VEGETATION MANAGEMENT GUIDELINES

Effective September 1, 2022

(Subject to periodic LPEA revision)

ABOUT THE VEGETATION MANAGEMENT GUIDELINES

These guidelines apply whenever performing vegetation management services for La Plata Electric Association Inc. (LPEA) on member owned, City, County, and State properties, and Southern Ute Tribal lands where applicable. Federal lands adhere to separate Operation and Maintenance guidelines. Vegetation management includes distribution and transmission line clearance (vegetation removal, cutting, and pruning), overhead safety inspection, and landscape maintenance. Regardless of the service performed, every worksite has its own safety and work requirements.

The objective of these vegetation management guidelines are to provide safe, reliable, electric service through a cost-effective, integrated vegetation management program. These guidelines are designed to address both the minimum and optimum clearance necessary to sustain safe, reliable electric service. This information addresses procedures for LPEA employees or contractors and is not intended for use as personal safety guidelines. Contractors are responsible for developing a program and following their own safety procedures.

1. SAFETY

All personnel performing vegetation management work on or near LPEA facilities or rights of way shall follow approved safety guidelines and procedures. Contractors performing work for LPEA must comply with all applicable governmental safety and health regulations, and the safety and health provisions of their companies. A partial list of applicable legal standards and regulations are as follows:

1.1 OSHA REQUIREMENTS (1910.269) AND OTHER FEDERAL REQUIREMENTS

OHSA 1910.269 is the Occupational Safety and Health Administration's (OSHA) vertical standard pertaining to the generation, transmission and distribution of electricity. Among other things, OHSA 1910.269 requires that everyone performing tree work in proximity to electric hazards be qualified and their training be documented.

Federal agencies such the North American Electric Reliability Council require electric utilities to maintain their transmission systems in accordance with the mandatory vegetation management and maintenance standard set forth in the Energy Policy Act of 2005. These industry standards are designed to ensure safe and reliable operation of a transmission line system.

1.2 ANSI REQUIREMENTS (Z-133.1)

ANSI Z-133 is the American National Standard Institute's Standard for Safety Requirements in Arboricultural Operations, including pruning, repairing, maintaining and removing trees, and cutting brush. It has the force of law because it is the document an OSHA compliance officer would reference when identifying safety violations by employees engaged in vegetation management. Therefore, it is considered the definitive safety standard for arboricultural operations.

In short, ANSI Z-133 defines an electric hazard to exist anytime a tree worker, tool, tree or any other conductive object is closer than 10 feet from an energized conductor with a voltage of 50,000 volts or less. From this 10-foot baseline, 0.4 inches of required clearance is added for every 1,000 volts above the 50,000- volt baseline. ANSI Z-133 provides tables that outline minimum approach distances for both qualified and non-qualified tree workers based on voltage and elevation.

Contractor managers are required to provide ANSI Z-133 minimum approach distance tables to their employees.

1.3 STATE REQUIREMENTS

Colorado Revised Statutes Title 9 Safety -Industrial and Commercial, Article 2.5-High Voltage Power lines - Safety Requirements also imposes obligations with respect to vegetation management activities. Under Colorado law, only qualified employees of an electric utility can perform any activity bringing an individual or equipment within 10 feet of high voltage overhead lines (lines in excess of 600 volts). Employees and contractors working directly for the utility are considered qualified. Non-qualified employees or individuals must contact the appropriate utility to make arrangements for safe activity.

1.4 NATIONAL ELECTRIC SAFETY CODE (NESC) REQUIREMENTS

State regulatory entities (Public Utilities Commission) and federal agencies (Rural Utilities Service) require electric utilities to maintain facilities in accordance with the NESC. The NESC generally requires the removal or trimming of interfering trees.

1.5 LPEA REQUIREMENTS

All employees and contractors must be aware of the nature and characteristics of the electric facilities before work begins. Contractors will understand that the electric facilities must remain energized during the performance of work unless special arrangements are made with an authorized LPEA representative in accordance with these guidelines.

2. GENERAL LINE CLEARANCE: WHY ELECTRIC UTILITIES ARE REQUIRED TO CONDUCT VEGETATION MANAGEMENT ACTIVITIES

Trees are a major contributor to electric service interruptions nationwide. Trees cause outages in two ways: mechanical and electrical. Mechanical damage refers to entire trees or portions of trees falling and physically damaging facilities (knocking down wires, poles, etc.). Because trees can be conductive, electrical outages can also occur. These interruptions are caused when a portion of a tree becomes a short circuit path for electricity to flow, causing a protective device to operate and stop the flow of electricity. Trees must therefore be maintained an adequate distance from the conductors in an attempt to prevent interruptions of electrical service. Factors to consider in determining the extent of vegetation management required include, but are not limited to line voltage class, species growth rates and failure characteristics, right-of-way limitations, the vegetation's location in relation to the conductors, the potential combined movement of vegetation and conductors during routine winds, sagging of conductors due to elevated temperatures or icing, and the probability to reach energized lines within a five-year growth cycle.

3. VEGETATION MANAGEMENT

3.1 GENERAL PHILOSOPHY

Vegetation management is a data-driven, progressive system of information gathering utilized to best plan and complete work. It involves the use of various types of vegetation management treatments including removing, pruning, and mowing of vegetation. Emphasis shall be placed on removing trees, in or out of the right-of-way, whenever possible.

3.1.1 Work within the Right-of-Way/Easement

Transmission and distribution lines may be constructed where legal easements exist. Special conditions may apply regarding vegetation management activities in those areas. If questions arise, contact the appropriate LPEA representative at (970) 247-5786.

- Prior to entering any easement or private property for right-of-way tree removal, clearing, or trimming, the contractor, as a courtesy, will attempt face-to-face conversation with property owners by knocking on doors.
- Text or voice messages will be sent one to two weeks prior to trimmers in the area. The phone number associated with member service accounts for affected members' properties will be notified of work to be completed.
- If it is necessary to enter the property owner's land to gain access to the right-of-way, the least invasive route shall be taken. Section III.F. of LPEA's Electric

Service Regulations states the following: "Ingress and Egress on Consumer's Premises- An authorized representative or agent of the Association shall have the right of ingress and egress to and from the consumer's premises at all reasonable hours for the purpose of inspecting, testing, or changing its meters, removing its meters, wires, and appliances, obtaining correct Connected Load data, measuring demand, inspecting the character of the consumer's appliances and apparatus supplied with electricity from its system, and for the purpose of cutting, trimming, and pruning trees, brush, and shrubbery to the extent necessary to keep them clear of the Association's Distribution and Transmission System."

- If any damage to property or crops results, the contractor shall promptly contact the property owner and LPEA's designated representative.
- Exceptions may be made for certain operational and/or emergency safety issues.

3.1.2 Work outside the Right-of-Way/Easement

The contractor shall obtain a signed acknowledgement for any tree removal work done beyond the bounds of LPEA's easement or rights-of-way. (See section 7)

Exceptions may be made for certain operational and/or emergency safety issues.

3.1.3 Refusal

If clearing is necessary and the landowner refuses either access or to allow removal and/or appropriate trimming, the contractor will notify LPEA's designated representative for resolution.

3.1.4 Non-LPEA Facilities

LPEA does not purposely clear non-cooperative conductors or joint use wires, including communication cable, fiber optics, and phone wires.

3.2 TREE OF INTEREST MITIGATION

Any tree with the potential to contact an electric supply line within a five-year maintenance cycle is considered a "tree of interest." Trees of interest with an unacceptable risk of falling before the next maintenance cycle will be removed, topped, or trimmed to a point they will not be a hazard to LPEA facilities. Conditions that might indicate the presence of a tree of interest having an unacceptable risk of falling could include but are not limited to the following:

- Biological Factors
- Decay/deadwood/dead trees
- Cracks
- Weak branch unions

- Cankers/fungal bodies Environmental Factors
- Root damage, restrictions
- Changes in exposure
- Poor architecture (leaning, structural overloading, imbalance due to wounding, etc.)

3.3 WORK GUIDELINES

3.3.1 Removal

Tree removal is the selective clearing of entire trees and brush at ground level. In most cases, tree removal eliminates hazardous conditions, improves access to facilities, and reduces future work. All trees of interest inside LPEA's easement or rights-of-way are candidates for removal, and emphasis shall be placed on removing these trees rather than pruning. Trees of interest outside LPEA's easement or rights-of-way are also candidates for removal and, where appropriate and where the landowner has agreed, removal may occur. (Without landowner agreement, trimming on a five-year cycle shall occur in areas outside LPEA's easement or rights-of-way.)

Tree Removal Criteria

- "Cycle Busters"—i.e., fast- or medium-growing trees that will interfere with LPEA facilities before the next five-year maintenance cycle.
- Trees of interest within LPEA's right-of-way.
- Trees of interest outside of LPEA's right-of-way that have an unacceptable risk of falling due to biological or environmental factors.
- Trees that can't be trimmed to obtain the guideline clearance to the conductor plus the re-growth in the five-year cycle, or which require extensive drop-crotch trimming to obtain a five-year cycle.
- Trees that, after pruning, would leave less than fifty (50) percent of the remaining tree.

Generally

- Remove tall-growing trees that fit the removal criteria.
- Remove tall-growing brush that has the potential to grow into the conductor.
- Apply the "wire zone/border zone" concept to transmission and distribution electric facilities.
- All trees and brush should be cut as close to the ground as practical. Remove all second growth from stumps cut on previous pruning cycles.
- Mitigate all trees of interest, whether inside or outside of the right-of-way, that present an unacceptable risk of falling (hazard trees) and obtain proper documentation.

- Keep all poles, guy wires, and switch grates clear of vegetation (five-foot minimum).
- Trees are not removed from the vicinity of secondary, streetlight and service wires unless it is determined to be a cost-effective, long-term solution. Trees should be trimmed if limbs are distorting the path or rubbing against wires.

3.3.2 Trimming/Pruning

While keeping in mind that emphasis shall be placed on removing trees of interest inside or outside LPEA's rights-of-way, trimming/pruning is another vegetation management practice.

Tree trimming/pruning is the selective removal of branches that are not an adequate distance from the primary line, or that will grow too close to the power line before the next maintenance cycle. Secondary, streetlight and service wires are not routinely trimmed for clearance unless overbuilt primary exists. In addition, secondary or streetlight wires may be trimmed if major interference, such as a broken limb, exists.

LPEA's guideline clearance to energized distribution conductor(s) is the distance of the specific five-year regrowth rate for the species being pruned. The contractor, together with LPEA's designated representative, shall determine additional clearances required based on normal movement or sag of conductors, normal regrowth patterns and movement of vegetation, and regional fire risk factors. When limbs are growing in the direction of energized lines with a reasonable likelihood of reaching energized lines within a five-year growth cycle, the limbs should be trimmed to the LPEA average re-growth guidelines. Lesser dimensions may be acceptable when individual tree characteristics are such that growth patterns are not a threat to the conductor until the next scheduled trimming cycle. Along with the five-year re-growth rate of trees, trimming should also account for a sufficient buffer between the conductor and tree parts. The sufficient buffer will be dependent on factors such as tree species, age, location to conductor, sag factor, and estimated wind movements from the line and tree. If practical, trimming methods will be based on procedures and examples set forth by ANSI A-300.

As a general rule, trees should be pruned to improve or re-establish the clearance provided from previously performed right-of-way maintenance. Trimming/pruning should be done to remove or shorten dangerous limbs, such as those overhanging wires that have a high potential for breaking or bending into LPEA conductors due to ice, snow or wind loading.

Factors to consider when trimming/pruning include

• Tree species

• Growth rates (how fast the branches grow back)

• Wood strength (the chance of the branch breaking under the load of strong wind, snow or ice)

• Branch size (larger-diameter branches coming in contact with conductors by failure or deflection create the greatest risk for tree-related interruptions)

• Voltage conducted by the line and the line's construction (the higher the voltage, the greater the clearance required)

• Framing and spacing between phases of multi-phase lines (compact design and multi-phase lines pose higher risk to tree-related interruptions)

• Location of a tree in relationship to protective devices and critical customers on the circuit (hospitals, etc.)

• Location of a tree with respect to general public safety (existence of tree houses, public places, climb ability of tree, etc.)

• Risk of wildfire ignition

4. TRANSMISSION AND DISTRIBUTION (T & D) LINE CLEARANCE

4.1 GENERAL T & D LINE CLEARANCE GUIDELINES

LPEA maintains vegetation on 1,762 miles of overhead primary distribution and 204 miles of overhead transmission lines ranging in voltage from 7.2 kv to 115 kv.

LPEA’s clearance guidelines are based on local tree growth rates on a five-year maintenance cycle, specific to individual trees on specific circuits. Specific clearances are determined based on species growth rates, as well as line voltage, construction of facilities, electric reliability performance and other factors listed below. The primary objective of the T& D line clearance program is to keep the facilities clear of all tall-growing trees, brush and other vegetation that could grow too close to conductor on a five-year maintenance cycle. This is accomplished by routine maintenance on each circuit including tree removal, pruning and mowing. Again, emphasis shall be placed on removing trees rather than trimming/pruning. Contractors are responsible for obtaining the appropriate clearances on all facilities existing in the field.

4.2 WIRE ZONE/BORDER ZONE

Wherever feasible, the wire zone/border zone concept (Bramble and Byrnes, 2000) shall be integrated into the vegetation management program to allow for different types and heights of vegetation in the rights-of-way. This concept differentiates between the wire zone directly under the conductors and the remaining border zone. This concept allows for different, yet compatible, vegetation types in these separate zones.

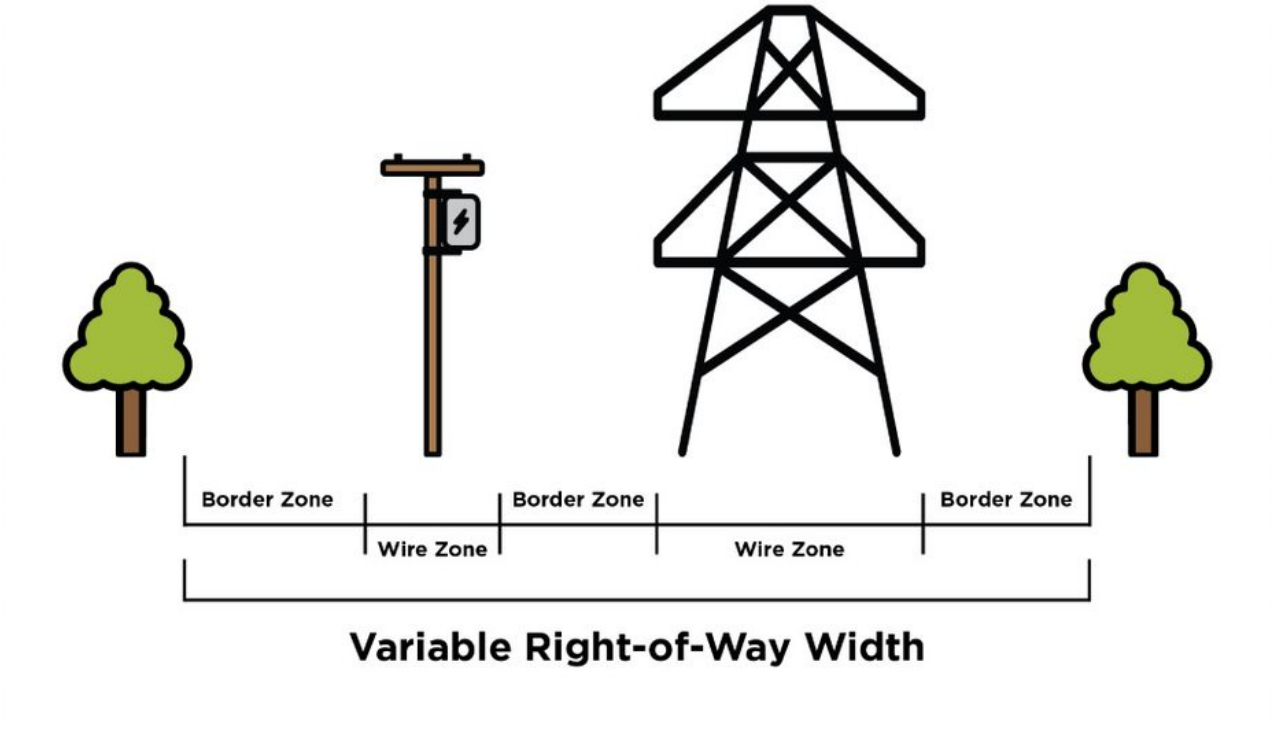
• Wire Zone: Area directly underneath the conductor(s). Vegetation in the wire zone may consist of low-growing forbs and grasses.

• Border Zone: Area that begins at the outside edge of the wire zone and extends to the edge of the easement/right-of-way. The border zone may contain additional low-growing wood plants and trees.

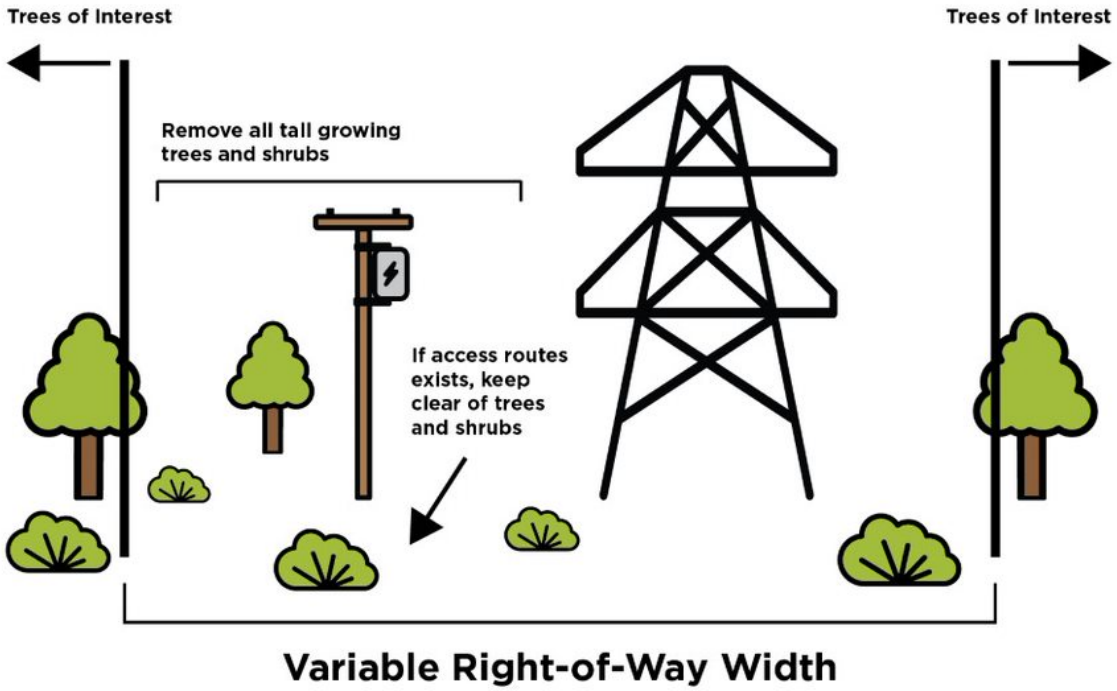
• The wire zone/border zone concept, as applied by LPEA, does not require removal of tall-growing trees if, at maximum mature height, the tree would not come within 15 feet of vertical clearance nor have the potential to fall into or overhang a conductor horizontally.

• Areas outside the border zone must be patrolled for trees of interest.

Wire Zone- Border Zone



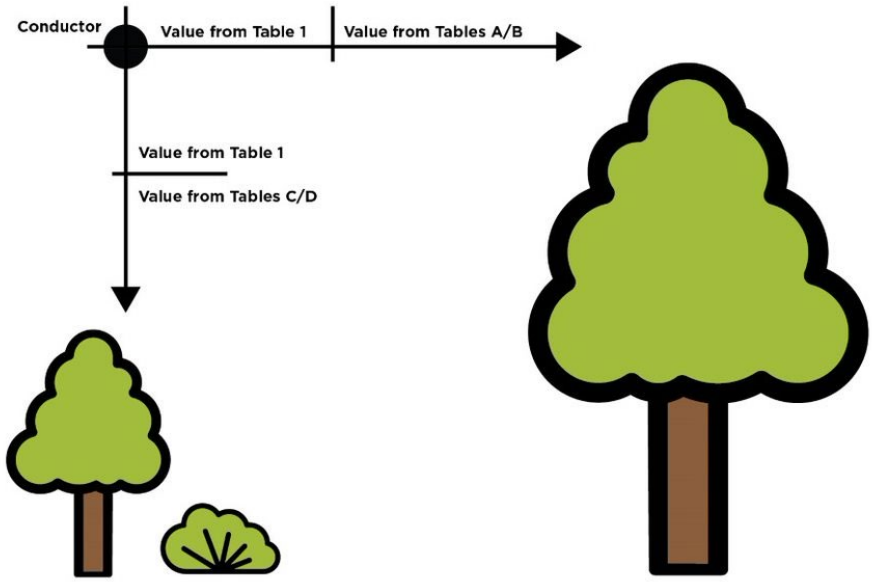
Cross-Section of Typical Transmission and Distribution Right of Way



4.3 MINIMUM CLEARANCE GUIDELINES

If for any reason, the Wire Zone/Border Zone concept cannot be achieved, the following minimum clearance guidelines are to be maintained at all times. Maintained Clearances for Trees In order to maintain these minimum clearances at all times, crews performing tree work must consider the tree species, growing environment, re-growth rate, maintenance cycle length (LPEA maintains on a five-year cycle), etc., in order to determine the amount of clearance required at the time of trimming/pruning. The following tables are provided as a guideline only. Each tree requires the evaluation of various relevant factors in order to determine specific re-growth rates.

Calculating Horizontal and Vertical Minimum Clearances



Vegetation must be trimmed to allow for the five-year growth rate, yet still maintain the minimum clearance guidelines.

Table 1	Average re-growth after trimming (Ft.)
Common Tree Species	**5 Year Average Growth**
Spruce, Douglas Fir, Ponderosa Pine	5
Aspen, Red Oak	10
Ash, Maple, Russian Olive, Box Elder	15
Locust, Cottonwood	20
Elm, Willow, Poplar	25

Table A- HORIZONTAL CLEARANCE @ LOWEST SAGGING POINT			
Voltage (kV)	**Up to 400 Ft Span**	**Up to 800 Ft Span**	**Up to 1200 Ft Span**
15	5	10	N/A
46	7	14	26

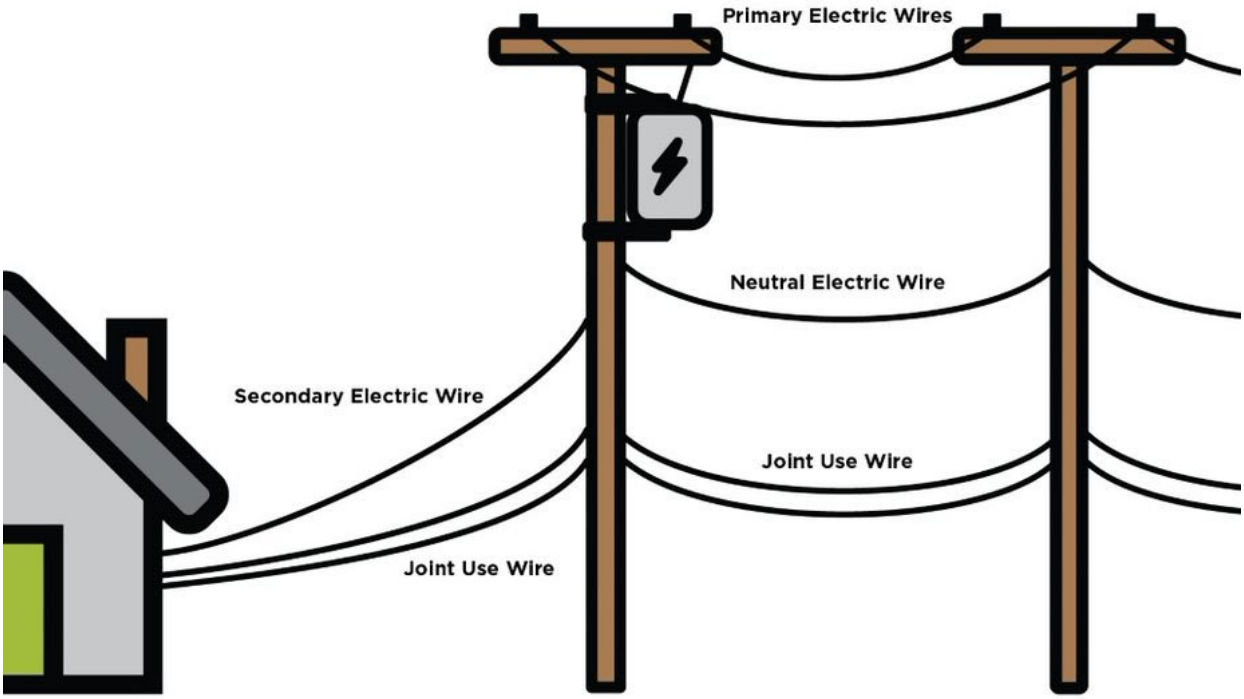
Table B - HORIZONTAL CLEARANCE @STRUCTURE			
Voltage (kV)	**Up to 400 Ft Span**	**Up to 800 Ft Span**	**Up to 1200 Ft Span**
15	5	5	5
46	7	7	7

Table C - VERTICAL CLEARANCE @LOWEST SAGPOINT			
Voltage (kV)	**Up to 400 Ft Span**	**Up to 800 Ft Span**	**Up to 1200 Ft Span**
15	7	9	N/A
46	9	11	15

Table D - VERTICAL CLEARANCE @ STRUCTURE			
Voltage (kV)	**Up to 400 Ft Span**	**Up to 800 Ft Span**	**Up to 1200 Ft Span**
15	5	5	N/A
46	5	7	7

4.4 DEFINITION OF DISTRIBUTION CONDUCTOR TYPES

Contractor is responsible for understanding the basic distribution system in order to determine clearances. By way of example:



4.5.1 Routine Maintenance and Scheduled Work

Routine maintenance is proactive, scheduled work performed on a circuit/maintenance map basis. In general, all debris is removed, while logs are cut into manageable-sized pieces and left on the property for the member unless otherwise agreed upon.

4.5.4 EMERGENCY/STORM RESPONSE

LPEA and contractor personnel are required to respond to storm situations. Only actions necessary for the restoration of power will be performed. No debris disposal will be attempted in emergency/storm situations.

5. DEBRIS DISPOSAL

5.1 ORDINARY DEBRIS DISPOSAL

Except as provided elsewhere in these guidelines (e.g., those situations described in Section 4.5), LPEA or its designated contractor shall attempt to establish mutually agreeable methods of tree, limb, and brush disposal. It is acceptable for debris to remain on site, provided that the disposal method is communicated with the property owner and complies with federal, state, and local regulations.

Debris shall be stacked along the edge of the right-of-way to provide maximum access to the right-of-way by LPEA personnel. In addition:

- When limbs, wood, and debris must be removed from the site, contractor shall endeavor to remove such debris in a timely manner. When such removal is impractical, the contractor shall inform the customer of when the clean-up will be completed.
- Broadcasting of chips into the right-of–way is acceptable unless the available area to do so is obviously landscaped.

6. MISCELLANEOUS VEGETATION MANAGEMENT

6.1 METER CLEARANCES

Outdoor meters or multiple meters shall be located so that a clear line of sight is established and maintained from an accessible location for meter reading. All trees and foliage shall be kept clear to allow access for a safe work zone around the meter cabinet and disconnect.

6.2 PAD-MOUNTED TRANSFORMER CLEARANCE

A. Top of transformer shroud/basement

B. Transformers

C. Transformer door. Transformer doors hinge at various positions on the transformer

D. Clear areas are required around pad mounted transformers to allow the following:

1. Access to the primary and secondary compartments of the transformer

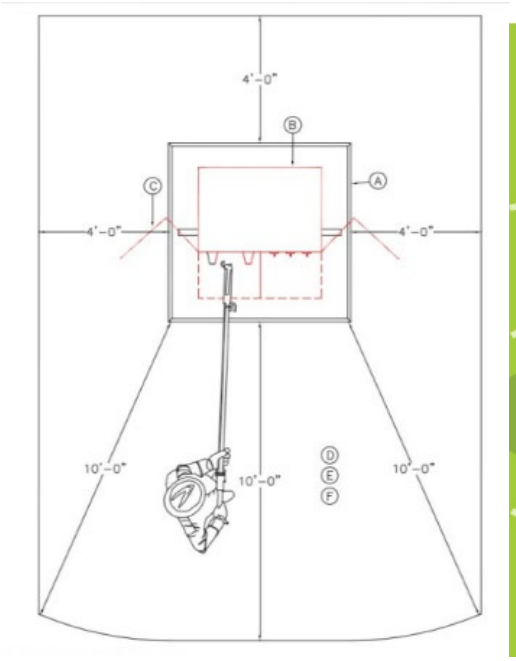
2. Hot stick operation of the elbows, switch and bay-o-net fuse associated with the primary compartment of the transformer.

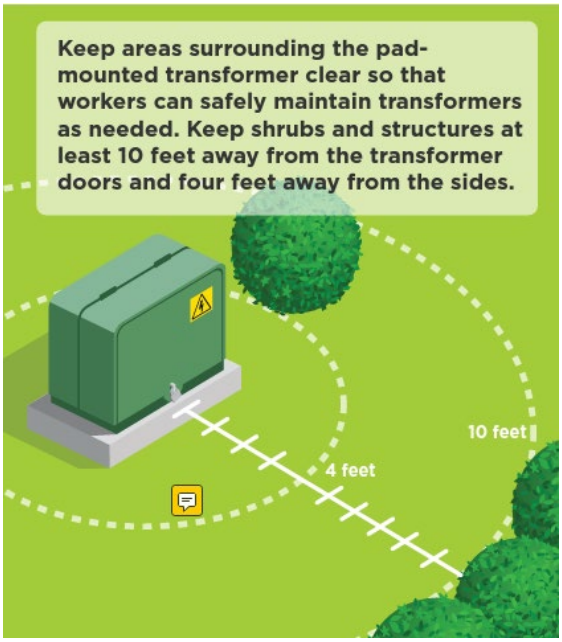
3. Air circulation for cooling the transformer during peak load conditions

4. Boom truck access for replacing the transformer

5. Routine inspection and maintenance

E. The clear area shall have no obstructions that would impede LPEA personnel in the operation, maintenance, installation, removal, or repair of the transformer or any other LPEA facilities at this location.





The preceding Vegetation Management Plan has been reviewed and has full approval.

8-31-22

Jessica Matlock CEO

08-31-22

Jerry Sutherlin VP Operations

7. LPEA TREE REMOVAL AGREEMENT

TYPE OF HAZARD	
NUMBER OF TREES	
SPECIES	
APPROXIMATE HEIGHT	
NEAREST STRUCTURE	
APROXIMATE DISTANCE OUTSIDE OF ROW	
BEFORE AND AFTER PHOTOS	

I, _____, owner of property located at _____, agree to the removal of said hazard tree(s) outside of LPEA easements and rights-of-way posing threats or hazards to LPEA lines and infrastructure. LPEA is not responsible for debris disposal or cleanup for trees outside of easements and rights-of-way.

_____ _____

LPEA REPRESENTATIVE LPEA MEMBER

_____ _____

DATE DATE