

2018 Environmental Technical Manual

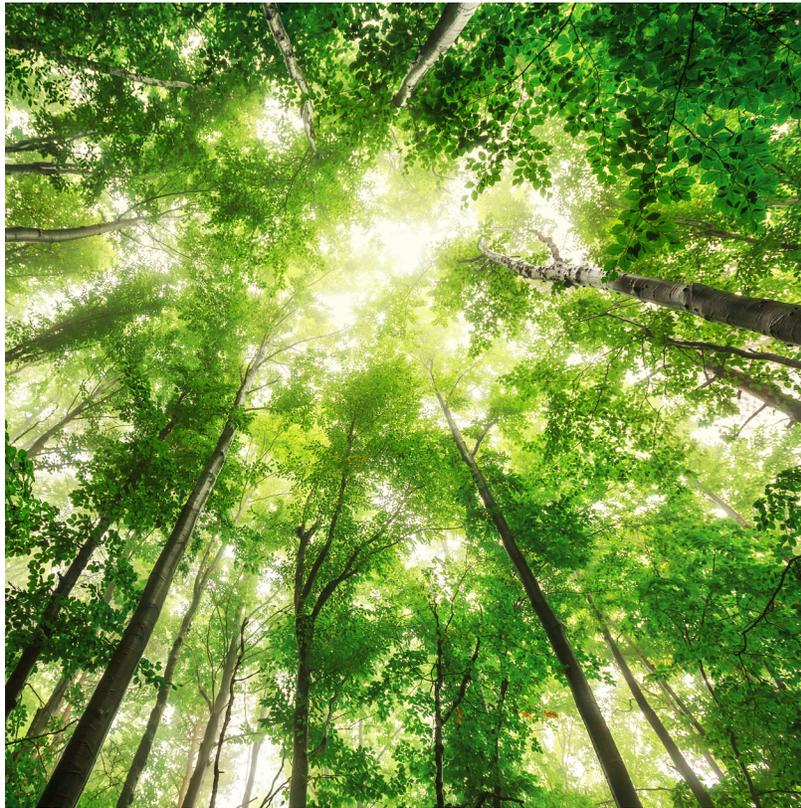


The Maryland-National Capital Park and Planning Commission
Prince George's County Planning Department

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2018 Environmental Technical Manual



The Maryland-National Capital Park and Planning Commission

Prince George's County Planning Department

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Introduction

1.0 Introduction

This Environmental Technical Manual provides guidance and direction on how to prepare environmentally related plans and documents for submission to Prince George's County in conformance with the appropriate sections of County Code. This technical manual is presented in five parts:

Part of the Manual	Corresponding County Code Provisions
Part A: Woodland and Wildlife Habitat Conservation Technical Manual	Subtitle 25, Division 2, and Subtitle 27
Part B: Preparation of a Natural Resource Inventory	Subtitles 4, 24, 27, and 32
Part C: Preservation, Restoration, and Enhancement of Regulated Environmental Features	Subtitles 24 and 27
Part D: Guidelines for Tree Canopy Coverage	Subtitle 25, Division 3, and Subtitle 27
Part E: Chesapeake Bay Critical Area (to be added at a later date)	Subtitles 5B, 24, and 27

The Environmental Technical Manual includes:

- Instructions on how to prepare plans required for the submission of various application types
- Process charts that explain various environmental review processes
- Decision matrices to determine which process is appropriate for the subject application
- Worksheets for the calculation of the requirements for each site
- Appendices that contain supporting information and copies of necessary forms

The technical manual was approved by the Prince George's County Planning Board on July 29, 2010. If amendments or revisions are needed, the appropriate pages or sections will be prepared for review and approval by the Planning Board. Updates should be checked regularly by going to the Prince George's County Planning Department's web site at www.pgplanning.org.

2.0 History of Environmental Regulations in Prince George's County

Prior to 1989, protection of environmental resources was limited to areas identified during the review of development applications. There were few County Code provisions to assist in the determination of which resources were most important. There also was no guidance regarding the processes for field identification of resources and documentation on the plans submitted.

In 1989, several pieces of environmental legislation were passed in Prince George's County that changed how development proposals were evaluated. The Prince George's County Woodland Conservation and Tree Preservation Ordinance was passed in 1989 to protect tree and woodland resources. Also in 1989, the Chesapeake Bay Critical Area (CBCA) regulations were adopted to protect the Chesapeake Bay and the resources closest to tidal waters. Both of these bills were followed by similar legislation at the state level. At that time, revisions were made to the Subdivision Regulations (Subtitle 24) that resulted in the protection of streams and wetlands and their associated buffers. The regulations regarding the CBCA are contained in the County Code in Subtitle 5B and are not covered in this technical manual. A placeholder is provided for a future chapter on implementation of the CBCA regulations.

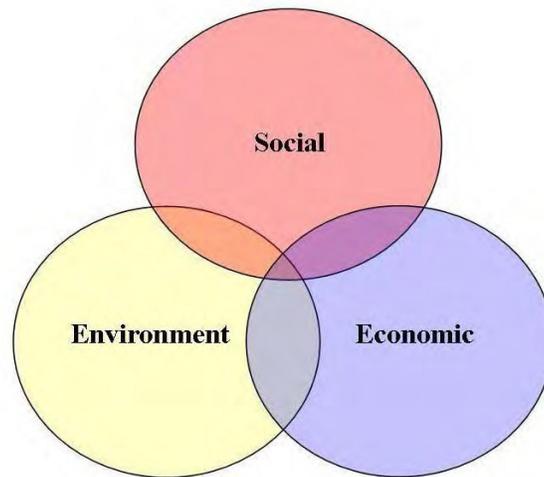
3.0 Why Conservation Is Important

As new neighborhoods, communities, commercial areas, and parks are designed, an evaluation needs to be made to ensure that the existing resources of the highest quality are preserved for future generations. When structures are built, it is inevitable that trees, woodlands, and other natural resources will be lost. The task is to determine how best to design the development, so that the impacts are avoided or minimized, and to ensure that the highest quality resources are preserved.

Much has been written about the global issues of climate change and sustainability. Natural areas are one of the backbones of the complex solutions to climate change and making communities sustainable for this and future generations. Trees produce oxygen and cool the earth. Streams in good health that are stable and well protected ensure a clean water supply. The availability of open spaces for recreation and quiet contemplation are important aspects of a healthy society.

Scholars speak of the three tenets of sustainability: economics, social capital, and a healthy environment. Economically, energy costs can be reduced by strategic planting of vegetation and the preservation of areas that are unsuitable for building, such as wetlands and floodplains. Socially, trees are planted for the beautification of neighborhoods—the shade of a large tree is a common social gathering place. Studies have shown that if people in hospitals can see trees from their windows, they will recover much faster than people without a view of trees, and the benefits to communities from trees and woodlands are many—reducing overall temperatures, cleaning the air, stabilizing the soil, and cleaning the water. (See Table I-1. Benefits of Trees and Woodlands.)

Figure I-1. The Three Tenets of Sustainability



The preservation of trees and woodlands is especially important to sustainable communities. Trees and woodlands form the fabric of the mid-Atlantic landscape. It was once said that a squirrel could dip a toe in the Atlantic Ocean and travel all the way to the Mississippi River without having to touch the ground because the forest canopy was so expansive. Today, trees and woodlands continue to provide shelter for both humans and wildlife and are an important factor to consider in relation to climate change and sustainability.

Trees and woodlands cool our homes, walkways, cars, parking lots, and buildings. Our energy costs would be measurably higher if it were not for trees and woodlands keeping the air cool. Trees planted in strategic locations around buildings can make buildings up to 20 degrees cooler. Table I-1 provides a list of some of the well-established benefits of trees and woodlands.

Table I-1. Benefits of Trees and Woodlands

Environmental Benefits	Economic Benefits	Health Benefits	Social Benefits
<p>Cleaner/Cooler Air Trees reduce air pollution by absorbing carbon dioxide and producing oxygen.</p>	<p>Increased Business Value Trees enhance community economic stability by attracting businesses and tourists.</p>	<p>Increased Physical Activity People are more inclined to get outdoors and exercise when their surroundings are greener. More physical activity results in fewer health problems.</p>	<p>Improved Well Being Trees help people relax. They help reduce aggression and lessen violence. People feel safer and more satisfied with green surroundings.</p>
<p>Cleaner Water Trees act as natural water filters to prevent harmful land pollutants from getting into our waterways.</p>	<p>Increased Property Value Healthy trees can add up to 15 percent to a residential property value.</p>	<p>Better Attention/Focus More time spent outside results in better attention and increased concentration inside.</p>	<p>Healthy Child Development Children in green spaces are more likely to be active with an increase of creative play. Trees contribute to healthy patterns of interrelation among adults and children outdoors.</p>
<p>Reduced Soil Erosion Tree roots increase soil permeability resulting in reduced surface runoff of water from storms and a reduction in erosion control practices.</p>	<p>Reduced Energy Costs Trees lower local air temperatures by transpiring water and shading surfaces resulting in reduced building energy usage.</p>	<p>Better Air Quality Trees remove or filter airborne pollutants and reduce the conditions that cause asthma.</p>	<p>Increased Physical Comfort Trees reduce wind and assist in the reduction of noise, provide shade, and improve psychological well-being.</p>
<p>Reduced Noise Pollution Trees absorb and block noise from the urban environment.</p>	<p>Reduced Health Care Costs Trees remove or trap lung-damaging dust, ash, pollen, and smoke from the air, encourage outdoor activity, and result in a healthier lifestyle.</p>	<p>Shorter Hospital Stays Trees speed healing and nurture positive attitudes in hospital patients who can see trees from their rooms.</p>	<p>Increased Social Activity Green spaces bring residents together more often. People are more involved in social activities in green environs than in areas that have few or no trees.</p>
<p>Wildlife and Plant Diversity Trees and associated plants create local ecosystems that provide habitat and food for birds and animals.</p>	<p>Lower Infrastructure Costs Trees affect the cost of storm water control by significantly slowing the movement of stormwater, which lowers the total runoff volume resulting in a reduction in the cost of storm water treatment.</p>	<p>Radiation Block Trees Provide shade and block ultraviolet radiation. Trees can block up to 95% of the sun's radiation.</p>	<p>Better Neighborhoods Residents get to know one another, producing stronger more cohesive neighborhoods</p>

Source: The International Society of Arboriculture, "Trees Are Good-Benefits of Trees," 2007.

Both an economic and social benefit of tree and woodland conservation is cleaner air. As just one example, asthma, the respiratory ailment most related to air pollution, has been increasing over the last few decades. According to the Centers for Disease Control, Maryland has among the highest percentages of teenage asthma in the United States (over 9.8 percent) and asthma is generally higher in urban and African-American communities. Through a concerted effort of tree and woodland conservation, combined with other strategies, these statistics can be reduced.

4.0 Conservation Vision for the Future

On June 14, 2005, the Countywide Green Infrastructure Plan was approved. This plan is the first comprehensive functional master plan ever developed for environmental ecosystems in Prince George's County and the first of its kind in the nation. The plan's purpose is to provide:

“A comprehensive vision for conserving significant
environmental ecosystems in Prince George's County”

This plan guides development, green space protection, and mitigation activities and implements the long-range vision for preserving, protecting, enhancing, and restoring contiguous networks of environmentally important areas in the County by the year 2025. The Green Infrastructure Plan contains an overall goal, measurable objectives, and policies and strategies for implementation.

The Green Infrastructure Plan is used as a guide for decision-makers in both the land development process and when making decisions on public land acquisitions. It contains eight measurable objectives with regard to implementation that provide additional guidance for implementing the vision:

1. By the year 2025, ensure that 75 percent of the green infrastructure network acreage meets the definition of countywide significance.
2. Ninety percent of the land acreage purchased for environmental preservation using public funds should be located within the green infrastructure network. If a portion of a property purchased is in the green infrastructure network and a portion is outside of the network, for the purpose of this calculation, the entire acreage purchased will be counted toward meeting this objective.
3. In new subdivisions in the Rural Tier and outside of approved growth centers and corridors in the Developing Tier, ensure that 100 percent of impacts to regulated areas are limited to unavoidable impacts, such as those for road and utility crossings.
4. By the year 2025, less than 25 percent of countywide net losses of woodland cover should occur within the green infrastructure network.
5. By the year 2025, improve the water quality in each major watershed to elevate the Benthic Index of Biological Integrity (IBI) rating of the watershed by at least one category using, as a baseline, the 1999–2003 biological assessment of the streams and watersheds of Prince George's County completed by the Department of Environmental Resources (DER).
6. By the year 2025, improve the stream habitat in each major watershed to elevate the habitat rating of the watershed by at least one category using, as a baseline, the 1999–2003 biological assessment of the streams and watersheds of Prince George's County completed by DER.
7. Each year, strategically target 100 percent of off-site forest mitigation acreage into the green infrastructure network or adjacent to streams outside of the green infrastructure network. Fifty percent of the forest mitigation acreage should be targeted to improving water quality by establishing, enhancing, or restoring riparian forest buffers.
8. Each year, 100 percent of off-site environmental mitigation projects (wetland, forests, stream restoration, etc.) should be targeted to priority areas identified in the countywide catalog of mitigation sites. A minimum of 50 percent of the mitigation projects should be targeted to enhance the water quality of the major watershed in which the project generating the need for mitigation is located.
9. The update of the environmental regulations implements many of the strategies needed to meet these objectives. The technical manual assists in the implementation of the Green Infrastructure Plan by providing guidance on the structural elements needed to meet the requirements of the updated regulations.

5.0 Addition of Tree Canopy Coverage Requirements

In the 2010 update to the environmental regulations, a new provision was added that requires a minimum amount of tree canopy coverage on all new and redevelopment sites. Minimum tree canopy requirements have been in place in several jurisdictions since the early 1990s, and much success has been gained in these communities.

The minimum standards adopted in the 2010 update reflect the percentages that have been used in Fairfax County, Virginia, since 1989. With few exceptions, applicants have been able to meet these requirements on-site and have successfully regrown some of the tree cover lost to development. As portions of Prince George's County become more developed, it will be increasingly important to weave tree canopy coverage into the fabric of these communities.

6.0 Environmental Regulations and the Land Development Process

The existing natural resources of a site are evaluated throughout the land development process. The 2010 update to the environmental regulations require the submission of a Natural Resource Inventory (NRI) for all applications to ensure that regulated environmental features are identified as early in the process as possible. Table I-2 illustrates the major steps in the land development process.

Table I-2. The Four Phases of Land Development

<p>PHASE 1 Site Analysis and Feasibility Study (Simultaneous tasks conducted by the private sector)</p> <ul style="list-style-type: none"> • Market analysis to evaluate timing, budget, and demand • Site visit/analysis to determine what portions are developable • Regulated physical features examined (environmental, historic etc.) • Determination made whether rezoning necessary • Determination made whether special exception required • Decisions made for public/private water and sewer • Existing planning documents reviewed • Determination made whether project is feasible 	<p>PHASE 2 Engineering and Plan Review (Sequential tasks conducted by private/public sectors)</p> <p>Initial Stage:</p> <ul style="list-style-type: none"> • Rezoning if required • Public water and sewer category change if required • Natural resources identified • Preliminary engineering design • Conceptual tree conservation plan • Conceptual stormwater management plan • Perc testing if well and septic site • Site development (stormwater) concept and approval • Phase 1 archeological study if required • Traffic study if required <p>Detailed Stage:</p> <ul style="list-style-type: none"> • Final engineering design • Street grades established • Water and sewer layout • Detailed tree conservation plan • Phase 2 archeological study if required • Technical stormwater management design • Final road and utility layout • Final well and septic design • Plat preparation and recordation • Final stormdrain, sediment control, and water and sewer designs
<p>PHASE 3 Permitting</p> <ul style="list-style-type: none"> • WSSC permits (utility extensions, connections, permitting) • DPW&T permits (grading, stormdrain, street construction, other) • Health Department permits (well and septic) • Other permits (wetland impacts, street construction—state highway access) • Utility coordination (site plans to electric, gas, phone, and cable companies) • DER permits (grading, final building permit issuance) 	<p>PHASE 4 Construction and Inspection</p> <ul style="list-style-type: none"> • Pre-construction meeting held • Permit issued • Initial inspection approval • Clearing and rough grading phase • Infrastructure phase • Site development phase • Use and Occupancy issued • Final inspection approval • Bond release

Source: Adapted from the Prince George's County Site Development Forum Manual, 2007

As shown in Table I-2, there are four phases in the overall process of land development. Table I-3 generally describes the required information for each application type.

Table I-3. Required Submittals by Application Type

Application Type	Forest Stand Delineation Required ¹	Approved Natural Resource Inventory Required ² (NRI)	TCP1 or WCO-EX Required	TCP2 or WCO-EX Required	CBCA Conservation Plan ⁵
Basic plan	X				
Zoning Map Amendment	X ³				
CDP or CSP		X	X		
Conservation Subdivision		X	X		
Preliminary Plan of Subdivision		X	X		
DSP, SDP or SP		X		X	
Special Exception		X		X	
SWM Concept		X			
Grading, Erosion, Sediment Control		X			
Grading or Building Permits				X	
All Permits in CBCA Overlay Zone					X
Zoning Ordinance Departures ⁴		X			
CBCA Conservation Plan		X			
Woodland Conservation Letter of Exemption (WCO-EX)	X				

1. See Sections 27-159 and 27-179 for requirements for certain Zoning Map Amendment Applications. See Section 25-123 for submission of all other applications. The type of FSD required (simplified, intermediate, or detailed FSD) depends on the site features or as determined by the Planning Director or designee. The FSD requirements may be waived by the Planning Director or designee if sufficient information is provided by the applicant or can be evaluated through other available sources such as PGAtlas. When an FSD is prepared and reviewed as part of valid NRI, a separate FSD is not required unless it is over 5 years old.
2. A NRI may be waived for certain applications indicated above if it meets the criteria described in Part B Section 1.1.2, Table B-1.
3. A forest stand delineation is required only for Zoning Map Amendments applications for the R-P-C zone or a Comprehensive Design Zone.
4. If a departure is part of an application that includes a TCP2 or WCO-EX, a separate submittal of these documents is not required. The NRI requirement for a stand-alone departure may be waived by the Planning Director or designee if sufficient information is provided by the applicant or can be evaluated through other available sources such as PGAtlas. Stand-alone nonconforming use applications have no environmental submittal requirements.
5. A CBCA conservation plan is only required for projects that do not meet the criteria for a staff level review. The criteria can be found in 5B-116.

The technical manual describes the plan specifications and preparation processes related to each application. When comments are received during the review of any of the plans covered in this manual, applicants are required to submit a comment/response letter to speed the review of the plans and provide a description of the applicant's understanding of the comments provided. As noted in Subtitle 25, the plans showing the existing environmental information must be at the same scale as the associated submittals.

Additional submittal requirements to address potential issues that vary from site to site, such as the presence of Marlboro clay, noise, and/or variance applications, may also be required.

7.0 Data Sources for Plan Preparation

The Index of Data Sources (see Appendix—Introduction) includes a complete list of sources for obtaining the information required to prepare a TCP or NRI. This includes, but is not limited to, soil, floodplain, specimen tree, Marlboro Clay, and many other required data. Other sources may be used and must be noted on the plan and are subject to approval by the Planning Director or designee.

8.0 Standard Symbols and Sheet Layouts

Standard symbols (see Appendix—Introduction) are required to be used on all plans referenced in this manual. The use of standard symbols will reduce review times and provide clarity on detailed plans. Alternate symbols may be used only if they are equivalent to those provided in Appendix—Introduction and provide the same level of clarity. Alternate symbols are subject to review and approval by the Planning Director or designee.

The standard sheet layout is to be used for all plan submittals and should be customized for the different plan types discussed in the technical manual. In general, the title block, professional certification, tabulation tables (either the TCP worksheet or other tables depending on the plan type), and the EPS approval block shall be placed in the lower right-hand corner so that when the plans are folded this information is easily referenced. The legend must be located as closely to the lower right-hand corner as possible to allow for easy reference of the symbols used on the drawing. The scale of the plan must be listed in the title section of the drawing. A bar scale must be shown on all sheets. Additional site statistics and required plan notes must be provided in the upper right-hand corner of the sheet. A sample sheet layout to be used for all environmental plans being submitted for review and approval can be found in Appendix—Introduction. An overall cover sheet shall be provided for multisheet plans containing three or more sheets. The cover sheet shall provide a key to the areas covered by each sheet. The key must be provided on each sheet. Color copies of required plans may be submitted only if all features shown on the plan are fully legible when the plans are reproduced in black and white.

9.0 Preparation of Plans by Qualified Professionals

The Prince George's County Code requires that a person be a qualified professional to submit certain plans for review and approval. This requirement ensures that the plans have been prepared according to industry standards and meet the minimum requirements of the County Code and the Environmental Technical Manual.

To attain qualified professional status in Prince George's County, a person must be a licensed forester, a licensed landscape architect, or a certified arborist. If these qualifications cannot be verified online or if a person is not listed on the Maryland Department of Natural Resources' (DNR) qualified professionals list, documentation of licensure or certification may be required.

Any person who has attained qualified professional status through the DNR program is automatically eligible to submit plans in Prince George's County. A person may also seek qualified professional status solely in Prince George's County by meeting the following criteria as required by COMAR 08.19.06.01:

An individual may be approved by Prince George's County as a qualified professional if the individual:

1. Possesses the following education or experience requirements:
 - a. A four-year degree in natural resource science, natural resource management, landscape planning, or environmental planning.
 - b. Four years of professional experience in natural resource science, natural resource management, landscape planning, environmental planning, or the equivalent as determined by the Planning Director or designee.
 - c. A graduate degree in natural resource science and one year of professional experience.
2. Has shown the ability to meet the obligations required by the Planning Department to prepare a forest stand delineation and a tree conservation plan.
3. Has satisfactorily completed a forest conservation training program approved by DNR.

A certification block must be provided on all plans. Blank certification blocks are provided in Figures I-2 and I-3. By signing the plans, the qualified professional is certifying that the information on the plans is true and accurate and meets the minimum submittal standards provided herein. They are, through their signature, certifying that they have either personally prepared the plans or reviewed the work of others for accuracy and completeness. This requirement applies to all qualified professionals. If the professional has a valid seal, then both the certification block and professional seal must be shown on the plans.

Figure I-2. Blank Certification Statement to be used by the Qualified Professional for Forest Stand Delineation and Tree Conservation Plan Submissions

<p>QUALIFIED PROFESSIONAL CERTIFICATION</p> <p>This plan complies with the current requirements of Subtitle 25 and the Woodland and Wildlife Conservation Technical Manual.</p> <p>Signed: _____ Date: _____</p> <p>(Place printed name, address, phone number, and e-mail address of qualified professional below the signature.)</p>

Figure I-3. Blank Certification Statement to be Used by the Qualified Professional for NRI Submissions

<p>QUALIFIED PROFESSIONAL CERTIFICATION</p> <p>This NRI complies with the current requirements of Prince George's County Code and the Environmental Technical Manual.</p> <p>Signed: _____ Date: _____</p> <p>(Place printed name, address, phone number, and e-mail address of qualified professional below the signature)</p>
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