

# Planned Maintenance



\_\_\_\_\_ (Notification Date)

Dear Customer/Property Owner:

Duke Energy is committed to providing you with safe, reliable electric service. One of the best ways to deliver on this commitment is to keep the lines that deliver electricity to your home free from trees and underbrush. To do this, Duke Energy hires qualified and trained tree experts to inspect and clear the electrical lines.

**The electrical lines serving your immediate area are scheduled for vegetation maintenance work.** Trees or vegetation in the right of way that may pose a danger to the lines and public safety will be pruned or cut down. Distribution rights of way are generally maintained 15 to 25 feet on either side of the line (30 to 50 feet total width). Actual clearance and widths will vary depending on the applicable right of way

### What Can You Expect?

- Trees affecting safety or reliable electric service will be pruned or cut down. Any trees in maintained or landscaped areas identified to be cut down **will be marked with lime green surveyor's tape**. Other trees on the property that may impact the lines will be pruned, but will not be marked. Please refer to our enclosed booklet for details about pruning methods. These methods are endorsed by the North Carolina Division of Forestry, the South Carolina Forestry Commission and are in accordance with the American National Standards Institute (ANSI) A300 Pruning Standards manual.
- Brush **will not** be marked prior to removal. Brush is vegetation growth that is six (6) inches or less in diameter at approximately 4.5 feet from the ground.
- In landscaped and maintained areas, brush will be chipped and removed from the site. When feasible and agreed to by the property owner and Duke Energy, the brush may be blown into an area either within the right of way or adjacent to the right of way corridor. Larger wood is the property of the owner and contractors will work with the property owner to cut the wood into manageable lengths. The wood will be stacked neatly at the base of the tree or at the edge of the right of way corridor.
- Dead or dying wood will not be chipped due to safety concerns, but will be stacked neatly as well.
- The Company does not remove or grind stumps.
- In non-landscaped areas, trees and limbs will be cut, left on site, and windrowed along the edge of the edge of the right of way. Brush can be brush hogged when the terrain or site allows. If the terrain does not allow mechanized equipment, the trees and limbs will be manually hashed down and left to bio-degrade naturally.

### What if I Have Questions or Concerns?

Please call me at the number below with any questions you have concerning this work. If I am unavailable, please leave your name, address, and a daytime phone number (including area code). I will return your call as soon as possible. You can also find more information online about our program and policies by visiting [www.duke-energy.com/trees](http://www.duke-energy.com/trees).

Work will proceed as scheduled unless we hear from you within **seven business days of this notification**.

Sincerely,

Paul Coe  
General Foreman  
Asplundh Tree  
(919) 218-1003

Iven Goodman  
Inspector for Duke Energy  
(336) 467-0323  
Certified Arborist SO-6992A

D-Planned Maint.  
Rev (08/02/2013)

## Free Wood Chips:



### Free Wood Chips

If you are interested in receiving wood chips processed during our line clearing work, please call:

xxxxxxxx (Contractor Foreman Name)  
xxx-xxx-xxxx (Foreman Telephone Number).

If no one answers, please leave your contact information.

In order to deliver free wood chips, we will need:

- A dump location that is a reasonable distance from our work location.
- Directions to the dump site that will accommodate a two ton dump truck.

**There is no charge for the wood chips!**

Sincerely,

Name: XXXXXXXXXXXXX  
Title: XXXXXXXXXXXXXXX  
Company:  
Phone: XXXXXXXXXXX

## Planned Outage



\_\_\_\_\_ (date)

Dear Customer/Property Owner:

Duke Energy is making improvements to the electrical system in your area to ensure the continuous delivery of safe and reliable electric service to our customers.

In order to conduct this maintenance work, your electric service will be interrupted on (date) at (time + am/pm) for approximately (xxx) hours.

If for some unforeseen reason we are unable to perform the work on this date, we will attempt to conduct it on (date) at (time + am/pm).

The area affected is

- (location)

We regret any inconvenience that may result from this interruption in your electric service. If you have any questions, please contact us by calling Duke Energy Customer Service at 1-800-777-9898.

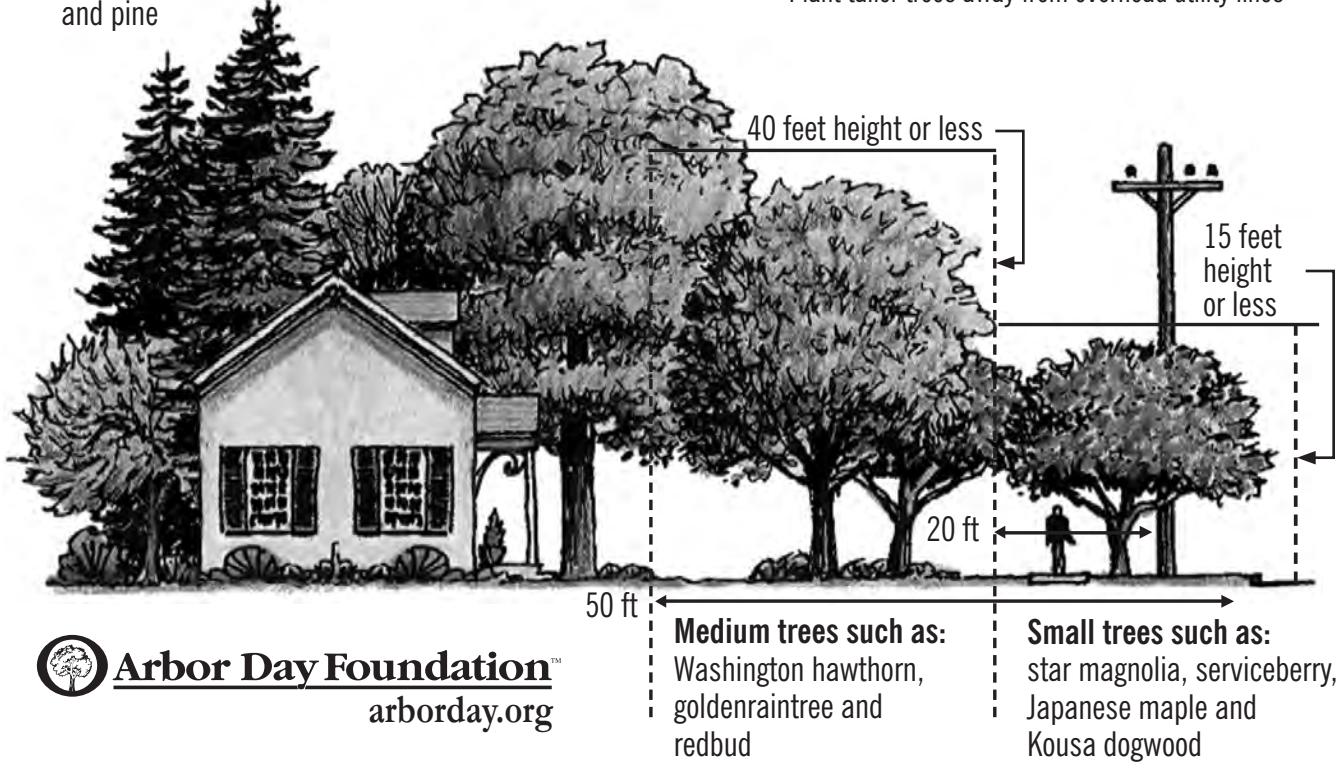
Sincerely,

Name: XXXXXXXXXXXXX  
Title: XXXXXXXXXXX  
Company: XXXXXXXXXXXXX  
Phone XXXXXXXXXXXXX

Tall trees such as:  
maple, oak, spruce,  
and pine

## Plant the right tree in the right place

Plant taller trees away from overhead utility lines



 **Arbor Day Foundation™**  
arborday.org



### Selecting a Tree

Proper spacing is important to the growth and health of trees. A good rule of thumb is trees should be planted no closer together than the height they will become at maturity. The following trees thrive in the Carolinas:

**Small Trees** (trees that can be easily maintained below 15 feet):

- crepe myrtles (certain varieties)
- flowering crabapples (certain varieties)
- Kousa dogwood
- Japanese maple
- fringetree
- common smoketree
- amur maple
- dwarf amur maple
- dwarf red buckeye
- star magnolia
- serviceberry

**Medium Trees** (grow 15 to 40 feet and should be planted 20 to 50 feet from power lines):

- Yoshino flowering cherry
- aristocrat callery pear
- trident maple
- little leaf linden
- American hornbeam
- Washington hawthorn
- flowering dogwood
- wax myrtle
- saucer magnolia
- redbud

**Large Trees** (grow over 40 feet and should be planted at least 50 feet from power lines):

- willow oak
- white oak
- red maple
- ginko
- red oak
- sugar maple
- southern magnolia

### Call Before You Dig

When digging in your yard, be careful where you dig. If you have underground electrical service, you could hit an underground power line and be seriously or fatally injured.

Always call an underground line locating service before you dig. There is no charge for the service, and the call is toll-free.

- **North Carolina:** Call the N.C. One Call Center at 800-632-4949. Please call at least 48 hours prior to digging.
- **South Carolina:** Call the Palmetto Utility Protection Service (PUPS) at 888-721-7877. Please give PUPS at least 72 hours notice.

Each of these services will mark any underground lines on your property.

## The Kindest Cut of All

TREE MAINTENANCE PROGRAM FOR  
DISTRIBUTION POWER LINES

## Delivering Power to Millions Daily

Duke Energy provides safe, reliable electricity by maintaining high standards for the power lines serving your home or business. These standards include constantly inspecting and clearing electrical lines through a scheduled tree pruning and right-of-way management program. Each day, we deliver safe, dependable electricity to more than 2 million Carolinians. We contract professional tree crews to provide healthy pruning for the trees along more than 50,000 miles of overhead power lines.

To help ensure uninterrupted service, trees already growing close to power lines must be pruned or taken down. When trees grow near or into overhead power lines, they become a source of danger. The high winds of a sudden summer thunderstorm or a winter ice storm can send limbs crashing to the ground, bringing power lines with them. And even mild breezes can cause limbs to brush power lines and possibly disrupt electric service to an entire neighborhood. Trees planted outside the right of way often require little or no pruning. Typical distribution power line rights-of-way are 30 to 50 feet in width.

Duke Energy's pruning techniques were developed by national experts in tree care and tree health maintenance. These techniques are in accordance with the guidelines outlined in the American National Standards Institute (ANSI) A300 Pruning Standards document.

## Duke Energy's Pruning Philosophy

Trees and plants with shorter heights at maturity can be planted under neighborhood power lines and may never need pruning. However, tall or spreading trees, when planted under or near power lines, inevitably will require pruning or taking down.

It is a matter of safety and reliability. When our professional tree crews prune trees near power lines, they follow these guidelines:

- Use a combination of natural and directional pruning to minimize potential damage to trees.
- Prune enough to ensure reliable electric service to the customer for several years.
- Make an effort to contact customers prior to taking down a neighborhood tree, except during emergencies.
- Cut the wood and leave it on the customer's property.

By using these guidelines, tree crews are able to make decisions about pruning a particular tree based on its:

- natural shape
- average annual growth rate
- approximate height at maturity.

These factors help determine the most suitable pruning required to achieve proper line clearance and the accelerated rate of re-growth caused by pruning.

## Making a Healthy Cut

Natural pruning refers to the removal of limbs from the trunk or parent limb without damaging the trunk or leaving a protruding stub. Most pruning jobs incorporate one or more of these three types: height reduction pruning, side pruning or directional pruning.

Whenever a tree's height is reduced, the upper crown of the tree is cut back to provide proper clearance. Height reduction is most often required when a tree is growing directly under a power line. Sometimes a crown is reduced through a technique known as a "v-cut." Regardless of the type of pruning, the objective of the pruning crews is to leave as much foliage and limbs on the tree while obtaining the proper, safe and reliable clearances.

Side pruning involves removing side limbs near power lines. Limbs overhanging power lines also are removed. A tree limb properly pruned will form a "doughnut" at the point of the cut about a year after the pruning. A "doughnut" is a callus formation of wood that develops around proper tree cuts and will eventually grow over the entire surface where the limb was removed.

Directional pruning means cutting to lateral limbs that are growing away from power lines.

If you have questions about your trees or Duke Energy's Tree Maintenance Program, call our 24-hour Customer Contact Center at 800-777-9898 where our representatives are available to assist you, or visit our Web site at [www.duke-energy.com](http://www.duke-energy.com).



*Compatible planting of crepe myrtles beneath the power lines*

## Plan Before You Plant

Customers need to plan carefully when planting near power lines. Homeowners should avoid planting a row of trees that will mature to a large size along a property line. Property lines also are frequently the area where power lines are placed, which means years later when the trees mature, they have to be pruned to ensure safe, reliable electric service. Planning ahead of time is important:

- A common species that many landscaping experts recommend for screening is wax myrtles because they do not grow tall enough to interfere with power lines and make a good choice for landscaping near power lines.
- Tall-growing trees should be planted at least 40 feet from power lines.
- Choose shrubs or low-growing trees if you plant in the vicinity of a power line.
- If you're uncertain about how large a tree will be at maturity, consult a landscaping expert.

## Pruning vs. cutting down

Each tree is different and must be considered individually. Trees with trunks close to the power lines may require much more pruning than trees located farther from the line. Additionally, not all pruning techniques are appropriate for all tree species.

When pruning, our trimming professionals make every attempt to trim for sufficient clearance until we return on our next planned maintenance.

Before deciding to remove a tree, we first evaluate its health and proximity to the lines. A tree may have a decayed portion on the trunk. The entire tree may be dead or in the process of dying, which might cause it to break or fall. It may have soil that is severely eroded away from the root system, making it more likely to fall.

Sometimes trees are required to be cut down when they are too close to power lines or when they would have to be pruned severely.

## Herbicide applications

Duke Energy uses environmentally responsible herbicide applications to control tall growing incompatible plants within power line rights of way. Our objective is to maintain low growing vegetation to minimize potential electric power interruptions, which also enhances wildlife habitat.

We use professional contractors to apply herbicide by utilizing different methods including foliar, stump, stem and vine applications.

Duke Energy contractors have been trained on the proper, safe and environmentally responsible techniques of managing plant growth. All products used by Duke Energy are registered by the Environmental

Protection Agency and approved by appropriate state agencies.

## Debris removal

The majority of Duke Energy's pruning and cutting occurs during planned maintenance. We typically dispose of any small limbs and brush in landscaped settings. The larger pieces of wood are cut into manageable lengths for the property owner's use. In non-landscaped sites, pruned vegetation and wood debris are left in place to bio-degrade. When an "Act of God" (e.g., lightning, ice storms, high winds, hurricanes, tornadoes) causes trees or other vegetation to fall across power lines and thus create power outages, we cut the trees and brush so poles and lines can be repaired and re-energized. Disposal of any wood, limbs or debris resulting from this type of emergency operation is the property owner's responsibility.

For more information visit [duke-energy.com/safety/right-of-way-management.asp](http://duke-energy.com/safety/right-of-way-management.asp).

Visit the Arbor Day Foundation at [arborday.org/treelineusa](http://arborday.org/treelineusa) for information about planning and planting vegetation around electrical facilities.



## Vegetation Management

Keeping the lights on.

## Overview

Our customers want reliable power – in both good weather and bad. And while the trees that thrive throughout our 104,000 square miles of service area are a source of tremendous pride, they are also one of the main causes of power outages.

Duke Energy works consistently to balance aesthetics with our goal to provide safe, reliable power to the households and businesses that depend on us. It is our responsibility to ensure power lines are free of trees and other obstructions that could disrupt electric service. Trees that are close to power lines must be trimmed or cut down to ensure they don't cause power outages, and Duke Energy does much of this work proactively.

Our crews use a variety of methods to manage vegetation growth along distribution circuits and transmission power line rights of way, including vegetation pruning, felling (cutting down) and herbicides. These methods are based on widely accepted standards developed by the tree care industry and approved by the American National Standards Institute for tree care maintenance and operations.

## Examples of typical transmission and distribution structures



Transmission lines



Distribution lines

## Transmission rights of way

High-voltage transmission lines provide large amounts of electricity over long distances. The transmission lines in your community are part of the larger, interconnected grid system that powers an entire region, not just the community through which the lines run. Federal rules are more stringent for some transmission lines, depending on the voltage, and may include fines up to \$1 million per day for tree-related outages. Duke Energy manages its grid to provide reliable operation of transmission facilities while adhering to regulations and easement rights.

## Distribution rights of way

Distribution lines carry power from local substations to homes and businesses. A distribution right of way provides access to a strip of land so that utilities (electric, telephone, cable, water and/or gas) may build and maintain service lines. Duke Energy manages rights of way to provide reliable delivery of electricity.

## Vegetation management methods

Duke Energy uses an Integrated Vegetation Management approach, which includes careful pruning, selective herbicidal application and tree felling. This allows us to evaluate power line areas and determine the best method for maintaining reliable service.

The objective of an Integrated Vegetation Management program is to maintain the lines – before the trees and brush are close enough to cause outages – in a manner that is consistent with good arboricultural practices.

Duke Energy uses specific circuit information, reliability data and other indicators to prioritize lines for tree pruning and removal.

## Pruning methods

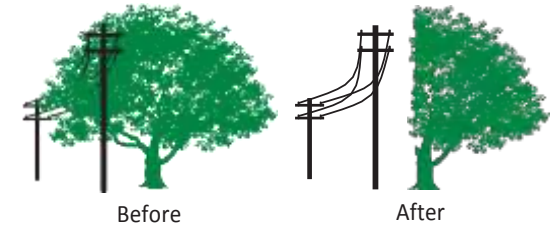
We do not “round” trees over because it's not good for a tree's health. We subscribe to directional or targeted pruning. These methods are endorsed by the tree care industry as the best pruning techniques for tree health.

## Examples of trimming methods

### “V” trimming



### Side trimming

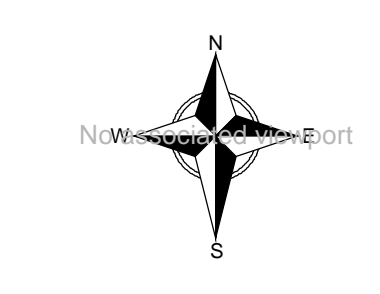


### “L” trimming



Directional pruning involves cutting a limb back to another limb (or lateral) so that future growth of the resulting limb is directed away from the power lines. The basis for this type of pruning is that each limb removed from a tree is removed either where it joins another limb or at the trunk. With directional pruning, tree growth causes less impact to public safety and electrical service. This procedure is different from the philosophy of “rounding” trees over in which limbs are cut at arbitrary points, normally leaving unhealthy “stub” cuts, which can damage the tree.

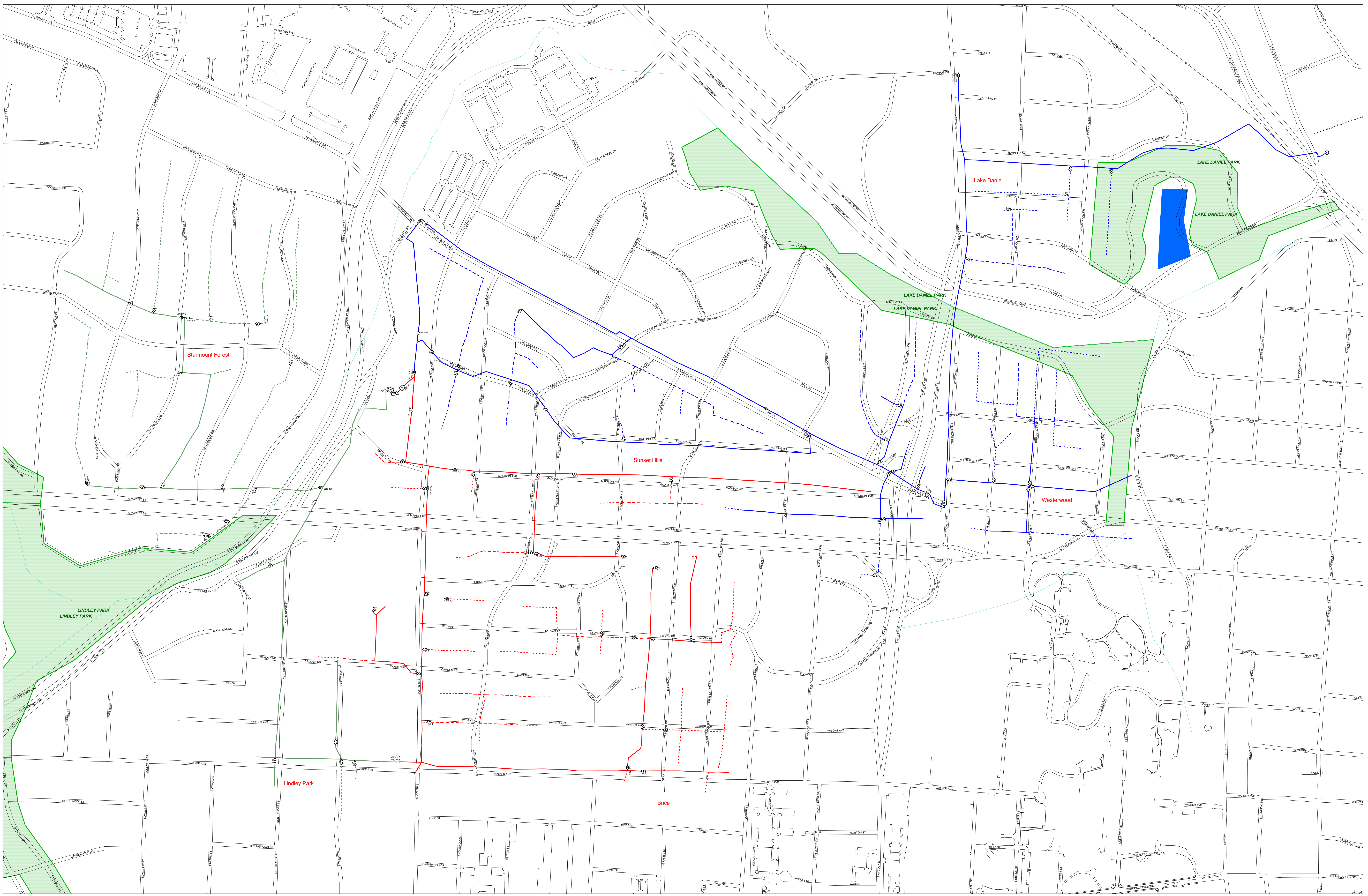
# One Line Circuit Maps - Custom



# Duke Energy

No associated viewport

Circuit Numbers:  
09010407 09480401 09480403



Circuit Names:  
Greensboro Main 0407  
Lindell Rd Dist 0401  
Lindell Rd Dist 0403

Created by: Combs, Jason E Date: 10/27/2014

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