



# Harrison Rural Electrification Association, Inc.

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Your Touchstone Energy® Partner   
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## Service reliability

One of the toughest challenges we face is how to keep your electric service reliable.

First off, it is impossible to construct an electric distribution infrastructure that isn't susceptible to service interruptions and outages.

Overhead lines get struck by lightning, trees fall, wind blows and man-made materials and/or equipment eventually fail.

Underground lines get dug into, invaded by tree roots, and once again involve man-made material and/or equipment that will eventually fail.

So, what can we do to improve our service reliability?

Each year, we review our service interruptions to determine the primary causes. For as long as most of us can remember, trees represent the largest threat to the electric infrastructure. With more than 1,000 miles of electric lines

running through parts of seven counties, right-of-way maintenance programs are essential to providing reliable service.

Every few years we bid out our right-of-way clearing to a contracted service provider. As we have found, the cheapest isn't always the best because we have endured a contractor winning the bid and then packing up and moving out overnight because they wanted to renegotiate for higher prices. Our current contractor has three groups that work in unison to cover each year's budgeted allotment.

The first group is the unit crew. As the name suggests, they are responsible for clearing a certain number of miles each year of existing right-of-way. HREA believes that the best method is to cut right-of-way "ground to sky" within the determined width of the right-of-way. Simply put, they cut everything sprouting from the ground and everything that invades from the sides. Side cuts normally involve branches, but can include the entire tree if it is determined that there is a reasonable danger of a tree falling into the lines. Dead trees and/or leaning trees are primary examples of "danger" trees.

For 2012, we have budgeted to clear 95 miles of right-of-way by the unit crew. Areas to be addressed this year involve some of the line served by the Oral Lake

## Manager's Corner

by  
**Terry Stout,**  
CEO/General  
Manager



metering point, the Crystal Lake metering point and some of the Buckhannon metering point.

The Oral Lake cutting includes Copeland Run, Moss Run, Stonecoal Road, Stouts Run, Byrds Run, Pepper, Bear Mountain, Stewarts Run, Route 57, Arnolds Run, Overfield, Dogwood Run, Glade Run, Pigtail, Stratford Park and Dovetail. The Crystal Lake cutting includes Crystal Lake, Route 18, Nutters Fork, Poverty and Lower Flint. The Buckhannon cutting is to finish last year's target area with some cutting on Upper Peck's Run, Mt. Lebanon road and on Hacker's Creek. The current budget for this work is around \$450,000 per year (\$4,750/mile).

The second group is the spray crew. After the leaves come out, the spray crews take a couple of months and apply herbicide to right-of-way that has been recently cut. While the use of herbicides remains one of the more controversial practices, we only use herbicides that have been tested and deemed safe when used appropriately. Between ourselves and our contractor, we have  
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# Curbing copper theft

BY MAURICE MARTIN,  
COOPERATIVE RESEARCH NETWORK

Look at a piece of copper, and you can see why it's been popular with artists for 10,000 years. Its red-dish-orange luster enhances jewelry and other decorative art. Ancient weapon makers also found it useful — axes with copper heads date back at least 5,000 years. More recently, engineers discovered that copper was an excellent conductor of electrical current.

In the past few years, copper's popularity has seen an uptick among another group: criminals. Whether it's the tough economy or methamphetamine users needing money to pay for their next fix, the relatively high price of the metal has led to a wave of copper theft. The Electric Safety Foundation International (ESFI) estimates that there are more than 50,000 copper thefts from electrical utilities each year.

## Substation grounding

Copper is swiped from many places, including construction sites, warehouses and abandoned homes. In some areas, crooks drag away entire air-conditioning units so that they can remove the copper tubing at their leisure.

But copper theft from utility poles and substations carries a particular concern. Copper energizes current-carrying conductors (wires) as well as playing a key role in grounding.

Substations — which contain expensive equipment for controlling the flow of electricity from high-voltage transmission lines to your home — must be grounded to the earth to prevent damage from lightning strikes and fault currents. When your co-op grounds equipment in a substation, it makes an electrical connection to a buried network of

wires, called a ground grid, that dissipates the excess charge safely over a wide area.

But burying wires causes them to corrode. “(Buried) aluminum undergoes galvanic corrosion and can turn to dust in two years,” explains Emory Barber, director of cable & systems engineering at Southwire Company, one of the nation's largest manufacturer of transmission lines. “Given the same conditions, copper can last 60 years or more.”

Despite the extreme danger that comes with entering a substation, the copper wire inside makes for an attractive target — all a thief has to do is make a couple of cuts and get out. For the relatively small value of the stolen copper, crooks leave a mess that can be very expensive to clean up.

ESFI estimates the value of copper stolen from utilities each year — whether grounding wire from substations, grounding wires off poles or even power lines themselves — to be about \$20 million. But the financial impact can run three times that amount. And when copper bandits strike, not-for-profit co-ops have no choice but to pass the replacement costs on to their members.

A substation or pole that's left ungrounded becomes a dangerous place. Sometimes the thieves touch or cut the wrong conductors, exposing themselves to lethally high voltages. Errant currents can damage electrical equipment, taking the substation or line “down” and interrupting power to consumers. The electricity can even endanger co-op employees, causing injury or death. ESFI estimates about 35 Americans die each year because of copper or other metal theft.

## Foiling thieves

Southwire has addressed copper theft with a cable it calls Proof Positive. This product comes etched with a unique identifying code, serial number and a website address that scrap dealers can visit to see if the copper has been heisted. “The Proof Positive system enables recyclers to identify the material as stolen and alert law enforcement, often resulting in an arrest and conviction,” says Charles Holcombe, senior product development engineer with Southwire.

To prevent theft before it happens, co-ops have embarked on multi-pronged initiatives. Many have launched intensive public relations campaigns about the issue; others have partnered with local Crime Solvers chapters and posted rewards. Some co-ops are replacing much of the purloined wire with copper-clad steel. Copper-clad steel, which has been around since 1915, boasts the electricity-carrying





## Service reliability

four licensed applicators who oversee every acre sprayed. We have utilized the program for many years without any problems and we have seen autumn olive and multiflora rose stands turned into usable grassland as result of this herbicide program. The use of herbicides extends the time before cutting is needed again and thus reduces the overall costs of the right-of-way program.

Please consider the aforementioned benefits if one of our representatives' requests permission to apply herbicide to right-of-way on your property.

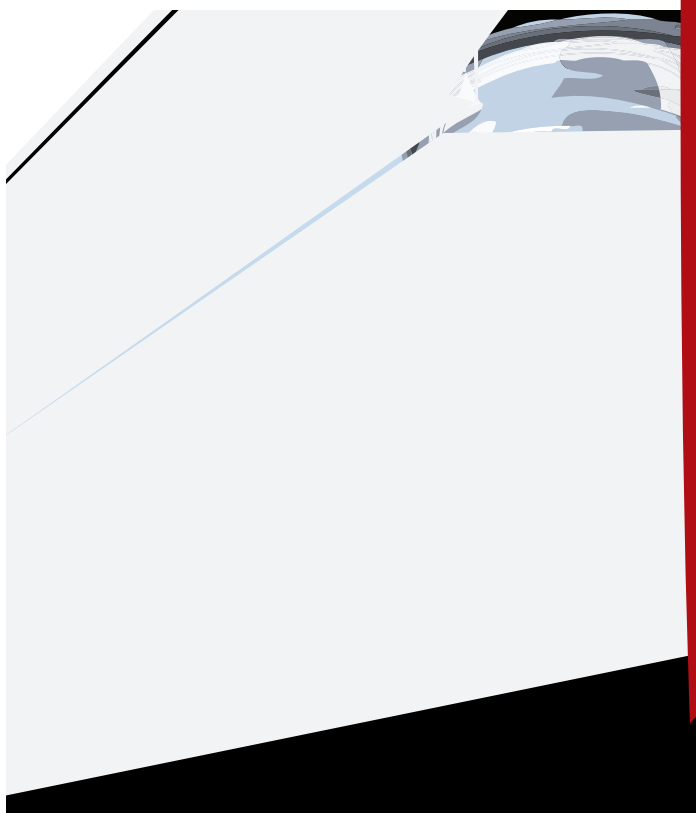
Application rules require we keep records based on acreage treated but we budget a fixed dollar amount, around \$87,000, and treat about 50 miles of right-of-way. That's an average cost of about \$1,740 per mile.

In 2012 we want to treat right-of-way in Pringle Tree, Turkey Run, Three Lick, Ridge Road, Halls Road, Pecks Run Keslings Mill Road, Sand Run, Hackers Creek, Buckhannon Road and Mt. Lebanon Road.

The third and final group is the time and material crew. These individuals address creating new right-of-way for new services, creating new or cleaning up existing right-of-way for line rebuilds, call-ins, cutting "hotspots" as identified by our line crews and interruption reports and they assist the linemen during outages. The only part that we include in our annual mileage of right-of-way clearing is their "hotspot" work. "Hotspot" work involves cutting sections where trees are interfering with the electric lines but were not scheduled to be cut yet. This happens for various reasons like soil conditions, weather, etc. In a normal year, we clear about 10 miles of right-of-way due to "hotspots". Call-ins include nuisance trees and danger trees. After a physical review of the problem area we prioritize the work by danger trees, new services and

then nuisance trees. The annual cost is around \$150,000 with the majority of that being spent on non-capital jobs.

All in all, we clear approximately 155 miles of right-of way each year at an average cost of around \$4,500 per mile. While this cost can be traced to our financials, we can't calculate a quantifiable return on this investment. The return comes from improved service reliability and will always remain a priority of this cooperative.





# Know how to stay safe *after* storms

Severe thunderstorms, tornadoes, hurricanes and flooding can leave more than damage in their wake — they can leave hidden dangers as well. In some cases, more lives are lost after the storm than from the storm itself.

“When you’re dealing with storm cleanup or flood-damaged property, the prospect of an electrical accident is probably not top of mind,” says Safe Electricity’s Molly Hall. “But it’s the first thing you should think of before you go outside, step foot into a flooded area, or enter a storm-damaged building.”



When outside, stay away from downed power lines and be alert to the possibility that tree limbs or debris may hide an electrical hazard. Treat all downed or hanging power lines as if they are energized. Lines do not have to be arcing or sparking to be live. Warn others to stay away, and contact Harrison Rural Electrification.

Do not touch downed power lines, and do not touch objects or puddles of water in contact with those lines. There is no way to know if they are energized. Encountering these objects can be as hazardous as coming into contact with a downed power line itself.

As part of its “Teach Learn Care TLC” campaign, Safe Electricity urges parents and other caregivers to make sure children are aware of these hazards as well.

Safe Electricity offers other precautions following storms:

- If you are driving and come upon a downed power line, stay in your vehicle, warn others to stay away and contact emergency personnel. Never drive over a downed line, as it could pull down poles and other items along its path.

- Be alert at intersections where traffic lights may be out. Stop at all railroad crossings, and treat road intersections with traffic signals as four-way stops before proceeding with caution.

- Before re-entering storm-damaged buildings or rooms, be sure all electric and gas services are turned off. Never attempt to turn off power at the breaker box if you must stand in water to do so. If you cannot reach your breaker box safely, call Harrison to shut off power at the meter.

- Never step into a flooded basement or other area if water is covering electrical outlets, appliances or cords. Be alert to any electrical equipment that could be energized and in contact with water. Never touch electrical appliances, cords or wires while you are wet or standing in water.

- Keep electric tools and equipment at least 10 feet away from wet surfaces. Do not use electric yard tools if it is raining or the ground is wet.

- Electric motors in appliances that have been drenched or submerged should be thoroughly cleaned and reconditioned before they are put back into service. It may be necessary to replace them. Do not use any water-damaged appliance until a professional has checked it out.

- If, after a storm or disaster, the power to your home is out for a prolonged period, know important safety rules, such as never using a charcoal or gas grill to cook inside.

- If you use a portable generator, be sure a transfer safety switch has been installed, or connect appliances directly to the generator. This prevents electricity from traveling back through the home to power lines — what is known as “backfeed.” Backfeed creates danger for anyone near lines, particularly crews working to restore power.

For additional information, tips and safety videos, visit [SafeElectricity.org](http://SafeElectricity.org).



## Energy Efficiency

### *Tip of the Month*

Smart home landscaping can lower your electric bills. Trees on the east and west sides of your home provide shade — and reduce your cooling costs — during hot summer months. Shade for your air conditioner can save 10 percent of your cooling costs. And by adding vegetation to the north side of your home, you can reduce winter winds that trigger higher heating costs. Find more ways to save at [TogetherWeSave.com](http://TogetherWeSave.com).

Source: Touchstone Energy® Cooperatives