

# *Pepco Community Bulletin*

**Feeder 15197 - Serving the Crestwood and Petworth Communities**

**Issue 2 - March 2007**

## **Background Overview of Feeder 15197**

For the past two years, residents have expressed concern regarding the level of service provided by Pepco. The supply line, Feeder 15197, serves the communities comprising Crestwood and part of Petworth (a map is available at <http://www.crestwood-dc.org/>). To remedy the problem, Pepco is committed to investing approximately \$1.8 million to take the necessary steps to improve the current level of service.

Feeder 15197 originates in Northeast D.C. at the Fort Slocum Substation, on North Dakota Avenue, N.E., and extends for 11.9 miles into Northwest D.C. along Nicholson Street, NW, Missouri Avenue, NW, and Allison Street NW, between Kansas Avenue, NW, and 14th Street, NW, 14th Street, NW between Webster and Ingraham Streets, NW and Webster Street, NW between 14th and 18th Streets, NW.

While part of the feeder is underground, sixty-six percent (66%) is overhead, and travels through a maze of trees. Many times outages are caused by tree branches falling onto overhead lines, wind/lightning, street level accidents, animals coming in contact with energized equipment and accidents from digging into underground lines.

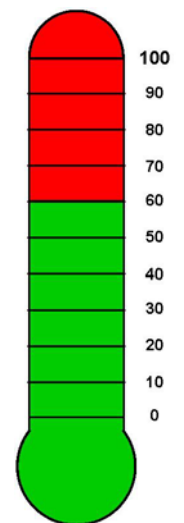
In 2005, Feeder 15197 was identified as a priority feeder, based on the frequency and duration of outages. Pepco reported this finding to the Public Service Commission and took corrective actions that included:

- Installing automatic circuit reclosers (ACR), an automatic sectionalizing device.
- Installing additional fuse protection at various locations along the route of the feeder.
- Replacing deteriorating equipment, such as cross arms.
- Installing animal guards.
- Installing lightning arresters and animal guards at various locations.
- Installing tree wire along 17th Street NW.

In that same year, 55% of the feeder's outages were due to tree limbs and storms. In 2006, 45% of the outages were due to trees and storms, following the improvements outlined above.

As a result, Pepco has undertaken a number of more comprehensive improvements and upgrades to improve feeder reliability. The variability of weather from year-to-year, and the increasing age of already mature trees in the area preclude our ability to predict the expected improvement in reliability performance. Nonetheless, Pepco is confident that the planned improvements will significantly reduce the types of outages recently experienced on the feeder.

## **Overall Project Status**



**60% Complete**

## The Right Tree in the Right Place

Trees can be a great asset for a community, but when the wrong trees are planted in the wrong place they can become a liability, or eyesore. That is why the District of Columbia's Urban Forestry Administration (DDOT UFA) adopted a "right tree right place" policy in recent years. This policy includes planting lower-growing species around power lines, and is recommended by the National Arbor Day Foundation, and the International Arbor Day Foundation. Urban foresters consider the best trees to plant near overhead lines are trees that will not grow taller than overhead lines, or "under-wire appropriate." Some examples of under-wire appropriate trees are Crape myrtle, Redbud, Dogwood, Sterile sweetgum, Single stem Amelanchier, Japanese Lilac, and Carpinus. Trees of these species will ensure lower growth.

Recently, the DC Department of Transportation's Urban Forestry Administration (UFA) planted several under-wire appropriate Cherry cultivars along Allison Street, NW. This is part of their ongoing effort to plant the right tree in the right place throughout Crestwood, and the District. As these new saplings mature, they will not grow thru and over the wires, but will spread and peak out below the wires.

According to the UFA, the agency is far ahead of any other surrounding municipality, in adopting and implementing a "right tree right place" tree planting policy. Earl Eutsler, DDOT UFA Ward 3 and 4 Arborist, reports planting *several thousand* smaller stature trees under utility lines over the past 3-4 years. Mr. Eutsler further reports that, "Beyond the total number, we utilize an ever expanding group of species to ensure an appropriate level of diversity. To date, approximately 25 different species have been selected for under-wire planting locations. The pace at which we have implemented this newer trend in urban forestry is well ahead of the neighboring jurisdictions."

"Many neighborhoods are not pleased with our decision to implement a 'proper tree, proper place' policy," says Mr. Eutsler. "To a certain extent, Crestwood represents an anomalous situation with regard to its open-arms reception of this policy. Many parts of Wards 3 and 4 have been very critical of this measure, despite all of our (DDOT & PEPCO) efforts to educate regarding the benefits. Despite this citizen push back, we have aggressively pursued a broad program of selecting the most suitable tree for each location we schedule for planting."

Nathan McElroy, Pepco Staff Forester and ISA Certified Arborist, says that along feeder 15197 approximately 32 public street trees were identified as having potential to cause significant, or catastrophic, damage to the electrical system. "Pepco provided the locations to the UFA in November 2006 so they could perform an independent evaluation. The UFA Arborist found the majority of the locations identified by Pepco did require maintenance actions that not only would benefit electric reliability, but also reduce hazards to citizens and property. UFA requested that Pepco proceed with removals of dead, dying and hazardous trees in the 600 and 700 blocks of Nicholson Street NW, the 1600 block of Upshur Street NW, the 1600 block of Varnum, 1800 block of Shepard Street NW, 1800 block of Quincy Street NW."

In one instance a large, dead tree was identified by Pepco in the 1700 block of Varnum Street NW. The District's tree removal contractor agreed with Pepco and determined it could be safely removed without the assistance of Pepco. It is slated for removal by the end of February.

Along with the need to remove dead vegetation, sometimes healthy trees must be removed to prevent service interruption. One reason a healthy tree might just topple over for no apparent reason is "uprooting." Sometimes when trees are planted in areas, such as tree-boxes, that are far too small to accommodate their root structure, those roots can outgrow the tree-box and starve to death. Showing no signs of being dead, one day that tree will fall, and hit power lines, and interrupt service.

Mr. McElroy says, "Despite much effort by Pepco, and UFA Arborists, to identify hazardous trees, the potential of *healthy* trees failing is still possible. The uprooting of entire apparently healthy trees will remain a threat to the electric system. When large trees uproot the resulting damage, can be significant, and make power restoration extremely challenging. Evaluating the structural soundness of a trees root system, in an urban setting, is the most challenging diagnosis an arborist faces. Generally, UFA is not willing to remove a healthy tree with questionable root structure unless it shows signs of heaving or movement."

Pepco's vegetation work is done in most of Crestwood, and will continue until completed. Pepco's vegetative maintenance policies and procedures, as well as a tree pruning schedule, is available at:

<http://www.pepco.com/home/emergency/veg/>

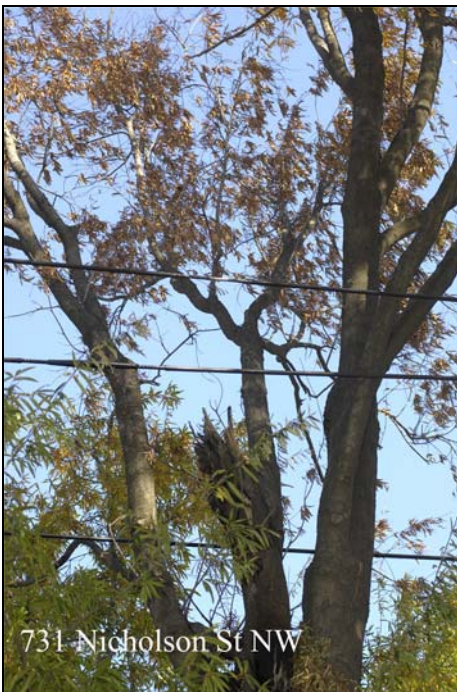
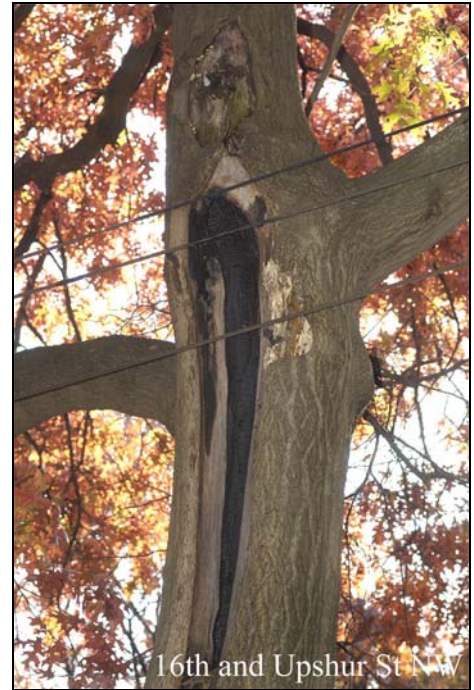




**LEFT** – The tree at 1603 Varnum Street, NW is an example of an apparent healthy tree that may actually have a compromised, or inadequate root support system and uproot in the future.

**RIGHT** – The tree in the 1600 block of Upshur Street, NW had evidence of repeated burning from direct contact with primary wires. The stress and heat on the wires caused a hazardous outage at least once when the energized wires broke and fell to the ground. The burning over a period of years also created a column of decay in the tree trunk creating an additional hazard.

The Urban Forestry Administration and Pepco cooperatively removed this tree in December of 2006.



**LEFT & RIGHT** – This tree near 731 Nicholson Street, NW caused a power outage in August of 2006, affecting the whole feeder including residents in Crestwood. A large lead (branch) of the tree was in direct contact with a primary wire, causing slow periodic burning. Eventually the branch broke and landed across the phase wires causing an outage. The incident also effectively killed the tree by desiccating (drying) the cambium (veins or transport system) of the tree.

The Urban Forestry Administration and Pepco cooperatively removed this tree in December of 2006.



## You Can Prevent Future Tree – Wire Problems

It's important to "plant the right tree in the right place." You can access more information on tree planting and selection at the following locations:

- Pepco's **Other Resources** page - [www.pepco.com/home/emergency/veg/res/](http://www.pepco.com/home/emergency/veg/res/)
- The **National Arbor Day Foundation** - [www.arborday.org/trees/righttreeandplace](http://www.arborday.org/trees/righttreeandplace)
- The **Right Tree Handbook** from **Minnesota Power** - [www.mnpower.com/treebook](http://www.mnpower.com/treebook)

## Current Status of Feeder 15197

Crews are presently working near 17th & Webster Street, west of 16th Street, NW to replace the existing open wire of the main trunk of feeder 15197 with pre-assembled aerial cable (PAC). Work on replacing the remaining PAC cable will continue for the remainder of this month and possibly into next month.

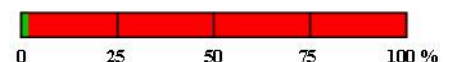
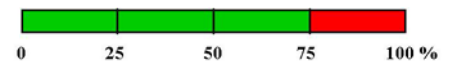
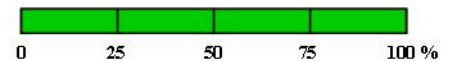
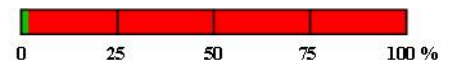
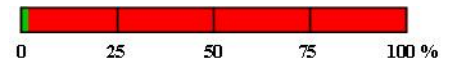
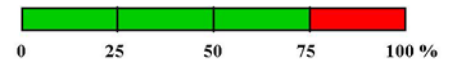
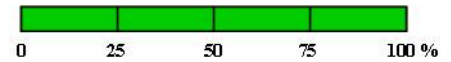
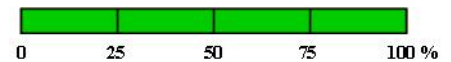
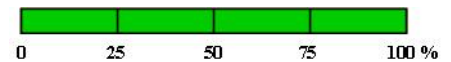
Pepco appreciates your patience, and welcomes any feedback on how we can deliver better service. Please contact Kimberley Johnson at 202-872-2477 or [krjohnson@pepco.com](mailto:krjohnson@pepco.com) with comments.

## Project Overview of Feeder 15197

The following corrective actions began the week of November 20, 2006:

- Inspected equipment in 71 manholes along 9<sup>th</sup> Street, NW, and re-taped the connections and splices.  
**100% Completed**
- Replaced approximately 8,000 feet of underground cable along 9<sup>th</sup> Street between Allison Street, NW and Nicholson Street, NW. Estimated completion was February 2007 – actual completion was January 23, 2007.  
**100% Completed**
- Replaced all bare wire overhead lines with tree wire.  
**100% Completed**
- Reroute trunk of feeder avoiding trees and install pre-assembled aerial cable (PAC) along Madison Street, NW, 4<sup>th</sup> Street, NW, and Missouri Avenue, NW.  
**30% Completed**
- Replace the existing open wire of the main trunk with pre-assembled aerial cable (PAC) along Allison Street, NW from 9<sup>th</sup> Street, NW to 14<sup>th</sup> Street, NW, and 14<sup>th</sup> Street, NW from Allison Street, NW to Webster Street, NW, and Webster Street, NW from 14<sup>th</sup> Street, NW to 17<sup>th</sup> Street, NW and 17<sup>th</sup> Street, NW from Webster Street, NW to Decatur Street, NW.  
**30% Completed**
- Replace existing bare wire with tree wire and fuse as a lateral along 17<sup>th</sup> Street, NW.  
**75% Completed**
- Replace four (4) existing manually operated gang switches with SF6 remote operated switches.  
**Engineering design is completed, pending construction work.**
- Relocate automatic circuit recloser (ACR) to Webster St. between 17<sup>th</sup> & 18<sup>th</sup> Streets, NW.  
**Engineering design is completed, pending construction work.**
- Trim / remove 20-25 trees identified as requiring immediate attention.  
**100% Completed**
- Address 12 other tree issues (5 removals).  
**75% Completed**
- Pepco's Vegetation Management is working with the DC Department of Transportation Urban Forestry Administration (UFA) to resolve approximately 8 remaining issues.  
**Discussion is ongoing to reach a consensus**

### Project Status



## Glossary of Terms

**Animal Guard:** A non-conductive device installed on energized electrical equipment to minimize customer outages due to animal contact.

**Automatic Circuit Recloser (ACR):** Remote control device monitored and operated by the Control Center designed to detect faults on the feeder downstream, and open to isolate faults from the rest of the feeder, thereby reducing the number of customers affected. The ACR also attempts to automatically reclose circuits because many of the faults are temporary and usually fall clear. In instances where faults do not clear themselves, the ACR will remain open until crews make repairs.

**Cross Arm:** A non-conductive assembly (usually wooden) for supporting electrical wires on a utility pole.

**Directional Pruning:** remove branches from a tree in such a way to encourage new growth in a particular direction and away from overhead conductors.

**Fail:** an apparently healthy live tree can "fail" (break, split, tear or uproot due to wind or ice load).

**Feeder:** An electrical line that carries a large block of power from the substation to the customer. This includes overhead as well as underground facilities.

**Fuse:** A safety device used to protect an electric circuit against excessive current.

**Gang Switch:** A switch manually operated by field crews to isolate faults, or to restore customer load.

**Lateral:** A tap/wire off the main trunk of the feeder serving the smaller areas, protected by a fuse.

**Lightning Arrester:** Protective devices for limiting surge voltages due to lightning strikes or equipment faults or other events, to prevent damage to equipment and disruption of service (also called surge arresters). These devices are installed on many different pieces of equipment such as power poles and towers, power transformers, circuit breakers, bus structures, and steel superstructures in substations.

**Manhole:** An underground utility vault used to house electrical and other utility equipment.

**Pre-assembled Aerial Cable (PAC):** A type of insulated overhead cable which is more robust than standard overhead wire and is better able to withstand falling tree limbs.

**SF6 Remote Switch:** A switch that is monitored and operated via remote control by the Control Center to isolate or restore customer load.

**Subordination Pruning:** a gradual removal of a limb or lead of a tree over a period of growing seasons, in order to allow other part or parts of tree to dominate.

**Tree Wire:** An insulated overhead wire used to withstand incidental tree contact, particularly in heavily wooded areas.

**Uproot or Wind-throw:** when a tree topples over due to insufficient structural root support.



Should you have any questions or concerns, you may contact Kimberley Johnson  
In Pepco's Department of District of Columbia Affairs at  
202-872-2477, or [krjohnson@pepco.com](mailto:krjohnson@pepco.com)