designee.
- 3.2 For a hazard tree that is located on private property outside of the right-of-way and where a need exists to maintain clearance a CVEA representative or Contractor should educate the member of why it is necessary to clear the hazard tree and the potential risks/liabilities of not allowing CVEA to clear the tree(s).
- 3.3 All trees along edge of right-of-way (including the opposite side of the road for lines adjacent to a road) should be inspected for risk to the power line. Refer to Diagram 1. Any hazard tree noted should be marked and removed after notifying member of the work to be completed. Hazard trees within the right-of-way should be cleared in the same manner as we would a live tree. Hazard trees located along the edge of the right of way and extending 20 feet beyond should be taken to the ground. Hazard trees located 20 feet beyond the edge of the right-of-way shall be trimmed or cut to eliminate the danger of causing an outage or fire (not necessarily taken to the ground). In all cases felled trees and/or slash should be left flat to ground as not to create a hazard. Refer to Section 7 of this document for tree clean up and disposal procedures.
- 3.4 CVEA follows Alaska USDA guidelines for hazard tree identification (Publication No. R10-TP-142 February 2009).
- 3.5 A hazard tree is defined as a tree having one or more of the following characteristics, which may conflict with the conductors or structures (poles and hardware) if such tree(s) fell in the direction of or otherwise jeopardizes the CVEA line. Only hazard trees that can contact the conductors or structures when falling should be removed or cut.
  - 3.5.1 Dead or dying - all dead or dying trees along, or outside the CVEA right-of-way. Removal depends on height of tree and direction of the lean.
  - 3.5.2 Leaning trees - trees that have such a lean toward the right-of-way that they cannot be trimmed without removing the tops and slanting the tree back. Removal depends on height and species of the tree, direction of the lean, and barriers between the trees and the right-of-way.
  - 3.5.3 Cankers and canker-rots - present as a localized area of dead bark and cambium on trees on the bark of trunk around the circumference of the tree and often are visible on the canker face. In some cases, canker-rots are internal and not visible.

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- 3.5.4 Animal and mechanical damage - present in the main trunk and broken branches and must show visible signs of decay with evidence of wounds.

*Refer to Table 1 and Table 2 Hazard Tree defect categories  
(Exhibit C) provided by USDA Forest Service.*

### **3.6 Hazard Tree Removals – Maintained and Un-maintained areas**

- 3.6.1 Identify hazard trees and bring to CVEA's attention. In addition, removal of hazard trees is permitted to establish a right-of-way and required clearances after discussion with the member.
- 3.6.2 All hazard tree removal will be performed by CVEA or Contractor unless otherwise agreed upon by the CVEA and the member.
- 3.6.3 Diseased Tree Removals. Generally, CVEA's responsibility is to trim per guidelines and make the tree safe. All trees should be felled away from the conductors. Slash from trees felled onto the right-of-way should be disposed of according to the requirements in Section 7 of these guidelines. In all cases felled trees and/or slash should be left flat to ground as not to create a hazard.

### **3.7 Stump/Stubble Height**

Whenever trees and brush are cut to the ground within and/or up to 20 feet beyond the right of way, the cut stumps/stubble should be flush with the grade whenever possible, but not more than three inches above ground.

## **Section 4 RIGHT-OF-WAY CLEARING/RECLEARING PROCEDURES**

### **4.1 General**

All right of way clearing should be preceded by approximately 30 days' notice of the CVEA or contractor readiness to commence work on a given circuit. This allows time to complete contracts and send out a letter of notification to active CVEA members based on billing records approximately 14 days prior to work commencement. This notification will be done by CVEA. Note that property owners who are not members of the Cooperative will not receive any notification. It will be the final responsibility of the contractor to practice due diligence in contacting member and non-member property owners before work is initiated where there is a significant number of removals and/or accessing property concerns.

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Mowing Maintenance and/ or sky trimming will be required to maintain all rights of way to CVEA's specification where a specified or desired right-of-way width will be established, reestablished, or maintained.

Work should be conducted in a manner such that all phases of the clearing and/or re-clearing work should progress concurrently, (*i.e.*, cutting, disposal, and final cleanup). Line clearing should start at the origin of the substation feeder and move toward the end of the line unless agreed otherwise by CVEA.

Contractor foreperson is expected email ([HydroOpr@CVEA.org](mailto:HydroOpr@CVEA.org)) and/or call CVEA dispatch (1-907-835-5279) with the location of their crews daily by 8:30 am to keep communications open for dispatching outages and the safety of contractor crews. The Contractor should notify CVEA of any work scheduled on Saturday, Sunday, holidays, or hours outside of CVEA's normal hours of operations, and is subject to approval by the authorized CVEA representative. Crews starting and quitting times shall be determined by the Contractor subject to approval by the authorized CVEA representative. In the event the Contractor plans to deviate from the normal work schedule (*i.e.*, leaving the job or starting location due to inclement weather or other cause), the foreperson and or supervisor is asked to email and/or call into CVEA Dispatch giving notification.

The Contractor shall make all necessary arrangements for crew starting points and garaging of equipment and shall be responsible for associated costs. CVEA properties will not be made available for the Contractor for crew starting points or for storing/garaging tools or equipment, unless authorized by the CVEA representative, but under no circumstances will CVEA or its insurers be responsible for lost, stolen, or damaged equipment of the Contractor.

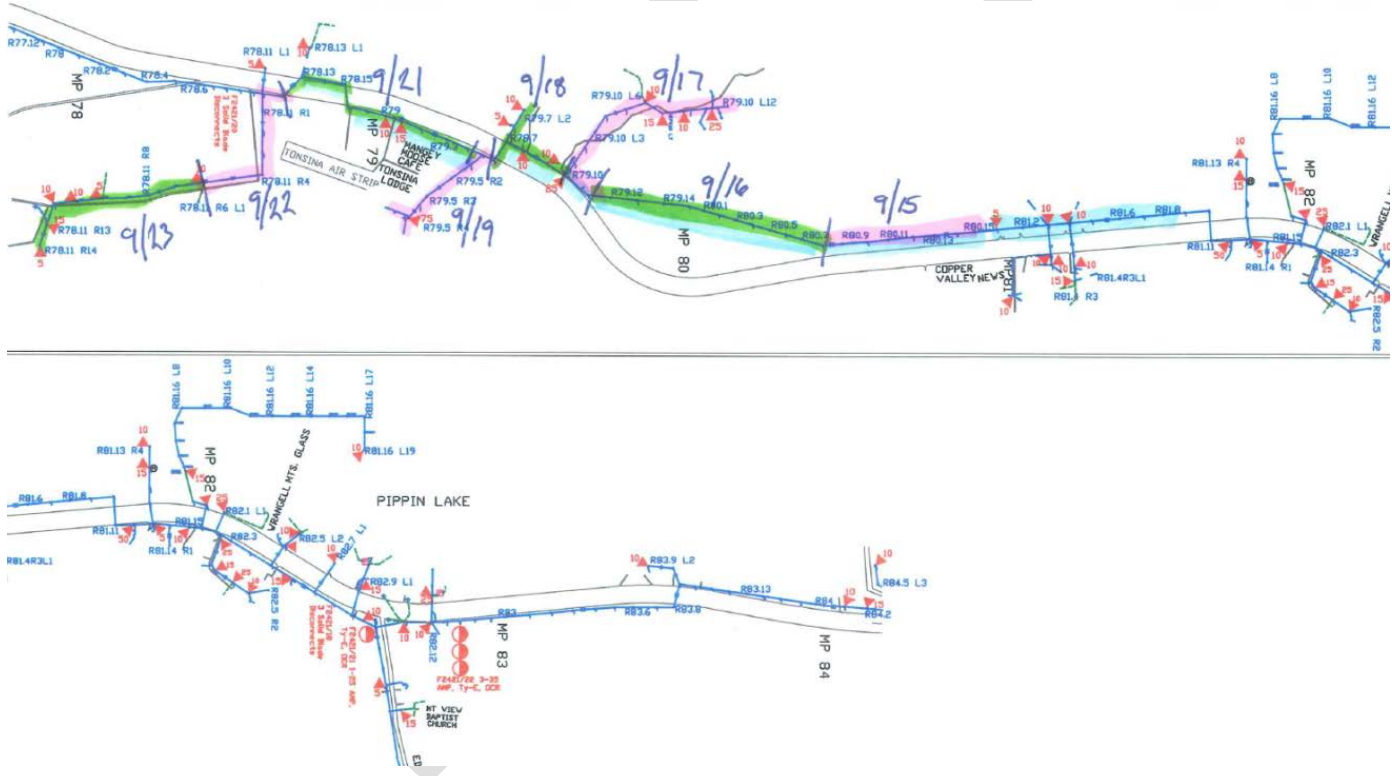
The Contractor is responsible to ensure line clearance work is carried out on the proper project. Work performed on the wrong project will result in no payment for any work performed at those locations. To account for mapping inaccuracies all overhead and underground lines will be run out (by the Contractor) in their entirety to ensure all primary and secondary conductors have been cleared to CVEA standards.

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An adequate number of copies of each circuit map will be supplied by CVEA to the Contractor to distribute as they see fit to their crew forepersons. These maps are to be marked (hi-lighted) with each day's completion of work to indicate the progress of the crews as indicated below. The contractor will keep the CVEA representative up to date on a weekly basis of the progress. In addition to marking daily progress the maps should be highlighted with areas on our system that an invasive species was identified. A copy of this map and log will be returned to the designated CVEA representative at the completion of work so pertinent information can be entered into CVEA mapping system for future record.

Colors will be -

- Fecon/Hand clearing - separate days with **Green** and **Pink**
- SkyTrim clearing – **Blue** and separate days with a line



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Complaints from members on the performance of work will be directed to the Director of Operations to resolve.

Upon completion of a substation circuit the contractor will notify the cooperative to field check the standard of work. If standards are not sufficient, the contractor shall correct the areas of concern. Contractual agreements will determine how costs are covered for such work.

- 4.2 Definitions: The following definitions apply to this section and all other sections unless otherwise noted.

Maintained Area: a plot of land where a landowner has dedicated time and incurred expense to landscape, consistently tend to, and mow grass to an even height to establish a yard or yard like area as determined by CVEA.

Right-of-Way, the space that has typically been cleared to the width specification on either side of a primary conductor from ground to sky with exceptions in maintained lawn areas, wetlands, dwellings, or businesses including the main driveway entrances. Sometimes referred to as R/W or ROW.

Primary Conductor: Bare and/or coated copper and aluminum wire supported by structures energized at 7,200 or 14,400 volts measured phase to ground and 12,470 or 24,940 volts measured phase to phase.

Secondary Conductor: Covered duplex, triplex, and quadruplex overhead conductors and/or uncovered open ACSR and copper conductors supported by structures energized at 600 volts or less. Typically located between a transformer mounted on a pole and the service (meter location).

Slash: Cut limbs, branches, and/or logs.

- 4.3 Options for Refusals/Reluctance to Yield Right-of-Way

Locations:

Options to modify right-of-way clearing may be offered to individual members or groups of adjacent members that object to clearing according to the standards indicated by these guidelines. In providing these options, CVEA seeks to enable individual members to choose methods for right-of-way clearance that best address their concerns while preventing the burden of costs for use of non- standard procedures from being placed upon other CVEA members. If a landowner inquiry about a line reroute/conversion, they should be referred to the Operations department to schedule a meeting with a CVEA Staking Technician. When possible, the Contractor shall obtain member contact information and forward to the CVEA Staking Technician to follow up on the request. The CVEA Director of Operations shall be kept abreast of all these situations. Any quotes to relocate or bury the line



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may include the contractor estimated cost to clear said section of line as a credit.

Because of varying site conditions, not all options will be offered in all locations. Options that may be available for a particular site include:

### *Relocation of lines:*

Where consistent with CVEA standards for line maintenance/improvement, rerouting of lines or moving lines underground at the member's expense will be considered. Rerouting must follow CVEA guidelines, and accessibility to the lines must be at least as good as the original location. In locations where groups of members must agree to rerouting, it is the responsibility of interested members to negotiate agreement with adjacent members and obtain necessary easements before rerouting can proceed. If such agreement cannot be obtained within a time frame specified by CVEA, right-of-way clearing will proceed unless other options are negotiated individually with CVEA.

### *Transplanting/replacement of trees/shrubs:*

Subject to agreement with the landowner, CVEA may assume or share reasonable costs for replacement or transplantation of trees/shrubs. Replacement of trees/shrubs will be limited to landscape trees. Trees/shrubs must be replaced with an approved species planted at an appropriate distance from lines and members are responsible for their care. *Note:* Diagrams 4 & 5. CVEA reserves the right to limit quantities of replacement trees/shrubs.

## **4.4 Right-of-Way Width**

Single phase primary and secondary lines (unless cross-arm construction) will be 20-foot width (10 foot either side of the pole). Three phase primary lines will be 30-foot width (15 foot from the pole). Refer to Diagrams 2 through 5.

## **4.5 Mechanical Clearing and Re-clearing**

Clearing and re-clearing work will be permitted by mechanical operations. Where the use of pruning machines is approved by CVEA, it is preferred stubs of not more than six inches in length or a branch collar cut be made on any tree four inch in diameter or larger. Should 1/3 or more of the tree's live crown area need to be reduced or removed to achieve the required clearances, the crew should attempt to remove rather than trim. When the tree's shape and appearance deviate from what is generally normal, the tree should be considered for removal. Exceptions will vary depending on member's requests, logistics of cutting the trees, and overall resulting appearance of the tree in relation to the rest of the right-of-way work. After any mechanical operation, restore the land to the natural contour existing prior to the start of the work.

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### 4.7 Primary Line Rights-of-Way

The crew or contractor should meet the required right-of-way width in designated areas by removing and/or trimming trees and other woody vegetation all diameter breast height (dbh) classes. All trimming on *primary line right-of-way* boundaries should be ground to sky at a width identified in section 4.4. If CVEA or the contractor can obtain permission to prune wider than the allowed width, this shall be noted on the circuit map. If the crown of a tree or any branches are within the right-of-way boundaries, even though the base of said tree is outside of right-of-way boundary, this tree will be considered as part of the Bid Project and should be removed or trimmed to meet the guidelines. All low growth vegetation shall be cleared with exceptions only made in maintained areas. The contractor shall also attempt to get permission to clear newly exposed fast-growing vegetation to 15 feet horizontal clearance. Refer to Diagrams 2 through 5.

### 4.8 Secondary Lines Rights-of-Way

Secondary circuits are to be cleared to CVEA standards during the normal clearing cycles as well as the Hazard Tree Cycle. Secondary circuits include all rights-of-way between the CVEA-owned transformer poles and poles fed from underground secondary to the service meter. It is the responsibility of the Contractor to insure at least 10 foot of clearance, from center, in all directions is maintained on secondary circuits. All limbs, branches, and trees within 10 feet of a secondary conductor should be removed.

### 4.9 Exceptions

As designated by CVEA Director of Operations and/or Contractor: Large mature trees, slowing growing species, certain fruit bearing trees, and acceptable tree species planted for wind breaks within the ROW may not require removal. Exceptions to tree removals along primary and secondary line will take into consideration:

- Tree species
- Expected growth rate of the tree.
- Current size of the tree
- General health of the tree
- Existing clearance from the conductor
- Determination of safe clearances that be maintained from the conductor(s) throughout the 5-year cycle.

### 4.10 Member Requested Tree Trimming (Danger Trees)

4.10.1 When a member calls in a Trim Trees service order should be created. If the request is to have a tree removed and/or trimmed the member must mark the tree(s) to be cut and provide a daytime contact number. Dispatch should

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resource service orders made by the CSR to the appropriate Operations Supervisor for trees not related to the current trimming or R/W contractor work. If the trees are related to the current right-of-way work, then CVEA dispatch should resource the service order to the Line Superintendent to follow up on. The CVEA Representative will visit the site and decide on an appropriate action. If CVEA representative is unable to contact member as to what work will or will not be done, a door knocker will be left with that information.

- 4.10.2 Requests impacting *primary conductors* – If tree is within ROW guidelines of pole/wire and or leaning significantly towards the line, CVEA may schedule it in the current year tree cycle. The Dead Tree and R/W clearing cycles should be reviewed to determine the most cost-effective manner for tree removal. If it is determined the tree(s) is (are) an imminent hazard to the line, then it should be removed within 45 days. If the tree is outside of the *right-of-way* guidelines and not a hazard tree, CVEA will not remove.
- 4.10.3 Requests impacting *secondary conductors* – If tree(s) are within 10 feet of the secondary conductor, poles or leaning significantly towards the line, CVEA may schedule it in the current year tree cycle. The Dead Tree and R/W clearing cycles should be reviewed to determine the most cost-effective manner for tree removal. If it is determined the tree(s) is (are) an imminent hazard to the line, then it should be removed with 45 days. If the tree is outside of the secondary conductor guidelines and not a hazard tree, CVEA will not remove.
- 4.10.4 In the event that CVEA is not going to cut the trees, CVEA will not recommend any business entity to cut trees. The member will be advised to check advertising resources, ask for references and proof of insurance or bonding. If the member asks our Contractors to perform the work, such work should not be done during CVEA normal business hours, and CVEA will not accept any responsibility for such work.
- 4.10.5 Tree work deferred until future clearing cycles should be forwarded to the Line Superintendent. The service order along with all pertinent information, pictures, and map are to be filed until that specific cycle comes up for completion. Document information in CIS to avoid any confusion as to expectations in the future and where in the work flow the service order currently stands. When the cycle comes up for completion, the Operations Coordinator compiles all related service orders, maps, etc. related to the circuit for the Director of Operations review and assignment to R/W Contractor. As the Contractor completes the work, they should notify the Operations Coordinator to close out the service order with any pertinent information. The paperwork is forwarded to the Operations Coordinator to file / scan in as needed for records.
- 4.11 Overhead Guy Stubs - Clear a five-foot radius around stub guy pole(s)
- 4.12 Anchors – Clear a five-foot radius around anchor(s) and guy wires and remove any hazard trees that could fall and hit anchors and guy wires.

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- 4.12 Poles – All vegetation should be cleared around poles. Other vegetation (shrubs, etc.) should be cleared a minimum five-foot radius around the pole in *maintained areas*.
- 4.13 Primary Underground Equipment – Clear a 10-foot area in front of the equipment opening, and 4 feet to the sides, and to a height of seven feet.

### **Section 5 Notification / Authorization to Trim or Remove Trees**

- 5.1 CVEA will send out a letter of notification to active members for the Right-of-Way Management cycle circuits. CVEA will not send out notifications for Dead Tree Clearing cycle circuits. CVEA will attempt to make all arrangements with the members for work to be performed on rights-of-way, and provide a Line Clearance Release, service order, and map for non-cycle related work and member requested work unrelated to the cycle work. In addition, when the clearing work is performed in-house, CVEA will provide in person notice the day before and will leave a door knocker if contact is not made.

If CVEA is unable to provide such paperwork, the contractor should ensure that members have been notified of the intent to conduct the required right-of-way clearing work for major trimming and removals only. In the event the contractor is unable to contact the member, document communication attempts and take photographs before and after work is completed. Contractors should contact members at least five working days before performing clearing activities. Any line clearance work to be done without proper notification must be approved by CVEA in advance. *Exception:* During Outage/Storm restoration, contacts will not be required to get the area cleared and made safe to restore power.

CVEA should receive approximately 30-days' notice from the Contractor requesting that contracts be signed, and notification postcards be sent to active members affected by right-of-way maintenance activities. Notification post cards will be sent out by CVEA approximately two weeks prior to work commencement. All light trimming considered to be routine maintenance will

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be performed without further notification or delay. Sample notifications are shown on page 44.

- 5.2 Verbal notification of the property owner for right of way maintenance work is sufficient. Any trees marked for removal by CVEA or Contractor should be marked with red or orange ribbon and/or paint. If the member is not home, an CVEA provided notification card (door knocker) may be left on the door. Notification cards shall not be placed in any U.S. mailboxes. Notification cards should only be used where the owner is likely to be present on site on a regular basis.
- 5.3 In the case of industrial, municipal, borough, state, or large private estate properties, the caretakers or other designated individual in the employ of the owners who is responsible for the trees or brush to be cut or trimmed is considered to represent the interest of the owner. Notification of such caretakers or grounds maintenance supervisors is acceptable.
- 5.4 Contractor should maintain a written log, of member contacts and/or refusals by personal contact. The log should include a record of the date, party contacted, address, any agreements entered or understanding reached, and any follow-up conducted. This log shall be turned into CVEA at the completion of the cycle work so records can be maintained for future cycles.
- 5.5 If CVEA crew and/or Contractor is approached by a member any time during the performance of their work refusing to allow the required trimming/clearing activities to/on their property or a specific tree(s), area(s), and or shrub(s), CVEA crew and/or Contractor should honor the request and notify the CVEA Director of Operations. CVEA crews and/or Contractors will practice due diligence regarding resolving all refusals before notifying CVEA Director of Operations.
- 5.6 If landowner refuses access to CVEA Rights of Way, CVEA crew and/or Contractor should notify CVEA Director of Operations. CVEA crews and/or Contractors will practice due diligence regarding resolving all refusals before notifying CVEA Director of Operations.

### **Section 6 TRIMMING METHODS AND PROCEDURES**

- 6.1 Tree trimming may be required where limbs of trees outside the clearing limits encroach on the right-of-way. Trimming should be performed as follows:
  - 6.1.1 Trim trees to provide maximum clearance per this document from CVEA's facilities, consistent with current easement and/or guideline requirement.

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- 6.1.2 Re-establish or improve the clearance provided from all previous tree maintenance performed.
- 6.1.3 Techniques consistent with the practices of natural, lateral and drop crotch trimming should be utilized. Drop crotch pruning consists of reducing tops, sides, or individual limbs, and avoids cutting back to small suckers. Directional pruning or trimming should be used to direct or train future tree growth or sprouting away from the wires.
- 6.1.4 Cuts should be made immediately above lateral branches, which are no smaller in diameter than one-third the diameter of the branches being cut. The Shigo<sup>1</sup> method of making flush cuts to the parent stem, limb, or trunk, without cutting into the branch collar or leaving any protruding stubs should be used. All trees requiring trimming will be trimmed at the edge of the clearing limits, unless otherwise agreed to with consent from the member and/or landowner.
- 6.1.5 The practices of “shearing,” “flat-topping,” “pollarding,” and “rounding over” should be avoided whenever possible. Stubs not to exceed six inches length should only be permitted where use of mechanical equipment having limited clearances is used.
- 6.1.6 Where practical, cuts should primarily be restricted to large diameter branches made well within the crown. Shaping using many cuts of small diameter branches in the outer crown should be avoided.
- 6.1.7 Branch and topping cuts are to be made outside the branch bark collar leaving as small a stub as possible, in a manner consistent with natural target trimming techniques.
- 6.1.8 Tree trimming required on coniferous trees (spruce, etc.), along the established tree edge should involve the removal and/or trimming of limbs that are encroaching the right of way. Removal of the limbs should be back to the main stem, trunk, and/or to suitable live lateral branch.
- 6.1.9 The pruning work should preserve, where possible, the natural form of the tree, typical to the species. Spruce trees should be trimmed in a manner that allows them to retain as much of their natural shape as possible.

*NOTE: Should **one-third or more** of the tree’s live crown area need to be reduced or removed to achieve the required clearances, attempt to remove rather than trim. When the tree’s shape and appearance deviate*

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<sup>1</sup> Pruning Trees near Electric/Utility Lines, by Dr. Alex L. Shigo.

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*from what is generally normal, the tree should be considered for removal.*

- 6.1.10 Large diameter limbs should be removed with proper sequence and placement of saw cuts to prevent stripping or tearing down of bark from the remaining limb or trunk.
- 6.1.11 All slash (branches, limbs, and tops) which hang up in the tree(s) being pruned or in adjacent trees will be removed before moving from the work site.
- 6.2.1 Cycle buster trees. Some fast-growing tree species are considered a “Cycle Buster” tree when found in our rights-of-way. A cycle buster tree by its location in relation to the power line may cause problems even with frequent trimming to keep its growth in check.

The following fast growing tree species are Cycle Busters:

- ◆ Willows (Salix species)
- ◆ Water sprouts on any species.

This list, while it is not all inclusive, is intended to serve as a guide of the most common fast-growing trees in our area that can be considered as cycle buster trees.

- 6.2.2 Those tree species considered “Cycle Busters” should be identified by the CVEA or Contractor. **All attempts should be made to work with the member to remove the tree.** If removal is not an option for the member, trim the tree beyond specification to allow for adequate clearance throughout the 5-year cycle. Record all cycle buster trees, the tree species, the electric meter number and/or address where these trees are found and report this information to the CVEA Operations Manager at the completion of the circuit by marking information on the Member Contact Daily Log Sheet (Exhibit B).

## Section 7 Additional Topics related to Rights of Way Clearing

### 7.1 Clean-up and Disposal Procedures and Methods

As the work progresses, all equipment should be removed from the work site and the work area should be left in a neat, presentable condition. Ruts caused by equipment should be filled immediately and seeded if appropriate. Dispose of all such material in accordance with applicable laws, rules, ordinances, and regulations and in accordance with the desire of the member, occupants and/or CVEA, and at such times and in such a manner as to prevent injury to persons or property.

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All trees, brush, slash, and other debris should be disposed of in accordance with the procedures and methods outlined below. All tree and brush species within the required right-of-way width should be cut, leaving a stump three inches or less in height, or flush with the grade whenever possible. Stumps will be defined as all manually cut stumps from trees that are measured at four inches dbh (diameter breast height; 4.5 feet above the ground). Exceptions are to be directed to the CVEA Director of Operations and/or his or her designee.

### **7.1.1 Unmaintained Areas**

#### **a. Chipping/Grinding/Mechanical Mowing**

Where practical all cut material (slash) including tops and stem wood less than four inches in diameter should be chipped and/or mowed. Resulting debris may be blown onto the site with permission from the member. Resulting debris should not accumulate to depths greater than six inches. Chipping and/or mechanical mowing should be accomplished in such a manner that no wood material will enter any open water, accumulate in existing tree branches, or bury desirable low-growing trees/shrubs. Slash and/or chips must not be moved from the work site if they are likely to be infested with an epidemic-causing disease or insect pest and/or are listed as an invasive species by the Alaska Department of Natural Resources.

#### **b. Piling, Lopping and Scattering of Slash**

In areas approved by CVEA or the landowner, piling, lopping, and scattering of slash and brush may be accomplished such that all material should not exceed three feet in height. The method of disposal should be limited to the outer limits of the right-of-way. In such areas, all logs should be neatly piled parallel along the edge of the right-of-way opposite the roadside wherever possible. Wind-rowing of small diameter vegetation should be permitted in or adjacent to wooded areas, with permission of the member. Logs must not be moved from the work site if they are likely to be infested with an epidemic-causing disease or insect pest and/or are listed as an invasive species by the Alaska Department of Natural Resources.

#### **c. Timber**

All merchantable timber from trees to be salvaged should be trimmed flush to the trunk and neatly piled parallel along the edge of the right-of-way, opposite the roadside wherever possible, in lengths as long as possible or as specified otherwise by the member.

Log piles should not exceed 5 feet in height and should be placed parallel along an outer edge of the right-of-way. At no time will log piles obstruct trails, access roads, the general construction area, or be piled up against



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standing trees on the edge of the right-of-way.

All slash (branches, limbs, and tops) that hang up in the tree(s) being trimmed or in adjacent trees are to be removed before moving from current work site.

Brush and low growing vegetation within the right of way should be completely removed.

### **7.1.2 Maintained Areas**

All cut material/debris (slash) should be removed from right-of-way. Large limb wood and trunk wood should be piled neatly at base of tree and/or relocated to edge of property closest to where tree is cut. Rake the area when appropriate to clean up all left-over debris.

The work site should be cleared of all slash and debris upon completion of work daily. Slash, chips, and/or logs must not be moved from the work site if they are likely to be infested with an epidemic-causing disease or insect pest and/or are listed as an invasive species by the Alaska Department of Natural Resources.

All slash (branches, limbs, and tops) that hang up in the tree(s) being trimmed or in adjacent trees must be removed before moving from current work site.

Brush, and/or trees growing immediately adjacent to poles should be cut and removed to maintain at least 5 feet of clearance.

## **Section 8 Performance and Safety Expectations**

- 9.1 The Contractor shall obtain full information from CVEA as to the voltage of its circuits before starting the various parts of the work.
- 9.2 The Contractor shall at all times conduct the work in a manner as to safeguard the public from injury to persons or property.
- 9.3 The Contractor shall use all necessary protection for its employees and to guard against interference with the normal operation of the circuits. If, in the judgment of the Contractor's General Foreperson/Supervisor, it is hazardous to trim or remove trees with the circuits energized, the CVEA Director of Operations and/or his or her designee shall be contacted. If deemed appropriate, CVEA linemen will be used to remove the danger tree.
- 9.4 Should the Contractor knock down or make contact with CVEA's conductors, CVEA's dispatch must be notified immediately. Content of information should include location, time, if there are any injuries, and extent of damages. The following telephone number shall be used:

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CVEA Dispatch – 907-835-5279

- 9.5 Contractor shall at all times take all reasonable precautions for the safety of employees on the work and of the public by utilizing safety equipment and methods in accordance with the manufacturer's specifications.
- 9.6 At all times Contractor employees shall hold themselves to highest standard of performance regarding safety, member-service, professionalism, and ethical conduct.
- 9.7 Contractor employees shall wear logo clothing that is always visible during the process of notification and work along rights-of-way. Contractor employees and equipment should always present a professional appearance. Under no condition should an CVEA or Contractor employee be shirtless.
- 9.8 Contractor should follow guidelines set forth in ANSI Z133-2012 as standard operating practices for Arboricultural Operations Safety Requirements and/or similar guidelines.
- 9.9 Contractors are expected to follow the rules and regulations of the Alaska Department of Transportation while working for CVEA along all roads, i.e. State, Borough, and Township.

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**Exhibit A – Right-of-Way Schedules (listed by Feeder)**

<b>ROW Clearing Schedule</b>											
2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
G2421	G421 G423	G425 Heiden View	G422	AC431 S413 S414	M424	V322	V324 G2421	V323 G421 G423	G425 Heiden View	G422	AC431 S413 S414

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**Exhibit C**

**Table 1. Hazard tree defect categories and a description of high risks within each category.**

<b>DEFECT</b>	<b>DESCRIPTION</b>	<b>HIGH RISK POTENTIAL</b>
<b>Dead Wood</b> 	Dead trees or portions of trees are structurally unsound and their time of failure is unpredictable.	Any dead tree, dead branch, dead top or lodged branch.
<b>Cracks</b> 	A split through the bark, extending into the wood. Wood fibers are not fused. Cracked stems or branches cause the affected area to act as 2 or more separate beams, weakening mechanical support.	<ol style="list-style-type: none"> <li>1. Crack goes completely through a stem or is &gt; 6' long.</li> <li>2. Two cracks occur on the same stem segment.</li> <li>3. The stem has a crack in contact with another defect such as decay, a canker or weak union.</li> <li>4. A cracked branch</li> </ol>
<b>Decay</b> 	Wood that is missing or structurally compromised.	<ol style="list-style-type: none"> <li>1. Decayed wood or cavity affects ½ or more of the stem's circumference.</li> <li>2. There is less than 1" of sound wood for every 6" in stem diameter.</li> <li>3. Any tree infected with a canker-rot fungus.</li> </ol>
<b>Weak Union</b> 	Union with ingrown bark between stems; wood fibers are not fused. Weak unions are characterized by an acute angle between stems.	Tight union that is either cracked or decayed or associated with another defect.
<b>Canker</b> 	Localized area of dead bark and cambium; wood behind canker may or may not be decayed. Commonly caused by fungi or mechanical injury.	Canker affects ½ or more than the stem's circumference.
<b>Poor Architecture</b> 	A growth pattern or structural imbalance that causes a weakness.	<ol style="list-style-type: none"> <li>1. Structural imbalance associated with a weakness (typically decay).</li> <li>2. Tree with an excessive lean (&gt;45°).</li> <li>3. Large defective branches. Defect may include sharp bend or twist or inrolled bark.</li> </ol>
<b>Root Defects</b> 	Loss of structural support due to root rot, wounding, severing or any other factors that causes root mortality.	<ol style="list-style-type: none"> <li>1. More than 45% of roots severed or otherwise compromised.</li> <li>2. Leaning tree with recent root lifting.</li> </ol>

# Copper Valley Electric Association Guidelines and Best Management Practices for Right of Way Management

## **Exhibit C**

**Table 2**

### **Hazard trees**

Hazard trees are trees that can be dangerous because of the possibility of them falling over or breaking and dropping large branches to the ground. Most trees are considered hazard trees if they are dead and over an area where there are people or property. Some trees are more hazardous than others though, even when they are alive, because of the type of soil they grow in or because they are easily attacked by fungus or insects.

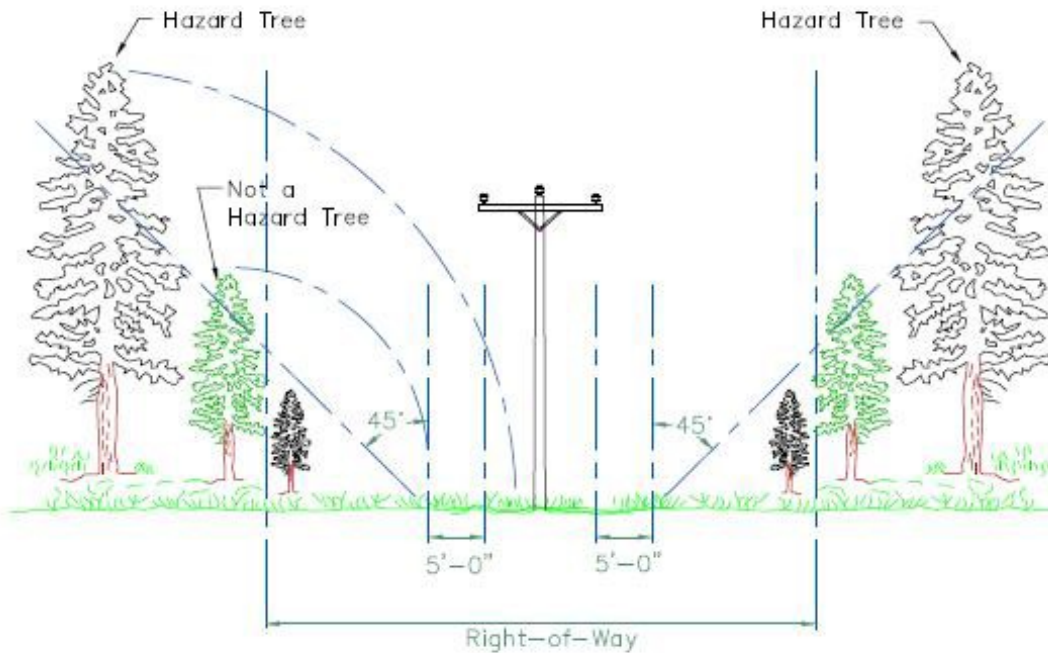
Tree Species(Average life expectancy, yrs.)	Defects
Ash (black)	Weak unions Uprooting – black ash is most abundant in moist locations and along low banks of streams where uprooting is more likely to occur.
Ash (green & white)	Weak unions Dead branches in the upper and outer crown.
Aspen (big-toothed and quaking) (60-90)	Extensive decay from canker-rot <i>Phellinus tremulae</i> . Stem breakage due to infection by <i>Hypoxylon</i> and other cankers. Rapid decay. <sup>1</sup>
Basswood (150-200)	Weak unions from both branch unions and stump sprouts.
Birch (white & yellow) (white – 70-110) (yellow – 150-250)	Extensive decay from canker-rot <i>Inonotus obliquus</i> . Stem breakage due to the presence of <i>Nectria</i> canker. Rapid decay.
Box Elder	Weak unions
Butternut	Branch breakage due to the presence of butternut canker.
Cherry (black) (120-150)	Dead branches throughout crown.
Cottonwood (eastern)	Dead branches throughout crown. Rapid decay.
Fir (balsam) (70-100)	Uprooting or lower stem breakage may occur as a result of root rot or decay of the root collar region. Balsam fir frequently has a shallow root system. Rapid decay.
Maple (red & sugar) (red – 80-140) (sugar – 150-250)	Weak unions. Dead branches. Stem breakage due to the presence of <i>Eutypella</i> and <i>Nectria</i> cankers. Cracks.
Oak (black & northern pin) (black – 150-200)	Extensive decay from canker-rot <i>Phellinus everhartii</i> . Weak unions. Cracks. Dead branches in lower crown from natural branch mortality and upper crown from several factors causing dieback. Dead trees may be common due to oak wilt and two-lined chestnut borer.
Oak (red)	Dead branches (see black oak). Dead trees (see black oak).
Oak (white)	Extensive decay (see black oak). Dead branches (see black oak).
Pine (jack) (60-100)	Extensive decay from canker-rot <i>Phellinus pini</i> . Rapid decay.
Pine (white) (200-300)	Extensive decay from canker-rot <i>Phellinus pini</i> . Dead branches in lower crown due to natural branch mortality. Dead tops due to presence of white pine blister rust canker.
Spruce (white & black) (white – 100-200) (black – 150 – 200)	Uprooting – particularly true on wet sites; spruces tend to be shallow rooted

<sup>1</sup> Rapid decay denotes species that are likely to decay quickly if in a state of decline from numerous other initiating factors.



## Copper Valley Electric Association Guidelines and Best Management Practices for Right of Way Management

**Diagram 1**

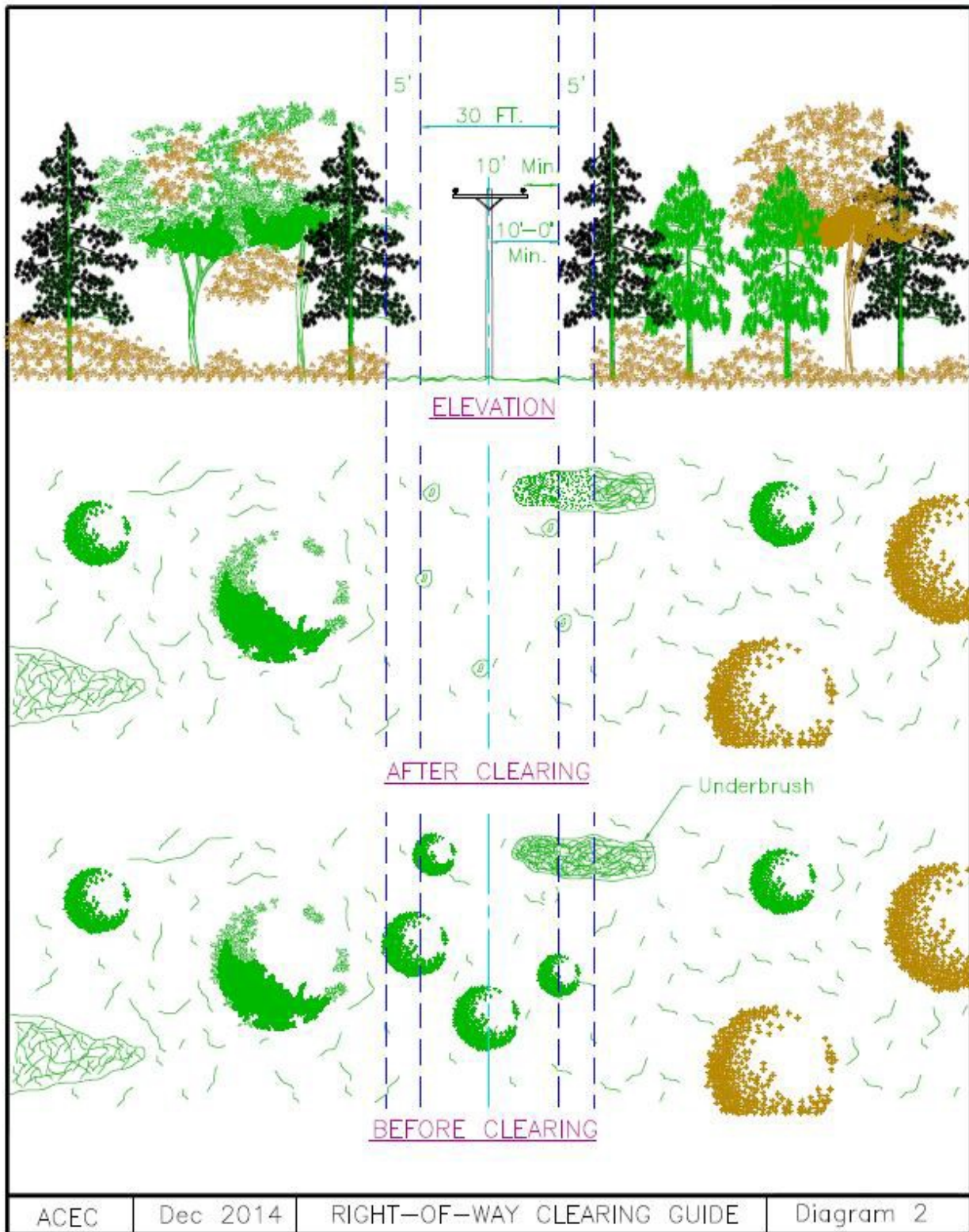


**NOTES:**

1. ACEC or Contractor will designate all hazard trees which shall be removed or topped at option of contractor. In approximately level terrain, trees which would reach within 5 feet of a point underneath the outside conductor in falling are examples of hazard trees.
2. As directed by ACEC or Contractor, portions of the right-of-way (ROW) must be cut so that stumps will not prevent the passage of tractor and trucks along the ROW.

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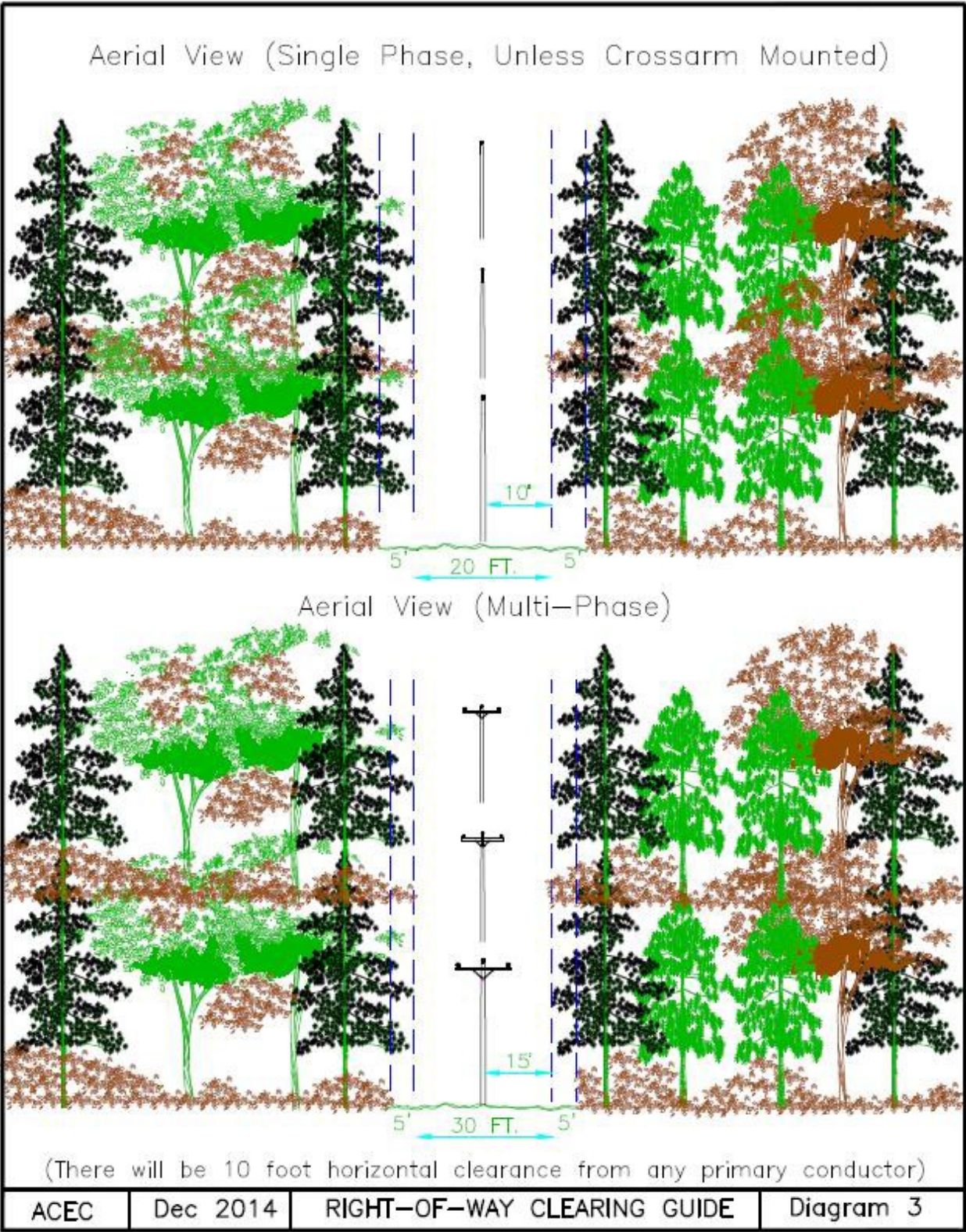
**Diagram 2**





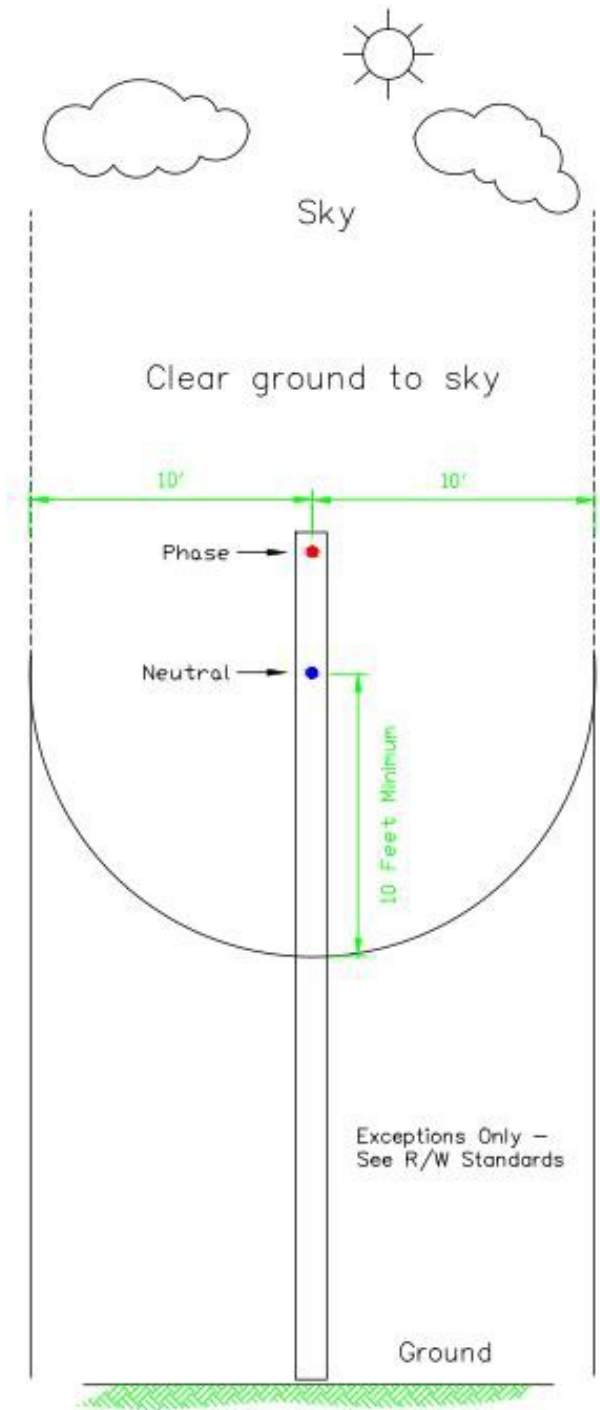
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Diagram 3



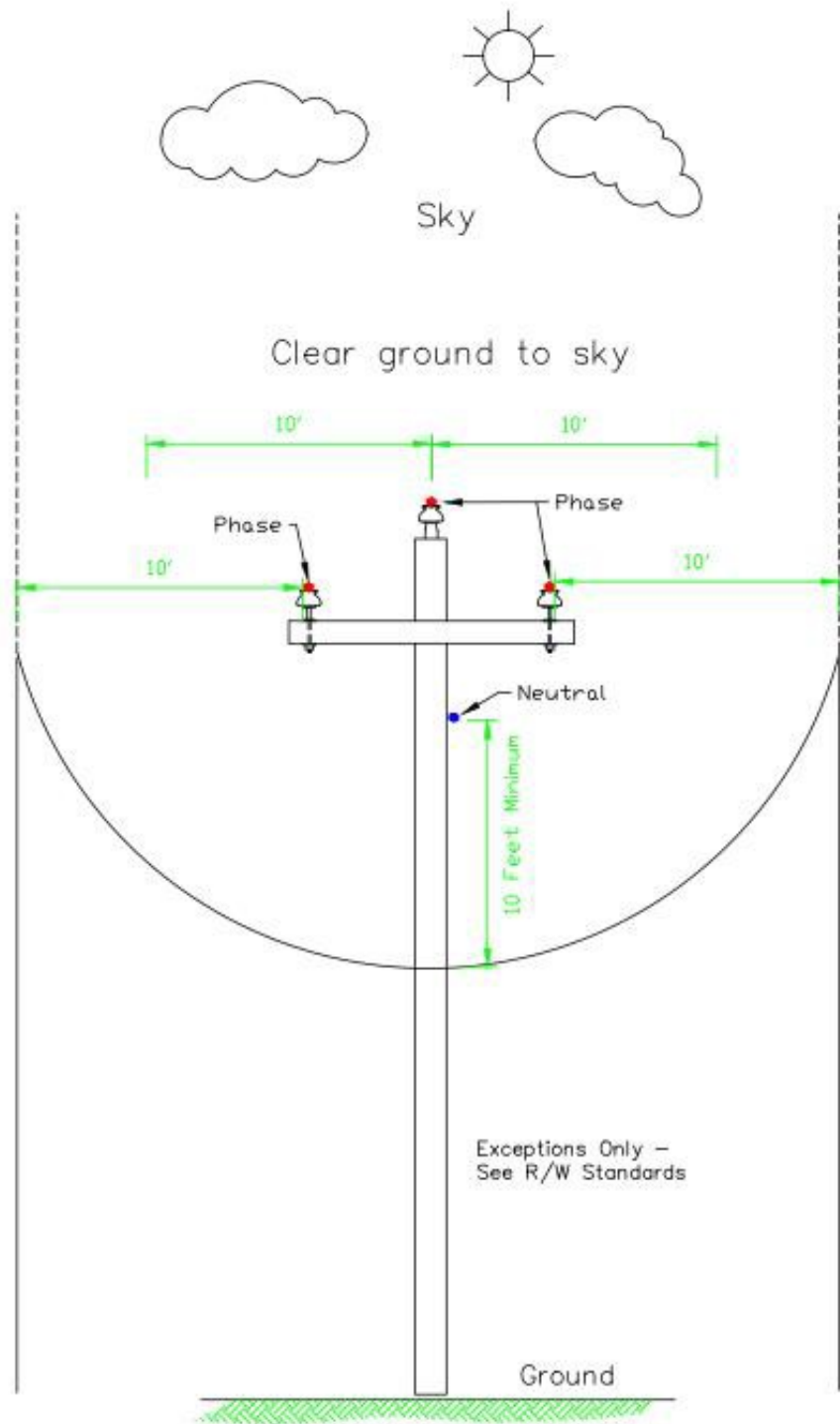
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**Diagram 4**



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**Diagram 5**



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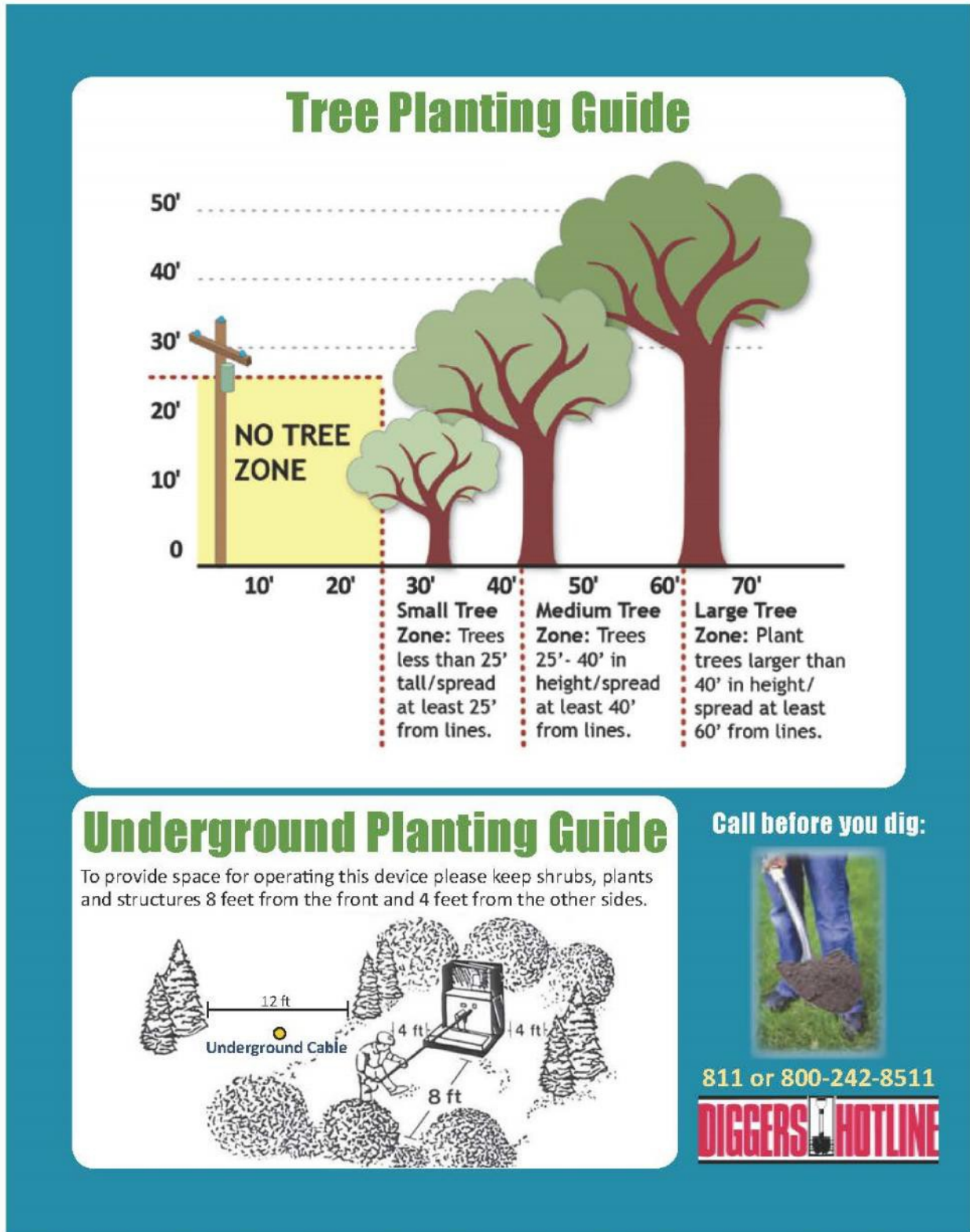
**Diagram 6**

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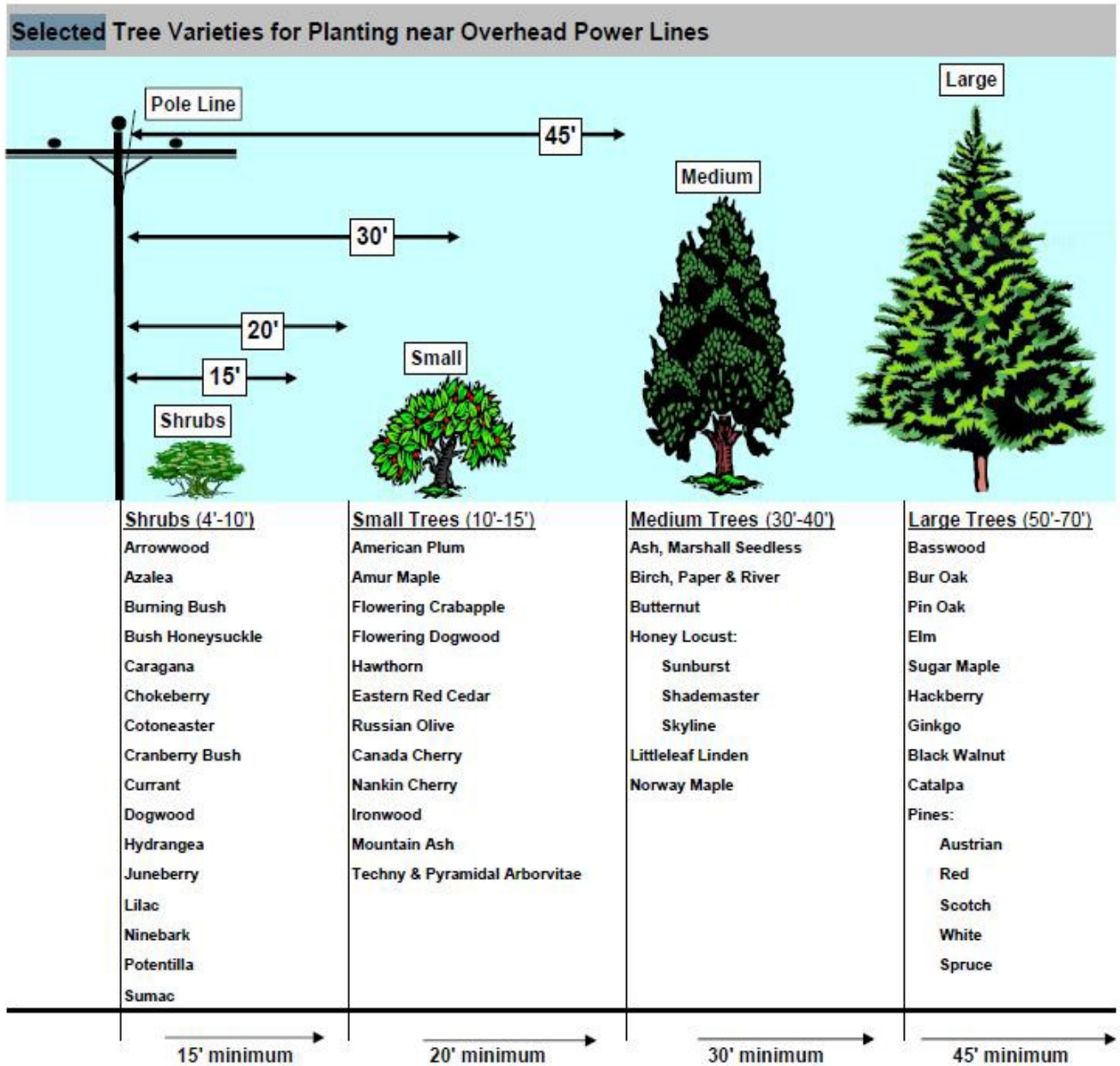
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Diagram 7



# Copper Valley Electric Association Guidelines and Best Management Practices for Right of Way Management

**Diagram 8**




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Diagram 9


All vegetation must be planted away from power lines, so that mature branches cannot grow into the right-of-way. Vegetation that is planted or grows into the right-of-way needs to be cut or trimmed. Vegetation within 10 feet on either side of the power line is at risk for removal due to power line maintenance, repair and replacement. For safe, reliable electric service, follow these guidelines:

## YARD PLANTING GUIDE



*All vegetation: trees & shrubs*  
**15-FT MINIMUM**


## RURAL PLANTING GUIDE



*All vegetation*  
**20-FT MINIMUM**      *All vegetation*  
**20-FT MINIMUM**

## UNDERGROUND PLANTING GUIDE

Because roots interfere with cables and wires, and vegetation impedes access, the required minimum planting distance from all underground power lines is 12 feet.




*All vegetation*  
**12-FT MINIMUM**

●—Underground cable

Call before you dig:  
**800-242-8511 or 811**

Also, keep areas around electric meters and green transformer boxes clear of vegetation and obstructions that could limit access for repairs.





**Copper Valley Electric Association Guidelines and Best Management Practices for  
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**COPPER VALLEY ELECTRIC ASSOCIATION  
LINE CLEARANCE RELEASE**

Substation: \_\_\_\_\_ Feeder: \_\_\_\_\_

Date: \_\_\_\_\_ Location: \_\_\_\_\_ Service Order No.: \_\_\_\_\_

The undersigned property owner has requested the assistance of Copper Valley Electric Association in the removal of portions, or all of certain trees that are in conflict with electric lines of the Cooperative.

The property owner hereby absolves the Cooperative of all claims for damage by personnel doing the work.

The property owner also acknowledges and accepts responsibility for removal of all wood and brush left after the tree or trees have been cut.

Description/Sketch of work to be done:

\_\_\_\_\_  
Property Owner's Signature

\_\_\_\_\_  
Date Signed

***CVEA Form #XXX (Revised 11/20/18)***



## Copper Valley Electric Association Guidelines and Best Management Practices for Right of Way Management

### RIGHT-OF-WAY (ROW) CLEARING NOTICE

Adams-Columbia Electric Cooperative (ACEC) works hard to keep trees around overhead power lines properly trimmed. Trees contacting overhead power lines are a safety concern and the leading cause of power outages and momentary interruptions.

*BADGER UNIFIED SERVICES* has been contracted by ACEC and will be in your area soon to clear trees and limbs too close to ACEC overhead power lines. If you do not have overhead lines on your property or along the road on your property, please disregard this notice.

All trees located beneath or within 10 feet of a high voltage power line, or 2 feet of a secondary power line (to a meter or yard light) will likely be removed or trimmed. Trees outside of the 10 foot right-of-way may be removed if: dead, dying, split, dangerously hanging over or leaning toward the wires, fast-growing, weak wooded variety or if by trimming no live limbs remain to support growth of the tree.

Crews will chip and haul away brush in mowed lawn areas and mow the brush in all other areas. When appropriate, brush will be piled along the right-of-way for wildlife habitat. Usually any logs larger than four inches in diameter are cut into eight-foot lengths and are left on the property.

If you have any questions please call a Customer Service Representative at 800-831-8629.

Thank you for your cooperation.



Dept Of Natural Resources  
PO Box 7921  
Madison, WI 53707

### RIGHT-OF-WAY VEGETATION MANAGEMENT NOTICE

In the past year Adams-Columbia Electric Cooperative trimmed or cleared trees and brush in the **overhead** power line R-O-W serving your area to improve the safety & reliability of our electrical system.

Re-growth is beginning to reappear and ACEC has chosen to use herbicide management as a safe and effective method to reduce future trimming costs and maintain system reliability for our members.

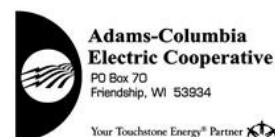
Licensed, selective herbicides are used by trained and qualified applicators. The types of herbicides used are: ELEMENT3A manufactured by Dow Agro-Sciences, ESCORT XP manufactured by DuPont, and FUSION manufactured by Cell Signaling Technology.

Our line clearing contractor *Badger Unified Cooperative Services (BUCS)* will be carefully and accurately applying herbicides to those areas in the **overhead** power line right-of-way where trees and underbrush are beginning to reappear; **outside of lawns. We are not applying herbicide to areas adjacent to waterways and where we have buried electric cable.**

*BUCS* vehicles are clearly marked and display signs provided by ACEC, upon request their employees will provide identification.

If you have any questions please call one of our Customer Service Representatives at 800-831-8629.

Thank you for your cooperation.



Alsum Produce Inc  
PO Box 188  
Friesland, WI 53935 0188

**Copper Valley Electric Association Guidelines and Best Management Practices for  
Right of Way Management**

**USDA Hazard Trees in Alaska**

Guidelines for Hazard Trees

[https://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/stelprdb5274642.pdf](https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5274642.pdf)

Hazard Tree Leaflet

[https://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/fsbdev2\\_037576.pdf](https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fsbdev2_037576.pdf)

Hazard Tree Evaluation

[https://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/stelprd3791217.pdf](https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprd3791217.pdf)