



## APPLICATION FORM

All applications must include the following information. Separate applications must be submitted for each eligible program. **Deadline: June 2, 2017.** Please include this application form with electronic entry.

### PROGRAM INFORMATION

County: Prince William County

Program Title: Forest and Landscape Restoration on New County Projects

Program Category: Environmental

### CONTACT INFORMATION

Name: Julia Flanagan

Title: Arborist

Department: Public Works

Complete Mailing Address: 5 County Complex Ct., Suite 170, Woodbridge, VA 22192

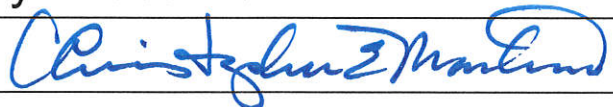
Telephone: 703-792-7208 Website: pwcgov.org

Email: jflanagan@pwcgov.org

### SIGNATURE OF COUNTY ADMINISTRATOR OR CHIEF ADMINISTRATIVE OFFICER

Name: Christopher E. Martino

Title: County Executive

Signature: 

## **Forest and Landscape Restoration on New County Projects**

**The Problem:** 1) Continued loss of natural forest conditions which is affecting water quality, air quality and wildlife habitat. 2) Trees and shrubs installed on new development are more likely to die before reaching maturity due to increased drought stress, loss of soil organic components and low nutrient levels. This results in early demise as well as poor health and poor aesthetics. 3) The conversion of forest to managed turf continues to require frequent maintenance such as mowing, fertilization, and pest control at both a fiscal and environmental at cost to the County.

**The Challenge Faced by the Prince William County:** How to lessen the loss of existing forests during the development process, restore forested conditions where tree removal is unavoidable, and improve the health and appearance of new landscaping for residents while reducing maintenance costs for the County. Current construction practices typically result in the removal of good quality topsoil from the site leaving landscape areas composed of less desirable B and C horizon subsoils which are low in organic content and nutrient levels. Construction soils may also have pH levels unsuitable for woody plants. Further, lawn areas are typically more intensively managed which is generally unsuited to the natural ecology and health of woody plants.

**How the program fulfills the Award Criteria through Innovation, Partnering or Collaboration and as a Model of other Localities.** Prince William County has a robust reforestation program that directly supports the restoration and recovery of the Chesapeake Bay. Since the program's inception in 2000 the County has utilized reforestation for denuded areas within Resource Protection Areas and floodplains as opportunities to convert these undevelopable lands from vacant fields needing regular maintenance to attractive, ecologically productive and low maintenance forest. Recently, the County

has expanded the concept to become an integral part of the design and review process for new County projects. This allows a more holistic look at forest and landscape management as well as opportunities to minimize the clearing of existing good quality forest. Utilizing reforestation in place of managed turf helps to reconnect disturbed land to contiguous forest conservation areas post-construction. This concept views each new development site as opportunity to build in reforestation from the start. This approach is popular with citizens, elected officials, and developers because it allows cost savings and trees to be preserved during the development process.

The future of this program includes on-site reservation of topsoil harvested from disturbed area for reuse within both reforestation and traditional landscape planting areas. This will foster healthier and longer lived plant communities and will allow greater infiltration of stormwater. Current construction practices typically result in the removal of good quality topsoil from the site, leaving landscape areas composed only of subsoils which are low in organic content, may have pH levels unsuitable for woody plant, contrasting soil textures and low nutrient levels. Further, lawn areas, which may contain numerous woody plantings, are managed for lawn which fosters microbial life and pH levels unsuited to the natural ecology and health of woody plants.

The expansion of this program started in 2016 with construction of our Central District Police Station and Fire Station #26. These 2 projects are located on the same parcel adjacent to a heavily wooded community. Community members expressed their desire to have the site reflect the forested nature of their neighborhoods. The parcel contained a mature and healthy stand of mesic hardwood forest with moderately sloping hills draining to 2 perennial streams protected by RPA. Although the RPAs and large areas of forest were conserved onsite, grading requirements resulted in less forest cover along the site

frontage than the community had hoped. The design also included several acres along the project flanks of graded slopes planned for turf which abut and tie into the conserved forest.

Prince William County, Department of Public Works formed a team composed of staff from the Facilities Construction Management Branch and the Watershed Management Branch to work with community members and address their concerns. Staff proposed reforestation as a means to increase forest cover along the site frontage. The community liked the idea and suggested expanding the reforestation to include the northern and southern flanks of the site where newly created slopes connect to the existing forest. The affordability of reforestation and the ecological connection to the existing forest made it and easy for staff to agree.

As a result, a total of 3 acres of land scheduled to be maintained as lawn was planted with native tree seedlings and whips (taller, relatively unbranched tree saplings). Stabilization changed from being achieved through lawn to being achieved through meadow plantings in some areas and mulching in others. Coordination with the Police and Fire Station representatives occurred throughout the process and included information on what to expect aesthetically while the reforested areas transition from small tree seedlings to a closed canopy forest.

Planning for the reforestation revealed that the soils in the planting areas were deficient in organic content and that the topsoil had been removed from the site. What remained were B and C Horizon soils, composed of dense and heavy clay content. Because topsoil from the site had not been reserved for reuse on the finished site, the contractor had to import organic matter and till it in to the planting

areas in order to achieve the contracted soil organic content. This brought to light the potential to revise County contracts to require existing topsoil to be reserved for reuse.

Once the costs of the project were solidified, Facilities Construction Management requested an analysis from our Buildings and Grounds Division on the potential cost savings resulting from the conversion of 3 acres of turf to trees. The analysis showed that through savings from maintenance costs in mowing and fertilization alone, the reforestation would pay for itself in less than 5 years. Over a 30-year period the total savings from reduced maintenance costs would exceed \$300,000.

The Police and Fire Station projects have been the impetus to include in this program early assessment of sites by County staff for opportunities to reduce clearing and convert areas that would typically be in turf to trees (new forest). Revision of the Facility Construction Management Reference Manual to require topsoil reuse on all new projects are underway.

**Short Overview:**

The continued loss of natural forest conditions through new development impacts water quality, air quality and wildlife habitat. Typical development practices remove valuable top soil from the site and replace former forest cover with lawn. As a result, new trees and shrubs installed have poorer health and aesthetics and are more likely to die before reaching maturity due to increased drought stress, loss of soil organic components and low nutrient levels. Turf requires more frequent maintenance such as mowing, fertilization, and pest control at both a fiscal and environmental cost to the County.

Prince William County has recently expanded the concept of our robust reforestation program to become an integral part of the design and review process for new County projects. This more holistic look at forest and landscape management identifies opportunities to minimize clearing good quality forest and to utilize reforestation in place of managed turf, reconnecting new trees to conserved forest. This approach is popular with citizens, elected officials, and developers because it brings cost savings and greater tree preservation during the development process.

The future of this program includes on-site reservation of topsoil harvested from disturbed areas (typically sold by the clearing contractor to off-site interests) for reuse within both reforestation and traditional landscape planting areas. This will foster healthier and longer lived plant communities and will allow greater infiltration of stormwater.

**Brief Summary** of the program for use in a press release.

The continued loss of natural forest conditions through new development impacts water quality, air quality and wildlife habitat. Typical development practices remove valuable top soil from the site and replace former forest cover with lawn. As a result, new trees and shrubs installed have poorer health and aesthetics and are more likely to die before reaching maturity due to increased drought stress, loss of soil organic components and low nutrient levels. Turf requires more frequent maintenance such as mowing, fertilization, and pest control at both a fiscal and environmental cost to the County.

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