

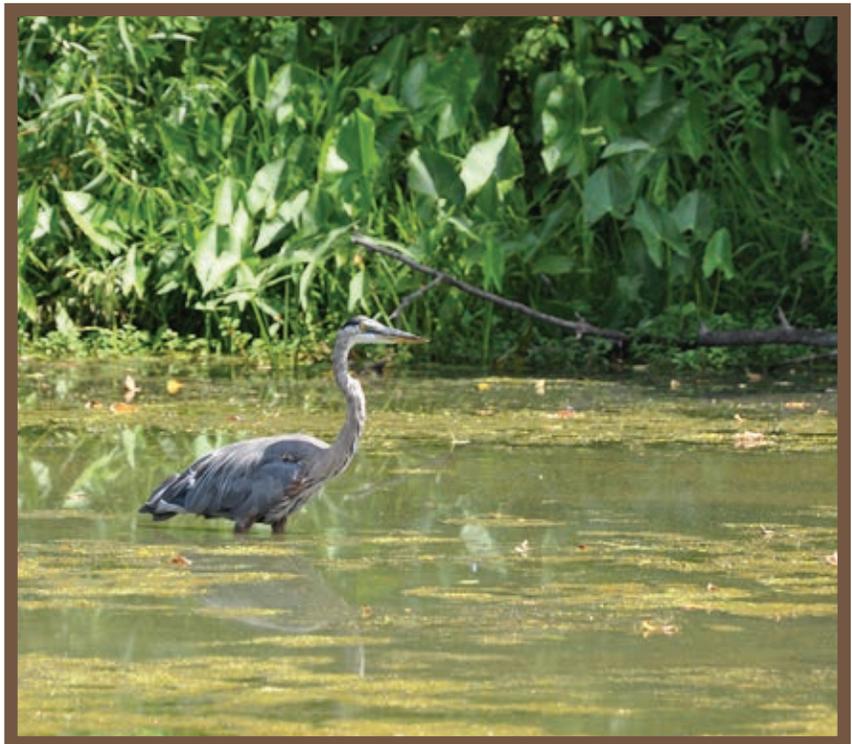


IMPLEMENTATION TOOL KIT

Introduction

This Implementation Tool Kit is to be used by municipalities and other greenway advocates as a means to explore potentially new approaches to natural and cultural resource conservation. It also provides vital information for those interested in protecting open space as it identifies unprotected parcels of land that have varying levels of conservation value. The Tool Kit is organized according to the following:

- 1. Regulatory and non-regulatory tools** provide a brief introduction to the issues that each tool addresses, a description of how the tool can be implemented, its applicability in the Brandywine Creek Greenway, and a list of other resources that are available to learn more about the tool.
- 2. Four resource summary maps** highlight parcels of land with important water, agricultural, cultural, and natural resources (habitat) to be considered for conservation or protection. The maps will help municipalities to identify parcels of land that have important resources that could be considered by landowners for conservation and should be considered by municipalities during the land development process if private land conservation is not an option. The summary maps are derived from more detailed inventory maps which are provided in the Appendix.
- 3. Two maps** highlight opportunities for **restoration of woodlands and water resources**.
- 4. Model natural resource protection ordinances** are included that can be modified to suit each municipality and adopted by Board resolution. The ordinances include provisions for conservation of steep slopes, woodlands, wetlands, riparian buffers, and floodplains. Municipalities that wish to further enhance their natural resource protection regulations can consider a more proactive riparian buffer ordinance (prepared by the Brandywine Conservancy and promoted by the Pennsylvania Land Trust Alliance) provided in the Appendix.
- 5. A comprehensive list of funding sources** is provided that is relevant for a range of planning and implementation projects.
- 6. Included in the appendix** is a model Riparian Buffer Protection Overlay District offered by the Pennsylvania Land Trust Alliance and written by the Brandywine Conservancy. A series of inventory maps can be used as a baseline reference for new conservation projects—the data from these maps was used as a basis for the resource summary maps. Also included are detailed maps of Coatesville and Downingtown, Chester County Cultural Heritage Interpretive Regions Map (2011), and Chester County Historic Resources Map.



Fishing in Kardon Pond

1. Regulatory and Non-regulatory Tools

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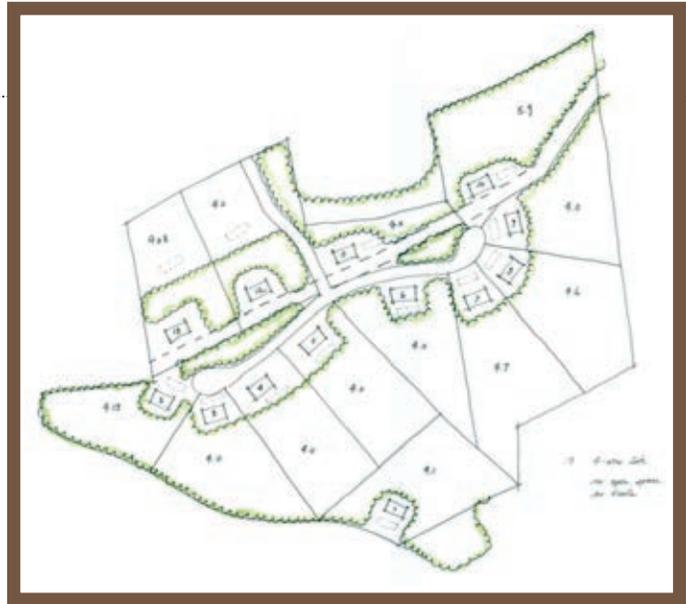
Regulatory Tools

Sketch Plan

Introduction

What issues does this tool address?

In many instances, when a preliminary plan is submitted for a land development application, the site engineering is substantially complete and the applicant has a considerable investment in the preliminary plan. The applicant is often reluctant to make dramatic (or even modest) changes in the final plan. The Sketch Plan option provides an incentive for the applicant to meet with municipal officials in order that both may discuss the land development project at the conceptual level before preliminary engineering begins.



Hand-drawn conceptual sketch plan, Kennett Township

What does this tool accomplish?

Discussion allows the municipality and the developer to articulate their goals for the project and to discuss site layout and design alternatives. It benefits both parties; by facilitating the approval process for the developer (a financial savings), the municipality can achieve its community development objectives.

Implementation

How is this tool implemented?

1. By updating the Comprehensive Plan, and Official Map to articulate community development objectives.
2. Through an amendment to the “Plan Process and Content” provisions in the SALDO Procedure: Sketch Plan and Site Visit; Preliminary Plan; Final Plan.
3. The sketch plan option can be bundled with ERSAP, Conservation Design Option, Natural Features Protection Ordinance, Historic Resource Protection Ordinance, or an EAC (optional).

Applicability

How can this tool be used in the BCG?

- Relevant for municipalities that are in the path of new development or potentially subject to future development pressures.
- Effective in municipalities with scenic roads or byways, scenic rivers, historic resources, prime agricultural soils, community trail plans, transportation improvement plans, open space preservation plans, and/or greenway plans.
- To help balance new development with resource protection.
- Requires municipal representatives to be willing to accommodate an additional step in the land development application process.
- Developers should not expect to achieve maximum density under the zoning.

More information

Where can one learn more about this tool?

- Examples to review include: Kennett Township SALDO Subsection 206-305; and Thornbury Township, Delaware County SALDO Subsection 22-402.

Natural Resource Protection Ordinance preparation assistance

- The Brandywine Conservancy.
- Natural Lands Trust.
- Chester County Planning Commission.



A sketch plan for Ponds of Woodward was crafted to preserve the orchards and farm buildings in open space.

Conservation Design

Introduction

What does this tool accomplish?

- Avoids many of the negative aspects of sprawl.
- Fits new development into the character and landscape of the community.
- Enhances resource protection initiatives.
- Implements specific planning objectives.

Implementation

How is this tool implemented?

- Through local land use regulation.
- Usually offered as a zoning option to conventional lot-out development.
- Permitted “by right” or via conditional approval.
- “Four-step design process.”
- Zoning provisions provide for overall density, use types & lot sizes, and open space.
- Design standards may be provided in Zoning or in the SALDO.

Keys to Ultimate Effectiveness of Conservation Design

- Adoption of flexible regulatory provisions.
- Careful plan review.
- Deliberate crafting of conditions of approval.
- Education regarding landowner options.

At Ponds of Woodward the conservation design clustered homes around scenic water features and preserved orchards and pastures in open space.



Success

Where has this tool been used successfully?

Upper Uwchlan Township, Kennett Township, and South Coventry Township.

Applicability

How can this tool be used in the BCG?

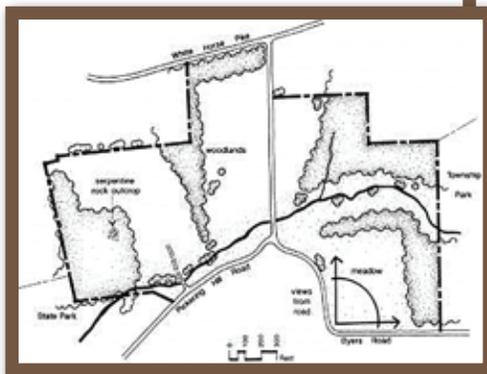
- The Conservation Design tool is already used broadly and variably in the Brandywine Creek Greenway region.
- The tool is applicable in every township, less so in the boroughs due simply to lack of larger-scale developable land.
- Successful use of Conservation Design, whether termed “Open Space Design” or “Flexible Development” or “Cluster Development,” depends on both the design standards for development and open space AND the degree to which more conventional development options are more or less favorable for developers.

More information

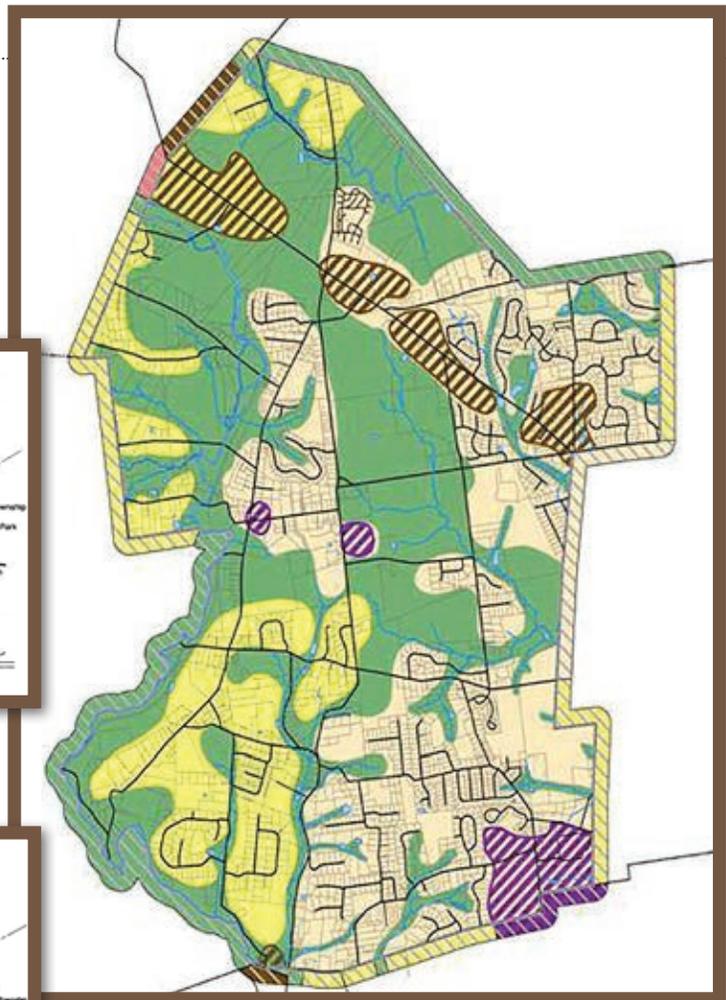
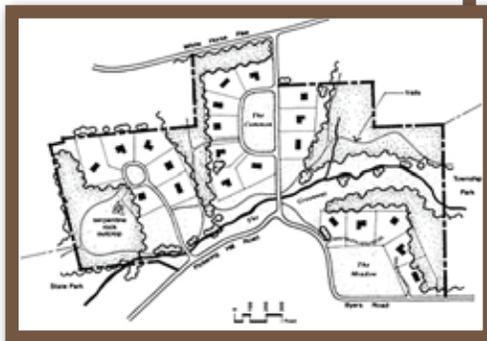
Where can one learn more about this tool?

Contact:

- Chester County Planning Commission.
- The Brandywine Conservancy.
- Natural Lands Trust.



Natural features are identified first (above) then development is clustered within areas with the least disturbance to natural areas (below).



Development Clusters and Greenways, West Brandywine Township.

Existing Resources and Site Analysis Plan (ERSAP)

Introduction

What issues does this tool address?

A typical land development application is required to provide site information regarding contours, wetlands, floodplains, and steep slopes. However, there are often no provisions in the municipal ordinance for the applicant to identify important natural features such as: sensitive habitat; specimen trees; high quality woodlands; woodland interior; hydric soils; site hydrology; prime agricultural soils. Municipal ordinances also typically do not require the applicant to consider site context for: a regional complex of natural areas; connections among habitat areas; habitat corridors; woodland complexes; existing or planned greenways or trails; or alternative transportation.

What does this tool accomplish?

The ERSAP provision in a municipal SALDO helps municipal officials to understand which areas on a proposed land development site have the least sensitive natural features and are most suitable for development. An ERSAP empowers municipal officials to require that the most sensitive natural features are left undisturbed. This approach to site design is often referred to as Conservation Design or Low Impact Development, and it is consistent with stormwater best management practices.



Early in the land development process, the applicant can be required to provide information regarding sensitive and significant natural and cultural features such as mature woodlands (green) prime agricultural soils (yellow) and hydric soils (blue).

Implementation

How is this tool implemented?

1. Prepare a Botanical Survey, Woodland Classification Study, and Exceptional Natural Areas Inventory for the municipality.
2. Draft a Natural Resource Protection Ordinance update to the SALDO.
3. Bundle the ordinance update with a Conservation Design option, stormwater ordinance, and/or sketch plan review option.

Applicability

How can this tool be used in the BCG?

- Relevant for municipalities that are in the path of new development or potentially subject to future development pressures.
- Effective in municipalities with woodland interior habitat, wetlands, Pennsylvania Natural Diversity Inventory sites, Important Bird Areas, confirmed populations of state-endangered or threatened plants or animals.
- Suitable in municipalities with sensitive natural features that are not protected by state and/or federal regulation (such as floodplains, surface waters, wetlands).

More information

Where can one learn more about this tool?

Examples to review include:

- Pocopson Township SALDO Subsection 190-23.
- Upper Uwchlan Township SALDO Subsection 162-9.D.

Natural Resource Protection Ordinance preparation assistance:

- The Brandywine Conservancy.

Floodplain Regulations

Introduction

What issues does this tool address?

Flooding occurs even under natural conditions. Flooding is known to worsen as the result of the changes in land surfaces resulting from land development. Flooding directly destroys valuable property and impacts human health. Pennsylvania suffers from one of the nation's greatest losses in terms of flood-linked damage to property as well as loss of life, injury, flood-related human health impacts, etc. Indirectly, flooding and related changes to natural watershed hydrology (e.g., increased stream "flashiness") translate into reduced groundwater recharge, reduced stream base flow, increased streambank erosion, and a general reduction in aquatic richness and diversity in stream systems. It is important to note that as watersheds develop, the nature and extent of flooding worsens—flood events become more frequent and cresting of flood events grows ever higher such that floodplains grow ever broader.



Floodplain along a small tributary stream to the Brandywine Creek

What does this tool accomplish?

A municipality can enact floodplain regulations to limit flooding damage directly to both property and human health as well as to reduce flooding itself. Reducing flooding also results in indirect environmental benefits including reduced streambank erosion and scouring of streambeds, reduced sedimentation, and improved water quality. The net benefits lead to an improved benthic and overall aquatic habitat.

Implementation

How is this tool implemented?

Historically, municipal floodplain regulations in Pennsylvania municipalities have been driven by national Federal Emergency Management Act (FEMA) Flood Insurance Administration (FIA) insurance requirements which are at the core of the national Flood Insurance Program (FIP). In short, if property owners are to be able to purchase heavily subsidized flood insurance (typically very important), municipalities must be members in good standing in the FEMA program and enact minimum FEMA floodplain regulations. These minimum FEMA regulations have a major focus on potential flooding damage to property, as well as human health, requiring that structures be constructed in ways to elevate primary living spaces above 100-year flood elevations. Also, major flooding pathways, or floodways, cannot be constricted as the result of new structures which impede flood flows. It should be noted that with the increase in coastal and non-coastal flood damage across the country in recent years, FEMA is making changes to minimum requirements and making program standards more rigorous.

Central to the FIP are FEMA's floodplain maps with their calculated floodplain elevations linked to historical flooding and flood protection/risk zones. These flood maps may be somewhat outdated and do not reflect overall changes to upstream watershed land use and hydrology, coupled with more recent changes in precipitation/climate data. Typically, flooding resulting from a 1-year storm (2.4 inches of rainfall in a 24-hour period in SE PA) appears to be

causing worsened flooding in many downstream municipalities; furthermore, 1-year storms appear to be happening more and more frequently—for whatever reason. In sum, many municipalities are learning that their existing floodplain regulations (typically located in their zoning ordinances) are outdated and not responsive to emerging floodplain management issues and needs. Even setting aside issues of protecting environmental functions and eco-services, conventional floodplain management doesn't seem to be effectively protecting property and safeguarding human life.

From an environmental perspective, minimum FEMA standards have their shortcomings. Minimum standards typically do not limit or manage the extent of clearing, grading, and removal of existing floodplain vegetation, all of which have significant water quantity, flow attenuation, and water quality impacts. Naturally vegetated riparian and floodplain areas slow flood flows, absorb flood waters, and filter sediment and other pollutants. Some municipalities have added additional environmental floodplain management standards to their ordinances, though few are as restrictive as they should be (the Conservancy has model environmental provisions which it recommends that Greenway municipalities adopt).

Applicability

How can this tool be used in the BCG?

Rigorous floodplain regulations should be adopted by all municipalities in the Greenway. These floodplain regulations should be coordinated with watershed and urbanization context (i.e., location in the watershed in terms of stream order, and extent of development occurring upstream and downstream. Floodplain regulations should be integrated with forested riparian regulations as well to avoid duplication and promote clarity and simplicity of application.

More Information

Where can one learn more about this tool?

- Virtually all municipalities within the Greenway have adopted floodplain regulations, typically residing in their respective zoning ordinances. Substantial information is available regarding floodplain regulations at www.fema.gov and www.fema.gov/national-flood-insurance-program.
- Contact the Municipal Assistance Program at the Brandywine Conservancy for additional help.
- Chester County Planning Commission.
- Chester County Water Resources Authority.

Public Land Dedication & Fee-in-Lieu

Introduction

What issues does this tool address?

Communities need open space for passive and active recreation and natural areas where wildlife can flourish.

What does this tool accomplish?

Municipalities can require developers to provide land for this purpose, while also permitting several voluntary alternatives, including a fee-in-lieu. Public dedication is sometimes called “mandatory dedication” by land-use planners.

Implementation

How is this tool implemented?

- A municipality must first adopt a Parks and Recreation Plan as an element of their comprehensive plan.
- Then, it amends an existing, or adopts a new, subdivision and land development ordinance that provides for public dedication. This ordinance must contain definite standards (such as number of acres per person).

Voluntary alternatives to public dedication can be offered but not mandated

- Developers may pay a “fee-in-lieu” to be used for parks and rec facilities accessible to the new development.
- Developers may construct recreational facilities.
- Developers may reserve private land within the development for parks and rec use.

If fees-in-lieu funds are collected:

- **Time:** They must be used within 3 years.
- **Used for:** They can be used to buy parkland, trails, provide infrastructure, buy new equipment, or improve existing parkland that is accessible to the new development.
- **Not used for:** They cannot be used to maintain existing parkland or buy maintenance equipment.

Success

Where has this tool been used successfully?

This tool has been used with great success in hundreds of municipalities statewide, concentrated in high-growth areas such as Chester County. Local examples include Pocopson, East Brandywine, East Bradford, and Upper Uwchlan townships.

Applicability

How can this tool be used in the BCG?

This tool helps to achieve a number of the goals of the Greenway, including: non-motorized transportation, conservation, recreation, and aesthetics. Specific functions that public land dedication can fulfill include the preservation of open space and the provision of recreational trails and facilities for residents.

More Information

Where can one learn more about this tool?

- The Brandywine Conservancy.
- Chester County Planning Commission.

Public Dedication of Land and Fees-in-Lieu for Parks and Recreation:

1. <http://conservationtools.org/guides/show/17>
2. http://conservationtools.org/libraries/1/library_items/253-Public-Dedication-of-Land-and-Fees-in-Lieu-for-Parks-and-Recreation



Covered bridge along Buck Run

Resource Protection Regulations

Introduction

What does this tool accomplish?

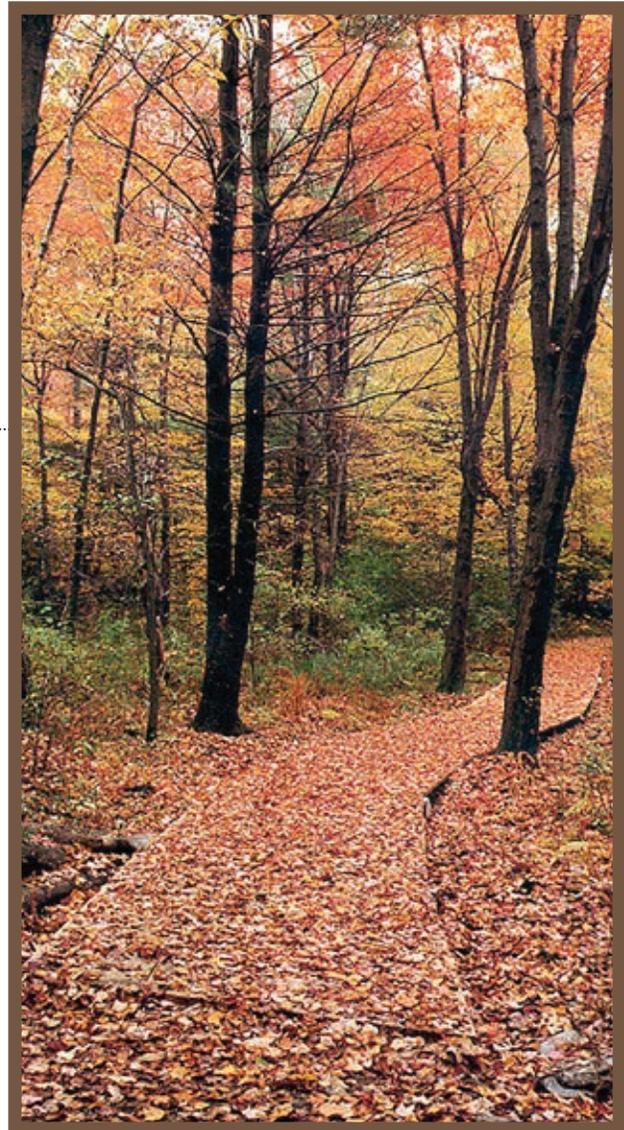
Promoting the conservation of a broad array of resources while providing for on-going community development. Regulations can protect:

- Flood Plains, Wetlands, and Steep Slopes.
- Riparian Buffers.
- Woodlands.
- Unique Natural Areas.
- Greenway Corridors.
- Scenic Landscapes.
- Historic Resources.

Implementation

How is this tool implemented?

- Most resource protection regulation is accomplished via the Zoning Ordinance, which applies all the time and not just to development scenarios.
- Some municipalities regulate certain resources within the SALDO only, so as not to apply rigorous resource protection standards to the average homeowner.
- Resource protection regulations that may stipulate use limitations or outright prohibitions, or may more liberally apply disturbance limitations and/or performance standards.
- Historic resource protection requires provision for viable economic re-use or adaptation.
- A clear and accurate inventory of all subject resources serves as an import qualifier to resource protection regulation.
- All resource regulation should take into account the unique character of individual properties and the need for landowners to undertake lawful land use.



A boardwalk meanders through mature woodlands

Success

Where has this tool been used successfully and what were the outcomes?

- Every municipality is subject to Flood Plain regulation and Wetland regulation which have minimized disturbance of these resources in recent decades.
- Most municipalities regulate the disturbance of steep slopes with relative success.
- Few municipalities regulate unique natural areas or riparian buffers beyond regulation imposed by the state.
- Limited regulation has successfully been imposed at the municipal level for woodlands, greenways, scenic landscapes and historic resources. Examples in the Greenway region include Pennsbury, Pocopson, Honey Brook, Upper Uwchlan, and East Bradford Townships, to name a few.

Applicability

How can this tool be used in the BCG and in which municipalities might it be suitable?

- Local regulation of natural and cultural resources can be enacted or enhanced in every municipality within the Brandywine Creek Greenway region.
- Suitability of specific forms and applicability of regulations are dependent upon both the unique characteristics of each municipality (e.g., what resources are present?) and the community conservation and development objectives.

More Information

Where can someone learn more about this tool?

- Chester County Planning Commission.
- The Brandywine Conservancy.

Transferable Development Rights

Introduction

What does this tool address?

- Loss of farms and forests.
- Development impacts to watersheds.
- Suburban sprawl.

What does this tool accomplish?

- Saves land and manages growth.
- Pays landowners for development rights.
- Balances property values.



The landscape using TDR to protect farms and forests from suburban sprawl

Implementation

How is this tool implemented?

Established in zoning by:

- Creating the sending areas—resources to be protected permanently.
- Creating the receiving areas—development to be accommodated through planning.
- Administering the program—simple tracking of the TDR exchanges.

Success

Where has this tool been used successfully?

Chester County—Honey Brook Township; West Vincent Township. Lancaster County—Warwick Township; Penn Township; Caernarvon Township.

Applicability

How can this tool be used in the BCG?

- Can be applied to remaining areas of farms and forests.
- Could help limit public infrastructure encroachment.
- Discourage subdivisions outside of growth areas.
- Utilize urban areas for intended development.
- Partner with land trusts to encourage tool use.

More Information

Where can one learn more about this tool?

- The Brandywine Conservancy's publication—*Transfer of Development Rights, A Flexible Option for Redirecting Growth in Pennsylvania*.
- Chester County Planning Commission.
- <http://pa-lancastercountyplanning.civicplus.com/documentcenter/view/162>
- <http://conservationtools.org/guides/show/12-Transfer-of-Development-Rights>
- <http://www.beyondtakingsandgivings.com/tdr.htm> (An up-to-date TDR website)

Stormwater Management and Best Management Practices (BMPs)

Introduction

What issues does this tool address?

Rapid development has caused issues with flooding and water quality in many of our streams—especially in urbanized areas. These problems are caused by a reduction in forest cover and an increase in impervious surfaces in our urban and suburban areas. Impervious surfaces such as roads, driveways, and rooftops prevent stormwater runoff from naturally soaking into the ground. Stormwater management and BMPs focuses on mitigating the negative impacts of stormwater to our properties and natural resources.



What does this tool accomplish?

The Stormwater Management tool provides resources for municipalities to address stormwater-related water resources issues within their communities. Stormwater Best Management Practices (BMPs) are innovative approaches, including activities, facilities, designs, measures, or procedures, used to manage stormwater impacts from new development or redevelopment. Quantitatively, stormwater management is intended to reduce runoff volumes and slow peak runoff rates, to minimize downstream flooding, protect groundwater and surface water resources, and reduce property damage and loss of real estate. Qualitatively, BMPs have been proven to reduce the levels of sediment, nutrients, toxics, and other pollutants in streams. They protect water quality for habitat of aquatic species, minimize the cost of water treatment for our drinking water supply, and improve the overall quality of life in the watershed. BMPs can be used to satisfy increasing regulatory requirements of the PA Department of Environmental Protection and the US Environmental Protection Agency, such as Total Maximum Daily Loads (TMDLs) and National Pollutant Discharge Elimination System (NPDES) permits.

Implementation

How is this tool implemented?

Stormwater BMPs are commonly grouped into two categories “structural” or “nonstructural” BMPs. Structural BMPs consist of permanent physical devices or practices that are installed to capture and treat stormwater runoff. Structural BMPs include, but are not limited to, a wide variety of practices and devices from large-scale retention ponds and constructed wetlands to small-scale underground treatment systems, infiltration facilities, filter strips, bioretention, wet ponds, permeable paving, vegetated swales, riparian or forested buffers, and detention basins. Generally, nonstructural BMPs refer to operational, behavior-related, planning, or design strategies that attempt to minimize the generation of stormwater runoff and pollutants in stormwater runoff. For example, municipal ordinances provide primary means of locally regulating stormwater and balancing development activities with water resource needs and values. Local ordinances are often guided by standards required by county, state, and federal agencies.

Success

Where has this tool been used successfully?

All Chester County municipalities have adopted Act 167 Stormwater Ordinances. In addition, when stormwater BMPs are utilized and maintained properly, there is proven success in reducing flooding and improving water quality in our streams.

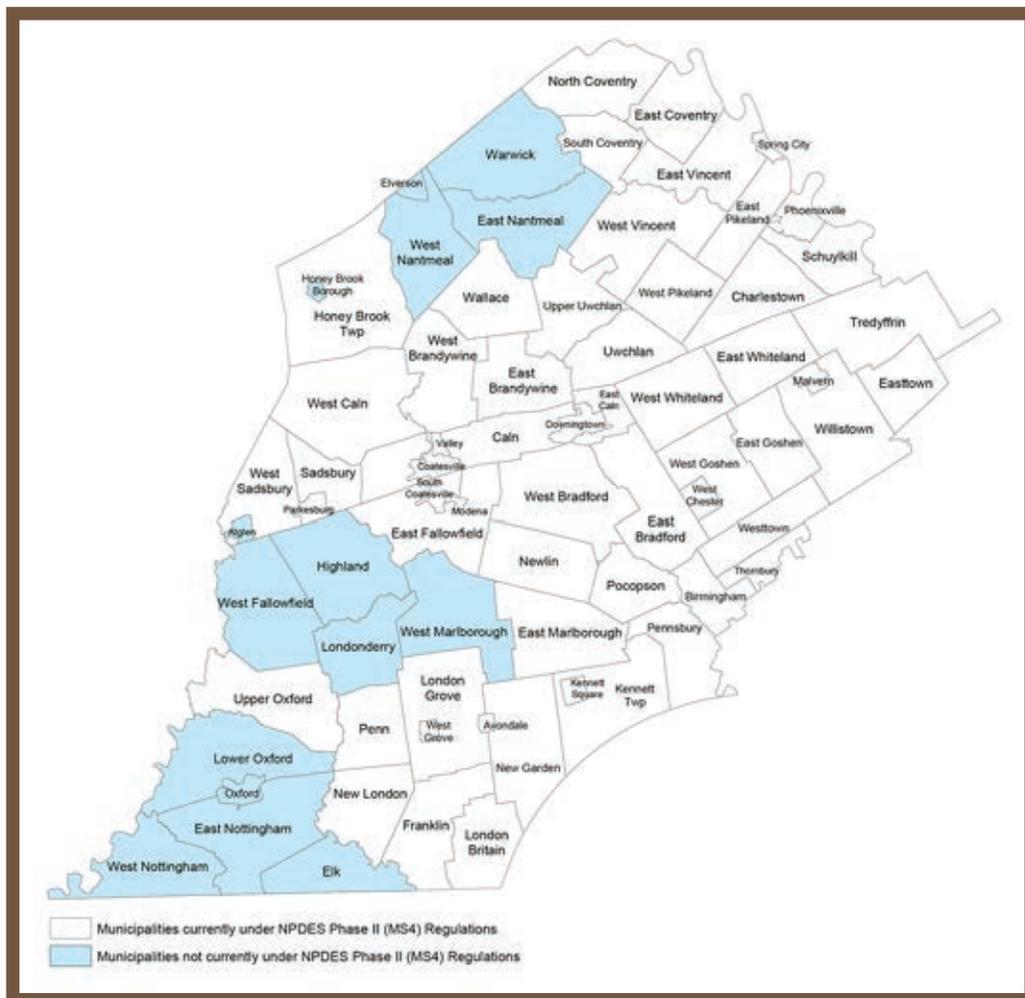
What were the outcomes of using the tool?

When BMPs are properly matched to site and proposed development, installed, and maintained, there is proven protection and restoration of our waterways before, during, and after development activities.

Applicability

How can this tool be used in the greenway?

Where there is existing stormwater runoff in urban or suburban areas, municipalities are governed by state and federal Municipal Storm Sewer System (MS4) and Total Maximum Daily Load (TMDL) regulations. Most municipalities within urbanized areas must satisfy the requirements of MS4 permits and must meet any TMDL goals.



Chester County municipalities NOT currently under NPDES Phase II (MS4) Regulations shown in blue

In which municipalities might this tool be suitable?

All greenway municipalities can benefit from this Stormwater tool to provide maximum environmental and quality of life enhancements within their communities. PA DEP has adopted statewide stormwater regulations for erosion and sediment control under Chapter 102. In addition, several documents relevant to planning and engineering for better stormwater management have been published including the Pennsylvania Stormwater BMP Manual and other guidance documents for Low Impact Development, Green Infrastructure, and Smart Growth. This toolkit includes several strategies that are relevant to stormwater management including Conservation Design, Natural Resource Protection Standards, Agricultural BMPs, and Conservation Easements.

More Information***Where can someone learn more about this tool?***

- Brandywine Conservancy.org
- Chester County Water Resources Authority
- PA DEP website
- EPA website
- Center for Watershed Protection website

Rural Conservation Zoning

Introduction

What does this tool address?

- Loss of farms and forests.
- Loss of rural character.
- Suburban sprawl.

What does this tool accomplish?

- Protects prime farm lands.
- Retains viable mass of agriculture.
- Protects rural resources while providing landowners with rural housing options.



The rural aesthetic that is part of the Greenway

Implementation

How is this tool implemented?

Typically establishes zoning districts that:

- Favor continued agriculture over non-farm residential uses (effective agricultural zoning) or allow for farming, forestry, and low-density residential uses (rural conservation zoning).
- Include incentives for conservation.
- Complement the uses of conservation easements and transferable development rights.

Rural conservation protects natural/cultural resources through choosing the residential subdivision options.

Success

Where has this tool been used successfully?

Used in various forms within the upper reaches of the Greenway, including Honey Brook, West Caln, West Nantmeal and West Brandywine Townships.

Applicability

How can this tool be used in the Brandywine Creek Greenway?

- It can apply to remaining areas of farms and forests.
- It can limit public infrastructure encroachment.
- It combines with woodland, riparian buffer, floodplain, wetland, steep slope, and historic resource protection regulations.
- It discourages cookie-cutter subdivisions in favor of preserving productive agricultural land and sensitive natural areas.
- It can be used to promote use of conservation design/open space developments.



Chester County contains some of the most productive agricultural soils in the country

More Information

Where can someone learn more about this tool?

- www.co.lancaster.pa.us. *Greenscapes Element of the Lancaster County Comprehensive Plan—Balance*.
- <http://conservationtools.org/guides/show/67-Agricultural-Protection-Zoning>,
- The Center for Rural Pennsylvania, *Zoning for Farming, A Guidebook for Pennsylvania Municipalities on How to Protect Valuable Agricultural Lands*, 1995.

The Official Map

Introduction

- The Official Map identifies public improvements (transportation, open space, and recreation) goals of a municipality and is used to help implement those goals.
- Provides the right of first refusal to municipalities.
- Helps focus limited financial resources on projects to meet community goals.
- Helps municipalities make improvements such as improving the local street network; protecting important natural areas; and providing more green space, recreation facilities, trails, and sidewalks.
- Saves time and money by informing property owners and developers of municipal goals and intentions ahead of development plans.
- Helps to ensure that development is compatible with and supportive of public goals.
- Supports zoning and subdivision and land development ordinances by helping provide infrastructure and acquire public spaces.
- Helps secure grants.



East Bradford Township Official Map shows goals for open space, trails, and other public improvements

Implementation

How is this tool implemented?

- Through a Comprehensive Plan and possibly other plans and studies, such as traffic studies, open space & recreation plans, etc.
- Public education.
- The map itself is the ordinance.
- The Zoning and Subdivision ordinances should be amended to reference the Official Map.

Success

Where has this tool been used successfully?

64 municipalities in the state have an Official Map (as of 6/2011) including: 16 in Chester County and 6 in the Brandywine Creek Greenway (Birmingham, East Bradford, East Caln, Honey Brook, Uwchlan, and West Bradford Townships).

What were the outcomes of using the tool?

- Open space preservation and multi-use trails in East Bradford Township.
- Development of an extensive, interconnected trail network in Uwchlan Township.
- Preservation of important natural areas in Bushkill Township, Northampton County.

Applicability

How can this tool be used in the BCG?

The top four goals for the entire Greenway have been identified as

- 1. Recreation:** The Official Map can be used to prioritize land for acquisition and use as public parks and trails.
- 2. Conservation:** It can also be used to identify land as a conservation priority.
- 3. Water quality:** If that land includes riparian areas, conserving it can protect and improve water quality.
- 4. Transportation:** The Official Map can be used to identify multi-use trail corridors, as well as to improve the street network.

In which municipalities might this tool be suitable?

- Any municipality!

More Information

Where can someone learn more about this tool?

- *The Official Map: A Handbook for Preserving and Providing Public Lands & Facilities.*
http://conservationtools.org/libraries/1/library_items/931
- The Brandywine Conservancy.

Non-regulatory Tools

Agricultural Best Management Practices (BMPs)

Introduction

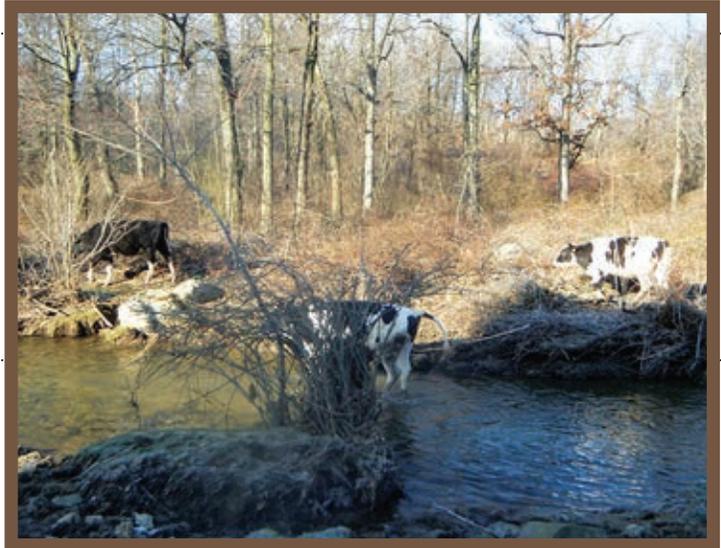
What does this tool accomplish?

Agricultural Best Management Practices (BMPs) are farming methods designed to mitigate the potential adverse environmental effects farming can have while maintaining the agricultural business' vitality of the farm.

Implementation

How is this tool implemented?

The first step is to have a Conservation Plan and possibly a Nutrient Management Plan completed for the farm. These plans will analyze the physical properties of the farm in conjunction with the type of Agri-business being conducted. The analysis will then dictate the types of BMPs for the specific cropping situation in combination with the land type (for example: soil, slope, or proximity to open water).



Cattle in the creek negatively impact water quality. A controlled cattle crossing/creek access is an agricultural BMP.

Applicability

How can this tool be used in the BCG?

All farms should meet with an agricultural consultant to ensure that the current stewardship of the farm is capitalizing on all the up to date opportunities to mitigate the impact of their activities on the environment.

More information

Where can one learn more about this tool?

Chester County Conservation District

- Dan Miloser 610-925-4920.

Natural Resources Conservation Service (NRCS)

- Beth Sassaman 610-696-0398 ext 114.

The Brandywine Conservancy

- John Goodall 610-383-9515
- Grant DeCosta 610-388-8117

Agricultural Easements

Introduction

What does this tool accomplish?

- Enables landowners to separate and **sell their development rights** from other property rights.
- **Landowners retain all other rights** of ownership, including the right to farm, prevent trespass, sell, bequeath or otherwise transfer the land.
- County pays the difference between value of the land for agriculture and the value of the land for its “highest and best use,” generally residential or commercial development.

Implementation

How is this tool implemented?

Farm selection gives 40% consideration to land evaluation (how productive soils are) and 60% consideration to site evaluation. The 60% consideration to site evaluation breaks down into 25% for Farmland Productivity and Conservation practices, 10% for development risks, and 25% for farmland clustering.

Applicability

How can this tool be used in the BCG?

To apply to the County/State Agricultural Preservation Program, a farm must have:

- At least 50 acres (challenge grant 25 acres), or at least 10 acres producing a crop unique to the area, or at least 10 acres contiguous to a property with a perpetual conservation easement.
- At least 50% of the soils must be available for agricultural production and in Class I through IV soils.
- Contain the greatest option of either 50% or 10 acres of harvested cropland, pasture or grazing land.

More information

Where can one learn more about this tool?

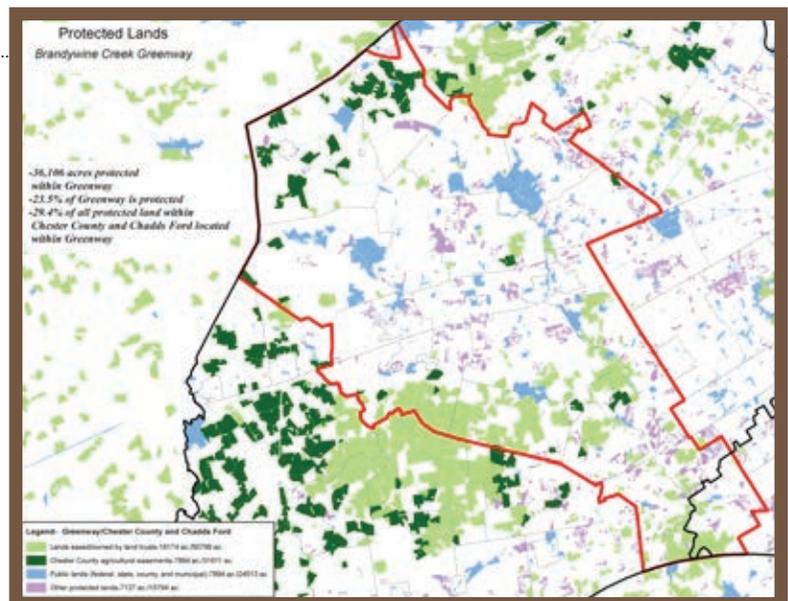
Chester County Agricultural Preservation Program

- Geoff Shellington 610-344-5656.

Brandywine Conservancy

- John Goodall 610-383-9515.

Application Deadline is typically in late summer.



Existing agricultural easements shown in dark green

Agricultural Security Areas (ASAs)

Introduction

What issues does this tool address?

The Agricultural Security Area (ASA) program began in 1981 as a tool for strengthening agriculture as part of the “Right-to-farm”. An ASA is an area where agriculture is the primary activity as set forth in PA Act 43. Farms within an ASA are entitled to special review prior to condemnation.

Farms enrolled in an ASA are protected from nuisance lawsuits that target normal agricultural activities such as noises or unpleasant odors produced by livestock. A farm enrolled in an ASA is also eligible to participate in County/State Farmland Preservation Programs.

Implementation

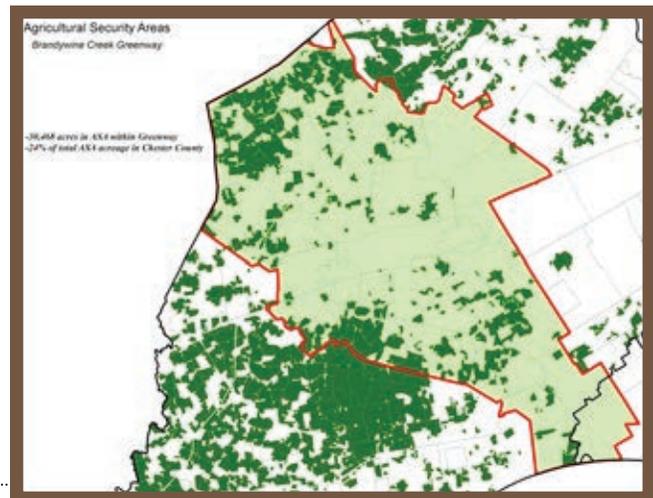
How is this tool implemented?

ASAs are created by local municipalities with individual farmers that agree to collectively place at least 250 acres in an ASA. An eligible farm must be at least 10 acres in size and have viable farmland. Every seven years the municipality reviews their ASA.

Participants receive special consideration regarding:

- Local ordinances affecting farming activities.
- Nuisance complaints.
- And review of farmland condemnation by state and local government agencies.

An ASA qualifies land for consideration under Chester County’s Easement Purchase Program at the landowner’s request, if the ASA has at least 500 acres enrolled.



Existing agricultural easements shown in dark green

Applicability

Where can this tool be used within the BCG?

An ASA is a productive tool to alleviate potential unforeseen municipal/Agra-community ordinance conflicts while also creating opportunities for municipalities to engage the farming community in other dialogues (i.e. farmland preservation).

More Information

Where can someone learn more about this tool?

- Your Municipal Office.
- Brandywine Conservancy Western Area Manager; John Goodall 610-383-9515.
- Chester County Planning Commission.
- Chester County Department of Open Space Preservation

Conservation Easements

Introduction

What issues does this tool address?

A conservation easement allows land to be permanently preserved at a potentially lower cost than the cost of purchasing and holding a fee interest. The land remains in private hands. A land trust or government entity can hold the easement and be responsible for monitoring and enforcing it. There is no obligation to require public access.

What does this tool accomplish?

A conservation easement is a voluntary restriction of private property rights. An easement permanently restricts the uses and activities on the land to protect its conservation values. Restrictions are tailored to the particular property and the mutual goals of the holder and the landowner.

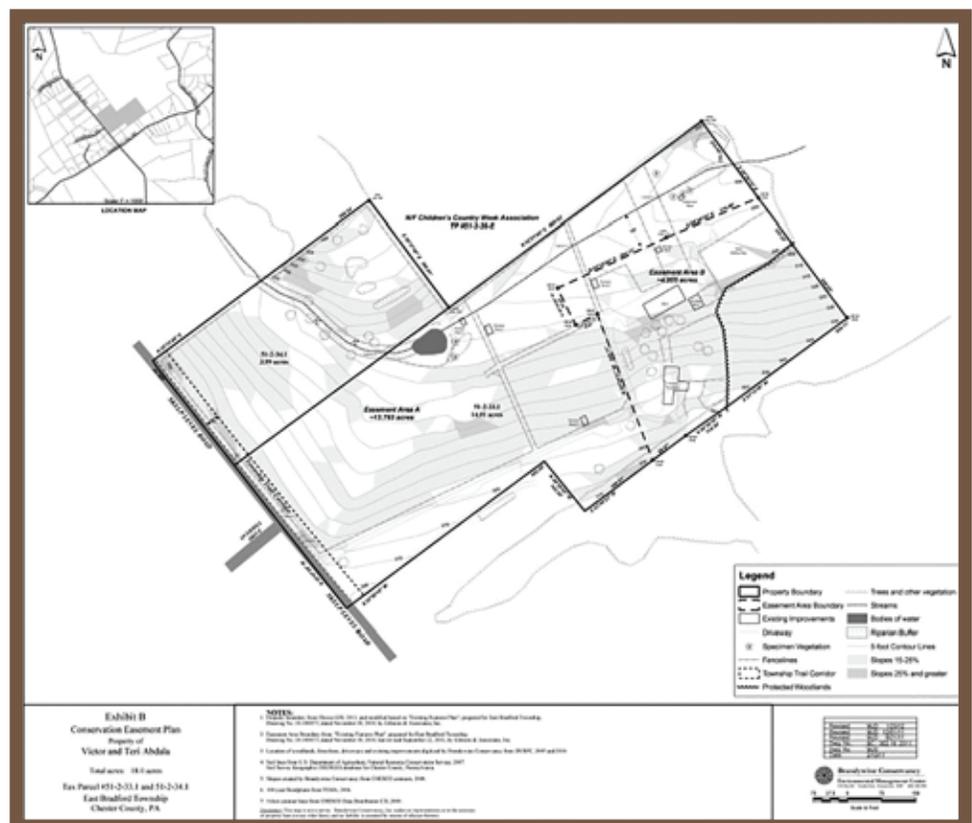
Implementation

How is this tool implemented?

A conservation easement is a legal agreement between landowner and an eligible organization. Eligible organizations (under the tax code) include land trusts, municipalities, and other government entities. An easement is recorded as a deed restriction in the county office of the Recorder of Deeds and applies to all future owners.

Easement Preparation Process

A land trust can work with a municipality to help it preserve land by means of conservation easements. After initial meetings with an interested landowner to explain the easement preparation process and confirm their interest in placing an easement on their property, deeds should be checked for any encumbrances and a title report is ordered. The land trust sends a proposal letter to the landowner and the township, outlining the terms of the easement and the project costs. These costs include the time to write the easement and the baseline documentation report and to create an



An easement plan (map) is prepared after the land trust proposal has been accepted.

easement plan (map); an endowment to perpetually monitor and enforce the easement; and the cost of any needed surveying. Once the proposal is approved and signed by the landowner and the township, the land trust drafts the easement. If the easement is being purchased, an appraisal is ordered.

An easement purchase agreement is prepared with an offer price based on the appraisal and is presented to the landowner. The township board of supervisors passes a resolution authorizing the easement purchase. A survey of the property boundary or designated building areas is ordered if needed. The easement is finalized and the baseline documentation report is prepared. Title insurance is ordered, and settlement occurs. (This, of course, would be slightly different if the project does not involve a township.)

Holding and Stewarding Easements

- The grantee or primary holder of an easement is often a land trust, and the municipality and other grant providers may be named as co-grantees, co-holders or beneficiaries. Any of these entities are considered qualified conservation organizations under the Internal Revenue Code and can serve as the primary grantee/holder.
- The advantages of having a land trust serve as the as primary easement holder and steward include experience, staff capacity, technical capabilities and tools such as GIS mapping, and dedicated endowment funds for stewardship and enforcement. On the other hand, the municipality is closest to the property and has local contact with the landowners.

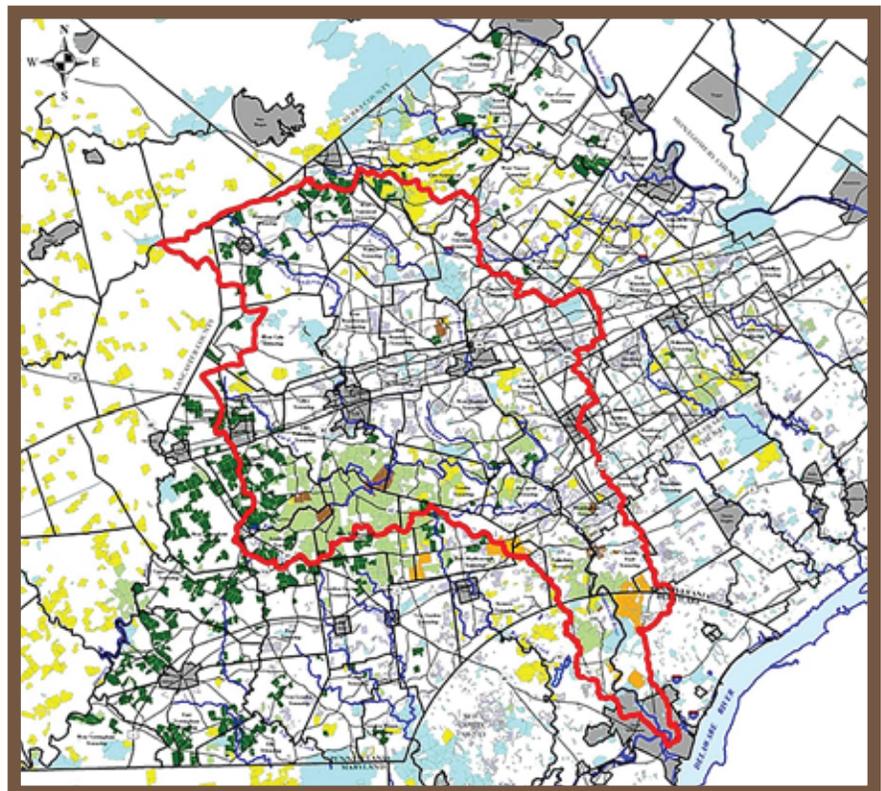
Success

Where has this tool been used successfully?

Throughout Chester County and the United States.

What were the outcomes of using the tool?

As of March 2013, in the Brandywine Creek watershed (shown outlined in red) 8,823 acres (4% of the watershed) were preserved with agricultural conservation easements (shown in dark green); and 23,047 acres (11% of the watershed) were preserved with easements held by the Brandywine Conservancy (shown in light green).



Applicability

How can this tool be used in the BCG?

Conservation easements can be donated by willing landowners, purchased with various grant and municipal funds, or partially purchased and partially donated. Municipal outreach to landowners can include public meetings and individual visits. A land trust can create mapping and analysis of particular parcels and can provide materials on conservation easements and the easement process. Staff can then follow-up with discussions regarding landowner goals, easement terms, and funding opportunities.

More Information

Where can someone learn more about this tool?

- The Brandywine Conservancy's materials include a Conservation Easement brochure and General Guidelines for Conservation Easements.
- A good source of more information regarding conservation easements in Pennsylvania is the Pennsylvania Land Trust Association (PALTA) website www.conserveland.org.
- Information regarding Chester County's Open Space Preservation Program can be found on their website www.chesco.org.

Fee Simple Interest

Introduction

What issues does this tool address?

A fee simple interest is a form of freehold ownership of land and is the highest ownership interest possible that can be had in real estate. Fee simple ownership in real property is limited by government powers of taxation, eminent domain police power, and other encumbrances or conditions in the deed.

Municipalities may choose to pursue fee interest in a property, or take title to a property, in order to assume full ownership. This is considered an option when land with significant natural, cultural, or recreational resources is threatened by development or when the township’s Comprehensive Plan has identified a parcel of land for future public use. A municipality can acquire full ownership of open space, historic buildings, or high priority real estate through purchase or donation as a charitable gift.

What does this tool accomplish?

- Public parks and preserves allow active and passive recreation for residents.
- Purchase or donation of land can be used to preserve important natural, agricultural, and historic resources.
- Public parks and open spaces often provide opportunities for environment education.
- Open space can be used to mitigate flooding.



The Brandywine Trail in East Bradford Township

Implementation

How is this tool implemented?

When a municipality is considering the purchase of land it should consider the following.

- Priority lands should be identified on an Official Map, Comprehensive Plan, Trail Plan, or other planning document. However, municipal governments can be opportunistic and may have flexibility to acquire other lands that are voluntarily offered by willing landowners.
- The municipality should pay to have an appraisal completed by a licensed real estate appraisor. The Municipal Planning Code specifies that a municipality is not permitted to pay more than fair market value for real estate. If the seller wishes, they may pay to have a second appraisal completed and the municipality and seller can negotiate a fair market price that splits the difference between the two appraisals.

- The governing body (Board of Supervisors, City Council) should consult with their solicitor, and perform due diligence research on the property to determine if there are any liens or environmental issues.
- Pass a resolution to authorize the expenditure of funds for the purpose of purchasing land.
- Land may be purchased by a municipality with a combination of grant and municipal funds. Funding sources may vary by municipality and may include fee in lieu funds, open space funds, interest from bonds, or other municipal funds. If Open Space funding is used, comply with legal provisions under PA Act 153.
- Once a municipality has sole control of the property it also has an obligation to maintain it. A stewardship plan should be prepared that outlines the projected uses and maintenance tasks.
- Land may be donated to a government entity or non-profit organization by private landowners. The value of the donation may be eligible as a charitable tax deduction for the seller.
- Municipal ordinances can include provisions for land/open space to be dedicated to the municipality as part of a private subdivision and land development project.

Applicability

How can this tool be used in the BCG?

- Interested municipalities can partner with county agencies, state agencies, other municipalities, local non-profit organizations, and private foundations to pursue grants and matching funds.
- Public open space may be used for the conservation of natural habitats, historic preservation, agricultural preservation, flood mitigation, or recreation.

More Information

Where can one learn more about the tool?

- Chester County Planning Commission.
- Chester County Department of Open Space Preservation
- Visit the PALTA website at conserveland.org.
- Visit the Pennsylvania DCNR website for grant programs at <http://www.dcnr.state.pa.us/brc/grants/c2p2programguidance/index.htm>

Joint Ventures and Leveraging Funds

Introduction

What issues does this tool address?

Many municipalities and their staff lack the expertise, experience or resources to successfully complete a special project. For example, the expertise needed for a conservation easement includes the ability to negotiate with landowners and to prepare and record easement documents. Municipalities often have limited staff whose time is consumed dealing with a range of important municipal tasks. Limited availability of municipal funding for special projects can also present an obstacle.

What does this tool accomplish?

Partnerships among municipalities, land trusts, government agencies, corporations, landowners, and other stakeholders bring a dynamic mix of expertise, experience, and resources to the table. A team of partners can be carefully selected to maximize project success. Joint ventures have the potential to:

- Bring supporting talents.
- Build a broader funding base.
- Improve scores on grant applications.
- Reduce cash outlays by providing matching funds.

Implementation

How is this tool implemented?

Joint ventures demand creativity, flexibility and, most of all, time and patience. Each project will require a unique cast of players depending upon the goals of the project, and will play out unlike any other venture.

1. Define the scope of the project—whether it is a conservation easement, fee-simple purchase, lease agreement, environmental restoration, site mitigation, etc. This phase should include a preliminary estimate of probable costs.
2. Engage potential partners and stakeholders with mutual interests and obtain their commitment to provide expertise or funding for the project.
3. Agree on goals and division of responsibilities.
4. Identify private and public sources of funding and make initial contact with funding sources.
5. Secure landowner agreement to preserve property.
6. Obtain detailed appraisals, bids or estimates from qualified professionals.
7. Submit proposals or grant applications accompanied with letters of support from the partners and from local and regional political representatives.



Horse pasture along the Brandywine

Applicability

How can this tool be used in the BCG?

- Park Acquisition.
- Land Preservation.
- Tail Easements.
- Suitable in all municipalities.

More Information

Contact:

PA DCNR

- Community Conservation Partnership Grant Program (C2P2).

DVRPC

- Regional Trails Program.

Chester County

- Open Space Preservation Programs.
- Farmland preservation.
- Conservancy grants.
- Municipal grants.
- Community Revitalization Program.

Non-Profit Land Trust Assistance

What is a Land Trust?

A land trust, also known as a land conservancy, is a private, nonprofit organization that, actively works to conserve land by undertaking or assisting in land or conservation easement acquisitions or by its stewardship of such land or easements. Land trusts have memberships and a Board of Directors that is made up of community representatives. Some land trusts may own nature preserves or sanctuaries, help municipalities to acquire open space or parkland, or educate the public regarding the value of the natural environment.

Land Trusts can offer:

- Expertise with landowner outreach/easement cultivation, easement document preparation, education and outreach
- Possible sources of matching funds for easement purchases,
- Staff with up-to-date knowledge of relevant conservation regulations, laws and best practices.

Services Include:

- Property Stewardship Plans.
- Municipal Prioritization Planning.
- Grant Application Assistance.
- Marketing Assistance & Outreach.
- Legal Document Development.
- Project Management & Implementation.
- Mapping Services thru GIS.



Productive agricultural land and easements in the headwaters of the Brandywine

Finding a Land Trust

- Go to Chester County Open Space Preservation Program website for links to local land trusts and non-profits.

Caution:

- Land trusts have their own priorities and may charge for their services.

Examples:

- Brandywine Conservancy
- Natural Lands Trust
- North American Land Trust
- Pennsbury Land Trust
- The Land Conservancy for Southern Chester County

More Information

- Pennsylvania Land Trust Association—www.ConserveLand.org.

Local Municipal Land Trusts

What is a Municipal Land Trust?

It is a public (or quasi-public) corporation formed by a municipality. Its mission could include urban renewal, redevelopment, conversions of state or federal lands for conservation or redevelopment, and acquisition of open space for conservation or recreation. There is no membership. A Board of Directors is composed of political appointees and/or elected officials. Non-profit land trusts can provide assistance to municipalities who wish to form a local municipal land trust.

Municipal Land Trusts can:

- Purchase land on the open market
- Accept receipt of surplus public property from federal, state, or county agencies
- Work in partnership with private non-profit land trusts

Services Include:

- Grant Application Assistance.
- Legal Document Development.
- Project Management & Implementation.
- Mapping through municipal GIS services.

Examples of Municipal Land Trusts:

Pennsbury Land Trust

- Offers educational programs on environmental topics
- Identifies and promotes protection of land
- Helps landowners assess stream quality, control invasive plants, and protect natural resources
- Assists landowners with the process of conveying conservation easements
- Monitors and enforces the protection of lands within the Trust

More Information

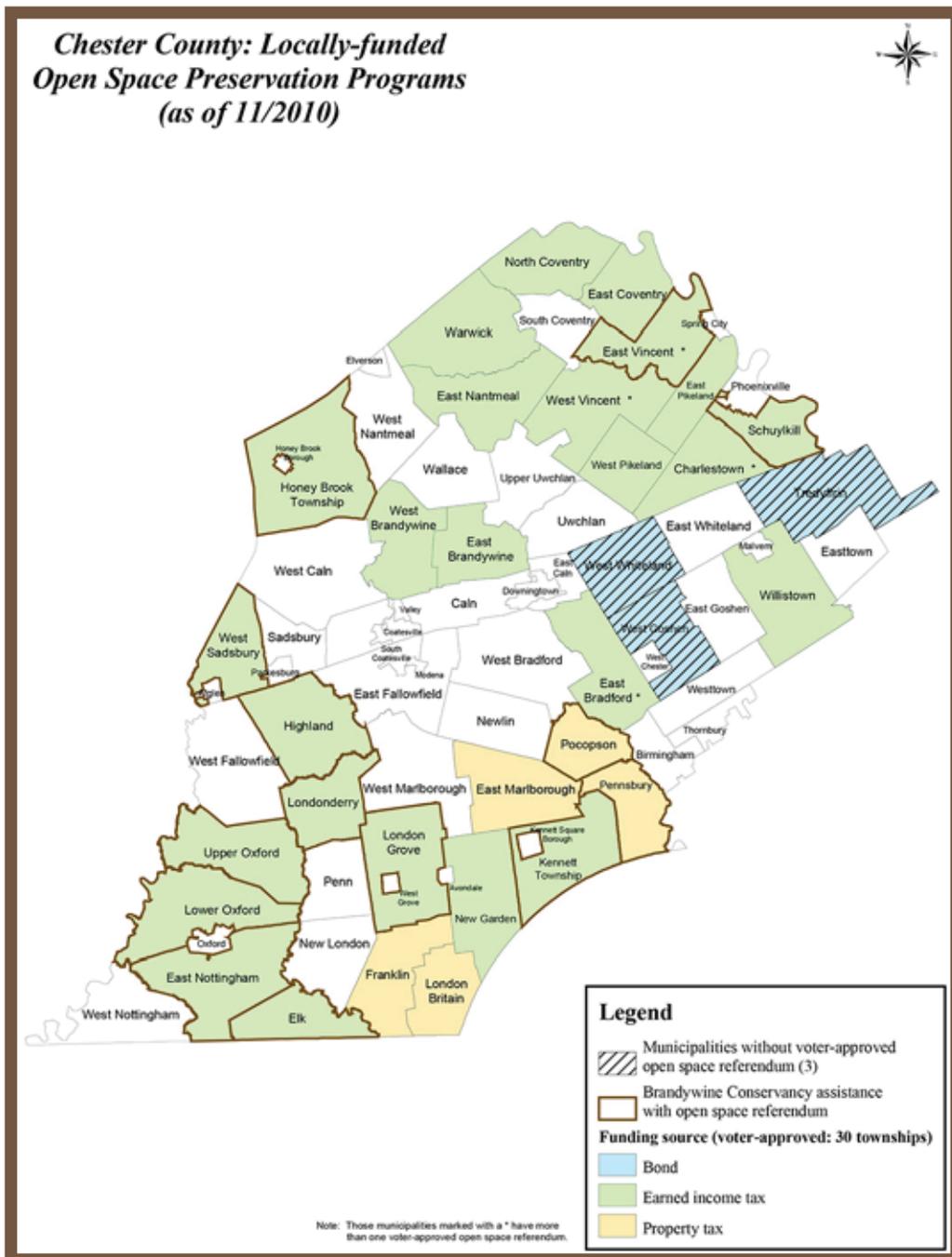
- The Brandywine Conservancy.
- Pennsylvania Land Trust Association—ConserveLand.org.
- Pennsbury Land Trust—<http://pennsburylandtrust.org>.

Open Space Referenda and Bonds

Introduction

What issues does this tool address?

One of the greatest challenges municipalities may have for open space preservation is a lack of funding to purchase land or easements. PA Act 153 authorizes local governments throughout the Commonwealth to preserve, acquire or hold land for open space uses.



What does this tool accomplish?

Cities, boroughs and townships in Pennsylvania are permitted to levy dedicated property, earned income and real estate transfer taxes for land conservation with the approval of a simple majority of voters through a ballot measure. Municipalities may also issue bonds with the proceeds dedicated to conservation projects with the approval of a simple majority of voters.

This tool has enormous impact. Voter approved tax revenues or bond proceeds can be used for conservation purposes described in the ballot questions. Examples of how the revenues can be used include: purchase of conservation easements; purchase of agricultural easements; purchase of land in fee; and purchase of trail easements. Act 153 also permits a percentage of revenue received to be used for stewardship, maintenance and recreational development on properties where conservation interests have been acquired through this funding tool. The bottom line is that this tool helps a municipality create a funding source that can be leveraged with other sources of funding to more effectively conserve land.

Implementation***How is this tool implemented?***

A conservation referendum enables citizens of a local municipality to vote to establish a dedicated tax for open space protection. It also enables citizens to approve borrowing beyond normal debt limits by local municipalities for conservation projects.

Solid preparation is critical for success. Funding to underwrite the ballot initiative campaign is recommended. Advocates for an open space tax should consider preparation of:

- A solid case statement.
- A public opinion survey.
- Carefully drafted ballot language
- Campaigning to raise awareness and support/votes
- Political coordination.
- The municipality must prepare a plan designating open space priorities where funds may be utilized. Some municipalities use the Official Map for this purpose. See Official Map regulatory tool.

Tax and Borrowing Options for Referenda

- All cities, boroughs and townships in Pennsylvania are permitted to levy dedicated property, earned income and real estate transfer taxes for the purchase of open space lands or development rights with the approval of a simple majority of voters through a ballot measure. No limits on voter authorized property and earned income tax rates exist. However, state law limits the real estate transfer tax to 1.0%; if a community has already reached this level of taxation, it cannot be exceeded. The state law (Act 153 of 1996) authorizes cities, boroughs and townships to levy these taxes, but does not provide this authority to counties.

- All county and local government units in Pennsylvania may issue non-voted debt if they are within the statutory debt limits permitted under the Local Government Unit Debt Act. The amount of non-voted debt that can be issued by a county is limited to 300 percent of its borrowing base; for other local governments, the limit is 250 percent of its borrowing base. The Act defines the borrowing base as the average annual revenue taken over the last three years. If a bond issue would exceed the debt limit or hamper the jurisdiction's financial flexibility by using too much of its non-voted debt issuing capacity, a voter-approved (electoral) bond measure can be sought. There are no statutory debt limits on the amount of voter-approved (electoral) debt, or self-sustaining debt.

Applicability

How can this tool be used in the BCG?

Seven of the twenty-four greenway municipalities have already established dedicated open space preservation funding sources and rely on county, state, federal, and other funds to leverage their limited resources to meet local and regional open space preservation goals. Examples include:

- Acquisition of open space, park lands, and trail rights-of-way.
- Acquisition of agricultural and conservation easements.
- Stewardship Planning.
- Recreational Development.

More Information

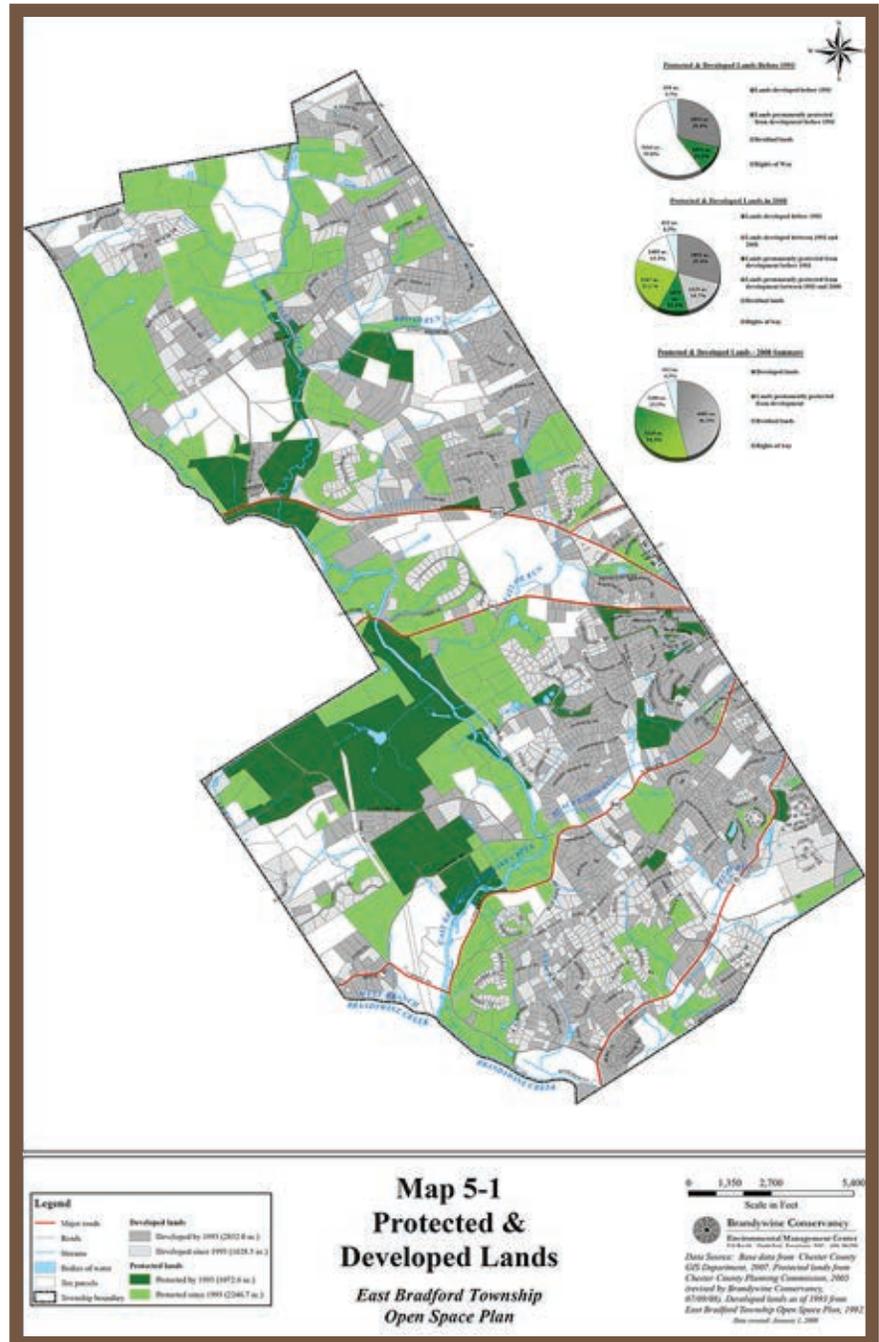
Where can someone learn more about this tool?

- For more information, visit <http://conservationtools.org/guides/show/16-Conservation-Referendum#ixzz3AIBRaosk>.
- DCNR.
- Chester County Planning Commission.
- Municipal Bond Council.
- The Brandywine Conservancy.
- Natural Lands Trust.

Implementation

How is this tool implemented?

- Many municipalities include an open space planning component as part of their Comprehensive Plan update, which is updated on average every 10 years. When a Comprehensive Plan is relatively current but considered by the municipality to be somewhat deficient under Act 153 in its analysis of open space preservation goals, an Open Space Plan can be completed and adopted as an amendment or addendum to the Comprehensive Plan. The Official Map can be used as a supplementary tool to identify priority lands that are identified in the Open Space Plan. Act 153 puts no limitations on means or approaches to negotiation with landowners, except that funds obtained pursuant to Act 153 may not be used in tandem with eminent domain proceedings. Nor can funds paid exceed a fair market appraisal. Where the Official Map is used to identify open space priorities, that complementary tool effectively creates a “right of first refusal” for the municipality to negotiate acquisition.



East Bradford Township map shows protected open space over time

Applicability

How can this tool be used in the BCG?

- BCG Municipalities can use Open Space Planning to varying degrees to promote preservation of culturally significant open space, recreational opportunities and scenic views, and to plan implementation of a network of recreational trails.
- In order to respond to the municipality's changing goals, needs, challenges and opportunities, Open Space Plans should be updated regularly (e.g., every ten years).
- When translated onto an Official Map, the open space and recreation priorities of the municipality can be easily communicated to municipal constituents and potential developers. More importantly, designation on the Official Map sets up a one year period within which the municipality may initiate acquisition of interest(s) in the property prior to the landowner undertaking any activity subject to permit which may undermine the municipality's conservation purposes

More Information

Where can someone learn more about this tool?

- Chester County Planning Commission.
- Brandywine Conservancy.
- Natural Lands Trust.

Preferential Tax Incentives (319)

Introduction

What is 319 Clean and Green? What issues does this tool address? What does the tool accomplish?

Clean and Green—Pennsylvania Farmland and Forest Land Assessment Act, Act 319 (amended by Act 156 of 1998 and Act 235 of 2004) is a state law, authorized by the state constitution, that allows qualifying land which is devoted to agricultural and forest land use, to be assessed at a value for that use rather than Fair Market Value. The intent of Act 319 is to encourage property owners to retain their land in agricultural, open space, or forest land use, by providing some real estate tax relief.

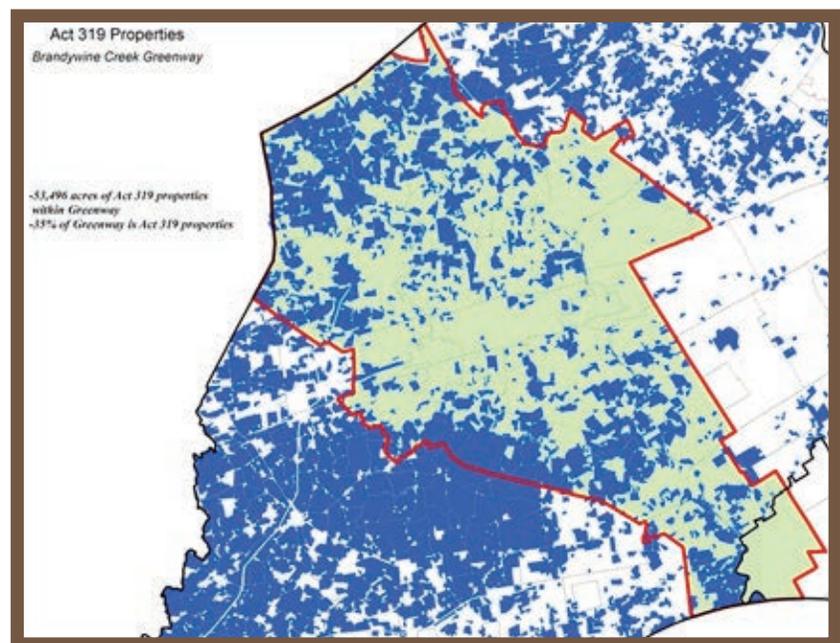
When a county implements a Clean and Green program, it places two values on each parcel of land that qualifies. These values are known as the Fair Market Value and the Use Value, better known as the Clean and Green Value. After these new values have been certified by the county, tax bills are calculated for each taxing district, using either the Fair Market Value assessment or the Use Value assessment, depending upon whether or not the property owner has enrolled his property in the Clean and Green program.

- A preferential assessment for parcels of land 10 acres or larger.
- Value derived from agricultural use potential instead of market approach.
- Land value is typically lowered by 30% or more.
- Owner agrees to not subdivide or develop and must pay 7 years of rollback taxes plus 6% interest if agreement is 'breached.'

Implementation

Who qualifies and how do they enroll?

- Any parcel(s) over 10 acres may qualify.
- Yearly enrollment period runs from March 1 to June 1 of each year and values take affect the following tax year.
- Enrollment is by notarized application only and, as of 2014, there is a \$65.50 fee + \$5.00 per application.
- Rejected applicants fees are refunded.



Map of properties (dark blue) enrolled in Act 319.

Applicability

How the Agricultural Value is Calculated?

- Each class of soil has an 'AgUse' value which is multiplied by the acreage to derive the preferential land assessment.
- Wooded portions are valued at a different rate than the 'tillable' portion (Chester County uses the same rate for different classes of woodlands).

More Information

Who to contact for more information?

Chester County Planning Commission.

The Chester County Assessment Office.

- Cheryl Pringle, 610-344-6105

Brandywine Conservancy.

- John Goodall, 610-383-9515

Deadline June 1

Trail Easements

Introduction

What is a trail easement?

A trail easement is a voluntary, legally enforceable agreement between a landowner and a trail organization or local or state agency where the landowner promises to preserve a linear corridor of land, keep it substantially free of future development, and make it available for public use. Such an agreement would include restrictions on the type and extent of public access permitted (i.e. hiking, horseback riding, etc.). A trail easement runs with the land in perpetuity and is binding on future owners. The trail corridor remains the property of the owner and may be conveyed to other owners, though the trail easement remains in place.

An easement may be donated or sold to a trail group, town, or public agency based on its appraised fair market value. Donations of land or development rights are tax deductible in most instances, with the amount of the deduction depending on the value of the easement and the financial circumstances of the owner.

What issue does this tool address?

A municipality plans to implement a trail network using the Open Space Plan and Official Map tools that define open space and recreation priorities, including trails. However, the municipality may not have sufficient funds to pay the appraised market value for properties that become available for sale or properties that are subject to subdivision and land development. The municipality needs a tool that will help to stretch the open space funding budget so that as many open space and recreation goals as possible can be achieved for the investment.

What does this tool accomplish?

A trail easement costs a fraction of the purchase price for the entire parcel of land and allows public access to private lands at a reduced cost. By voluntarily donating or selling a trail easement to a nonprofit or government, a landowner may allow public use to a specified area without having to subdivide the land or lose ownership and control of the land.

Why would a landowner wish to grant a trail easement to the Township?

- Provide a legacy for future generations, while continuing to own and enjoy the land.
- Improvements to the trail easement area such as clearing of invasive plants, repair of erosion-prone areas, and environmental restoration at no cost to landowner.
- Financial benefits: retain property value; use the value of the easement donation as a tax deduction; or, sell the easement at bargain or full value.

What is the landowner's liability?

- Pennsylvania's Recreational Use of Land and Water Act (RULWA), PA Act 586 of 1965, shields landowners from the liability which arises from permitting the public to use their land for outdoor recreational purposes, as long as the land is largely unimproved and an access fee is not charged.
- If the Township is the easement holder (or tenant under a lease) and has management responsibilities for the trail, the landowner would generally still be protected by RULWA regardless of its applicability to the Township.

- Although RULWA may afford immunity to the landowner in the long run, it does not cover the legal costs of defending against a frivolous suit, even if you ultimately prevail. Most homeowner policies cover usage comparable to that of sidewalks.
- The Township should maintain adequate insurance for trail usage.
- The Township should help landowners avoid liability problems on adjacent lands by providing barrier fencing and/or landscaping where required and by carefully marking the trail and posting appropriate signage.

What are the risks to the landowner?

- The property will be accessible to a greater number of users, both local and non-local.
- As with any private property or public facility there is some risk of vandalism, off-trail use (trespassing), illegal vehicular access, uncontrolled pets (dogs off the leash), and litter.
- To avoid risk, the trail should be located in areas that do not pass in the vicinity of obvious hazards on adjoining private land, and will be located at least 100 feet away from existing residences.
- The Township should help landowners avoid trespassing on adjacent lands by providing barrier fencing and/or landscaping where required and by carefully marking the trail and posting appropriate signage.
- Some landowners may be particularly sensitive about potential conflicts with their agricultural operations/horses. Smart layout and signage can adequately mitigate this risk.

What are the costs to the landowner?

- The landowner should retain legal counsel to review the easement or lease or sale documents on their behalf.
- The landowner should consult their insurance company to evaluate whether their insurance policy/rate would be adjusted.

What are the benefits for the residents of the Township?

- Implement recommendations in the Strategic Action Plan for the Brandywine Creek Greenway and municipal planning documents.
- Ensure that access to an important ecological resource is preserved for future generations.
- Facilitate the health benefits of walking, promoting healthier lifestyle for residents, and enhancing the livability of our community.
- Provide access to scenic, pristine, and ecologically significant areas.
- Provide residents with opportunity for outdoor education, nature appreciation, bird watching.
- Allow connections between the Brandywine Creek and other corridors within and beyond Township boundaries.

Implementation***How is this tool implemented?***

A trail easement program should include municipal outreach and education to provide answers to basic questions landowners typically have.

If an Official Map or Trails Plan has been adopted, a municipality may require that a trail easement be provided when a subdivision or land development application involves a future trail. Trail easements can also be granted as a condition of conservation easement purchase by a municipality or can be granted separately.

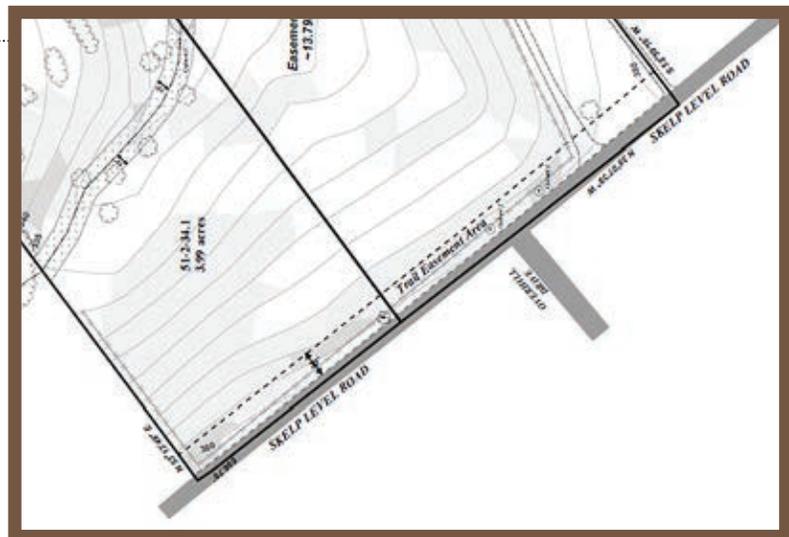
The most basic scenario may be when a landowner grants a trail easement to a nonprofit organization or government to allow the nonprofit or government to construct or maintain a public trail on private property. Once a trail easement project is identified, the landowner and the municipality should negotiate a variety of matters:

- The width of the trail and width of the easement
- Types of facilities allowed
- Permitted uses i.e. hiking, bicycling, horseback riding
- Liability in case of an accident
- Maintenance and emergency access
- The trail easement must be surveyed, mapped and a legal description prepared.
- An appraisal is performed by a licensed real estate appraiser.
- A trail easement agreement is prepared ideally with the municipality or the county as the Holder or Grantee, and the landowner as the Grantor. In most cases, a municipality is the best holder of the easement since it is closest to the location and is able to regularly monitor the trail.

Applicability

How can this tool be used in the BCG?

- Trail easements can be utilized for any planned trail as illustrated on the Recreation and Alternative Transportation Priorities Map.
- The tool is especially useful for the Brandywine Trail—an existing footpath that extends from the Mason-Dixon Trail in Pennsbury Township to the Horse-Shoe Trail in west Vincent Township. It is considered an endangered trail as much of the length occurs on private property with verbal permission from the landowners. Trail easements would formalize the use of the trail and ensure that it will be open to the public in perpetuity.



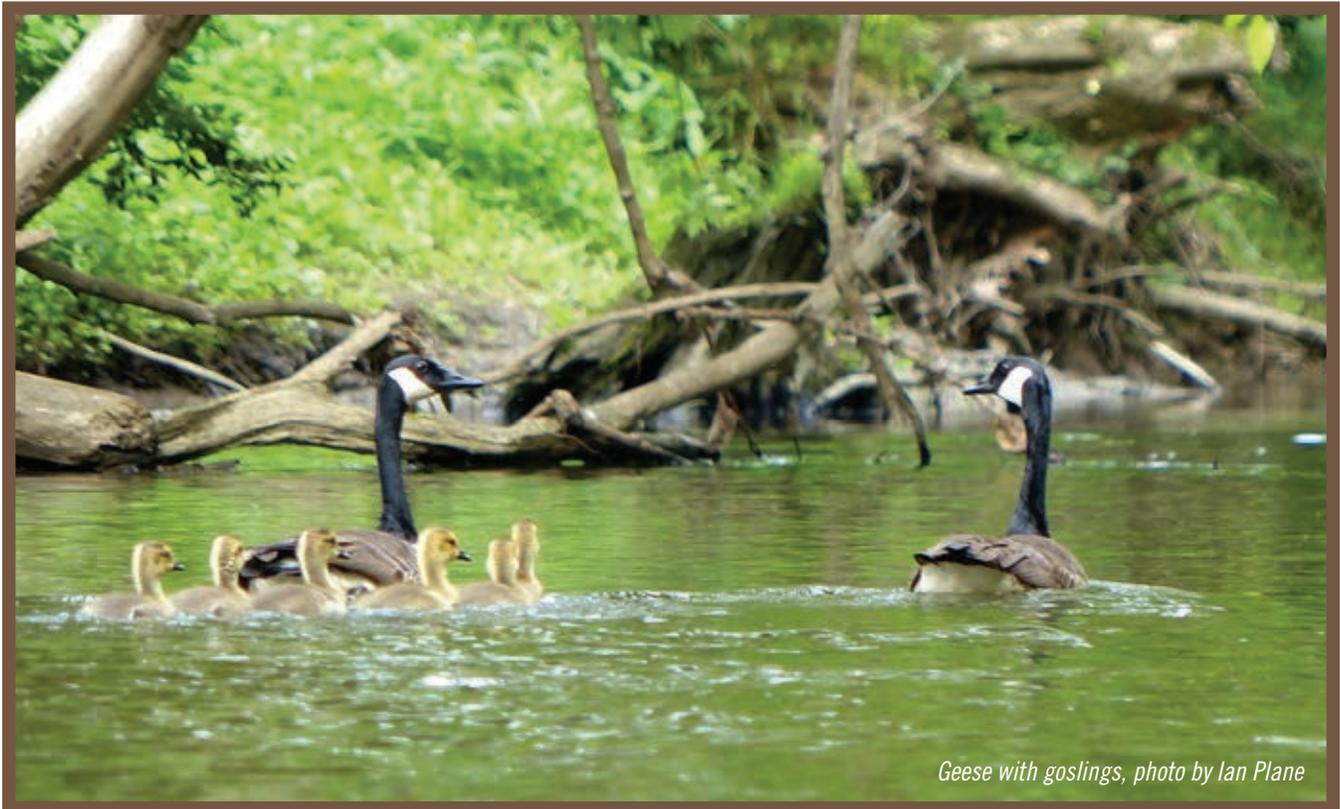
Example of how a trail easement is shown on a property map.

More Information

Where can one learn more about the tool?

- Chester County Planning Commission.
- Visit the PALTA website at <http://conservationtools.org/guides/show/56-Trail-Easements>
- The Brandywine Conservancy.

2. Resource Summary Maps



Geese with goslings, photo by Ian Plane

The following Resource Summary Maps depict tax parcels of 10 acres or greater that are likely to contain important natural and cultural resources. The Resource Summary Maps are to be used as a basis for municipalities to explore potentially important parcels for natural and cultural resource conservation. The data for the maps was obtained from: Chester County GIS Department, 2012; Delaware County GIS Department, 2012; and Chester County Planning Commission, 2013. The Resource Summary Maps provide synopsis's of data that are detailed in the Resource Inventory Maps (see Water Resources Inventory Map, Agricultural Resources Inventory Map, Cultural Resources Inventory Map, and Natural Resources Inventory Map) provided in Appendix A.

Each municipality has its own unique set of priorities for conservation; therefore the maps are presented according to four themes: Natural Resources (wildlife habitats); Water Resources; Agricultural Resources; and Cultural Resources. This suite of maps provides a basis for municipalities and landowners as they consider parcels of land for natural, cultural, agricultural, and water resources conservation. There are many possible techniques that can be used to evaluate resources. The ones used to generate the following four maps are well suited for the Brandywine Watershed, but may not be applicable to other locations.

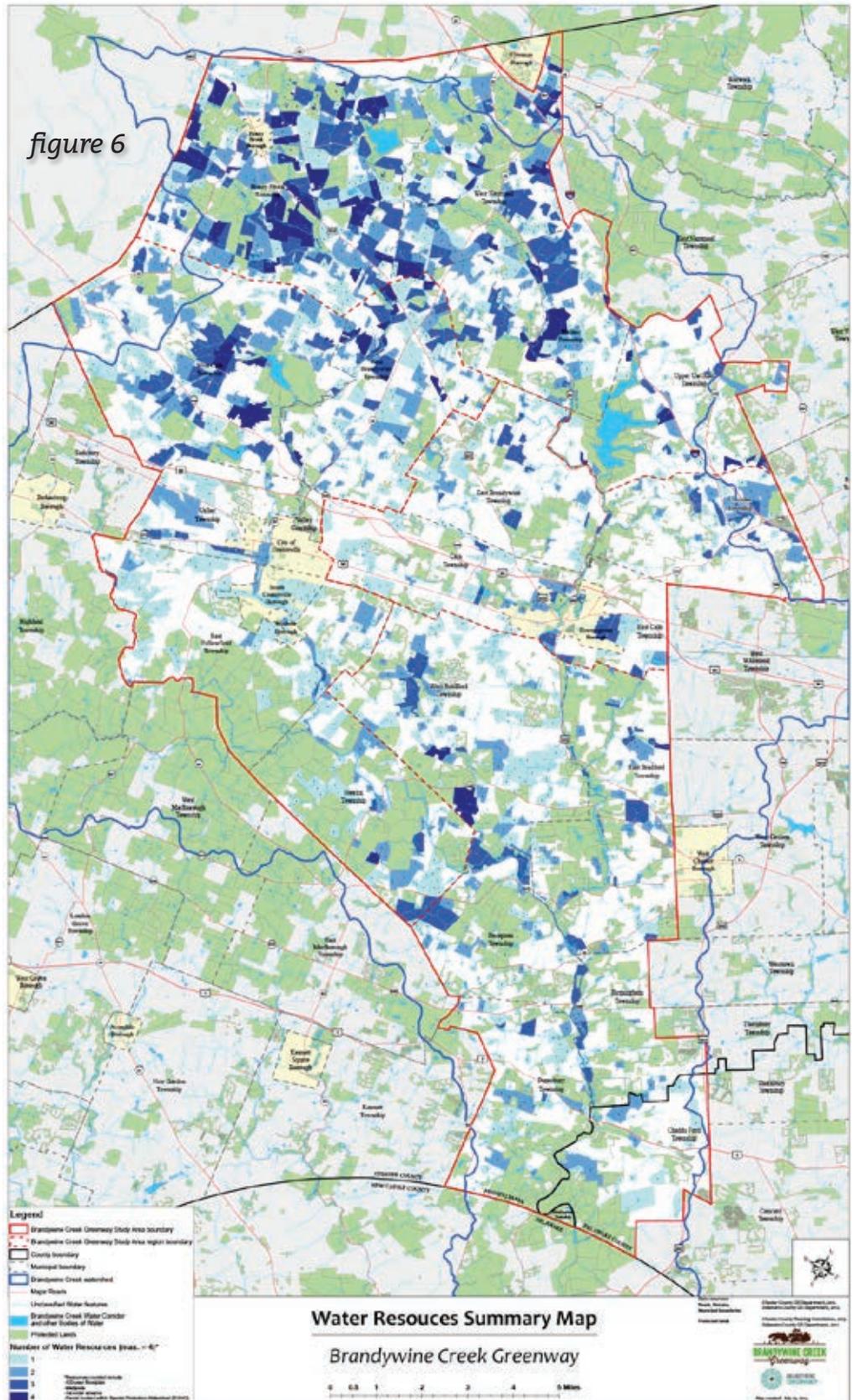
Generally, only parcels of 10 acres or greater were analyzed for the presence of resources. The darker colors indicate parcels with a presence of the greatest number of resources and the lighter colors show parcels with the least number of resources. No minimum acreages of resources were taken into account in the analysis—so parcels with 20 acres of woodlands received the same credit as parcels with .01 acres of woodlands. No prioritization is implied by this mapping. The Resource Summary Maps are to be used as a primitive indicator of what is located on each parcel. A detailed site inventory and analysis is required in each case to determine the true extent of any resources.

The resources data on the Resource Inventory Maps (Appendix A) were rated according to the presence of the following values:

**Water Resources—
maximum possible
score=5 (Figure 6)**

Received a point for each of the following:

- Located within Special Protection Watershed (EV/HQ)
- Presence of forested riparian buffer
- Presence of 100-year floodplain
- Presence of NWI wetlands
- Presence of 1st order streams

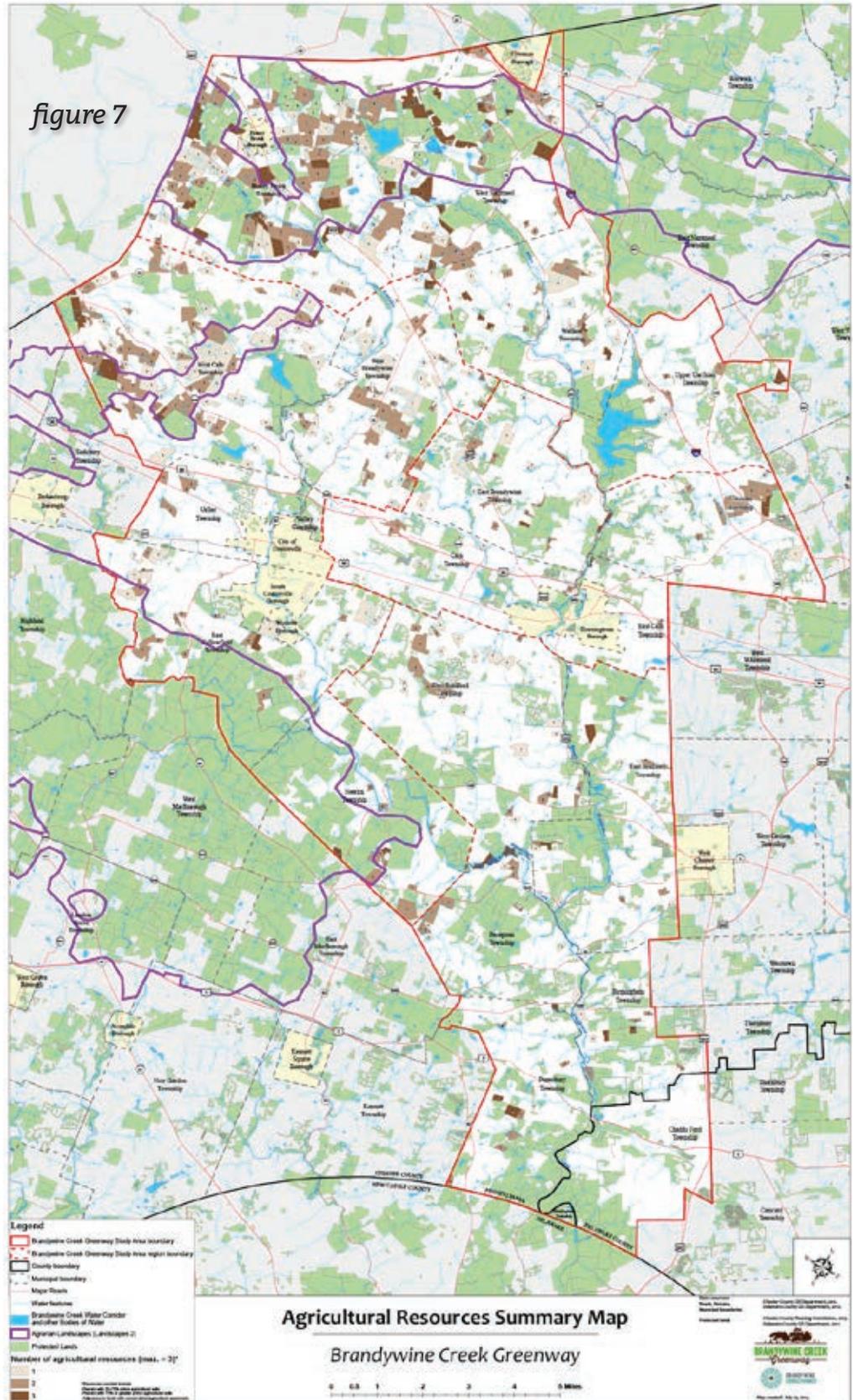


**Agricultural Resources—
maximum possible
score=3 (Figure 7)**

Received a point for each of the following:

- 50% prime ag. soils
- 75% prime ag. soils
- Adjacent to conserved land

Also shown but not counted are Agrarian Landscapes from Chester County's Landscapes 2 Comprehensive Plan. See <http://chescopagreen.org/intro/landscapes2.cfm> for a complete description of this future land use category applied to prime agricultural lands within the County.

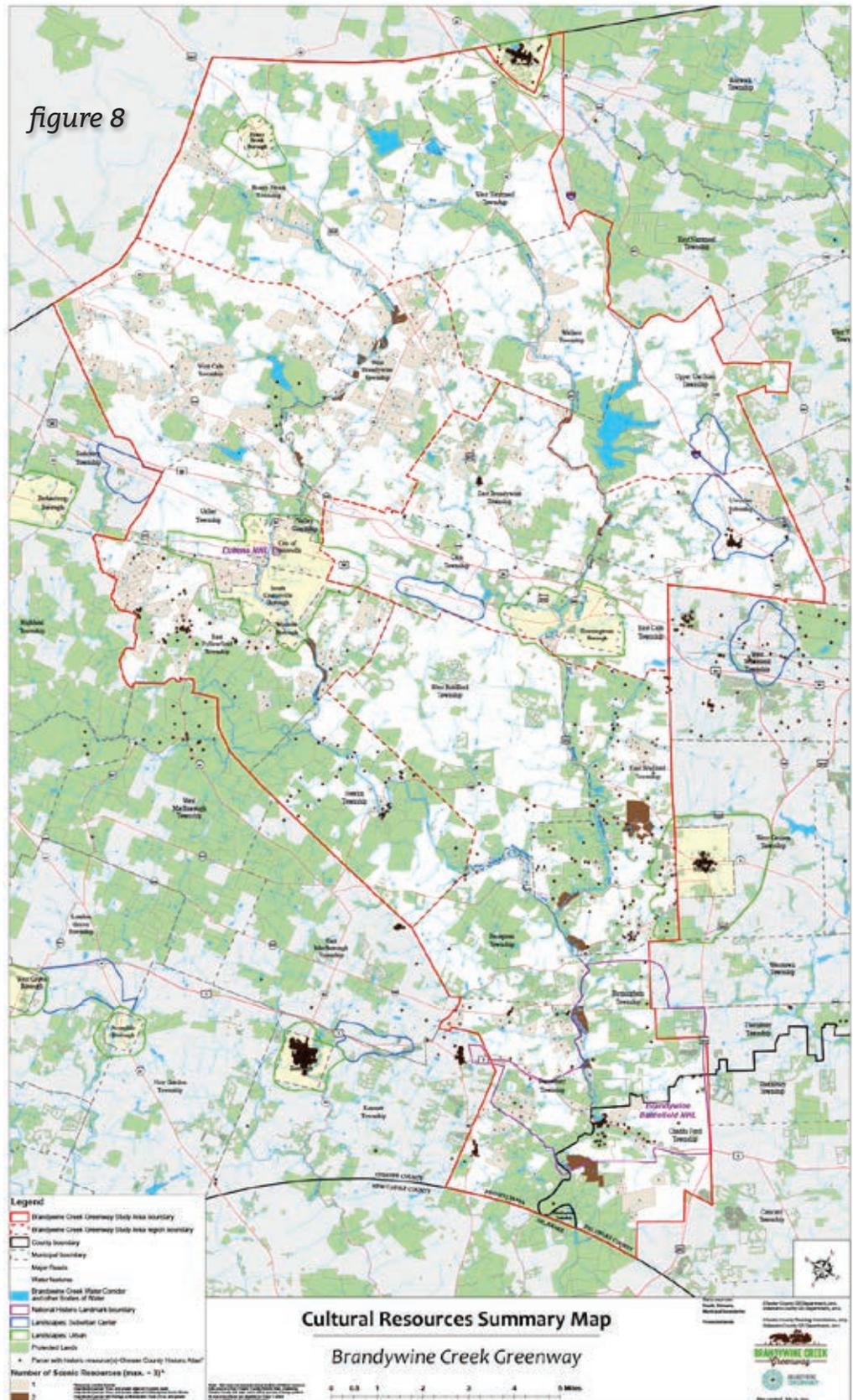


**Cultural Resources—
maximum possible
score=3 (Figure 8)**

Received a point for each of the following:

- Frontage along Brandywine Creek—Main Branches only, not tributaries
- Frontage along Brandywine Valley Scenic Byway
- Frontage along designated township scenic roads, along with route 82 and route 282

Also shown are stars which represent the center point of National Register or National Register eligible parcels, but are not counted. A star does not imply resource location, and there may be more than one historic structure located at that location. This data is derived from the Chester County Historic Atlas which is in the process of being updated.



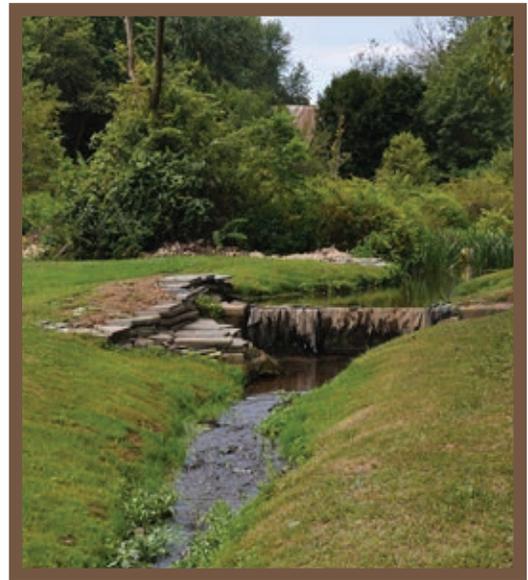
3. Restoration Opportunities

The Restoration Opportunities maps are to be used to identify projects that focus on enhancing water quality in the Brandywine Creek and its tributaries, and improving woodland habitat for wildlife. Continual efforts to restore degraded streams and woodlands on private and public lands should be undertaken on an as-needed basis as opportunities and funding arise.

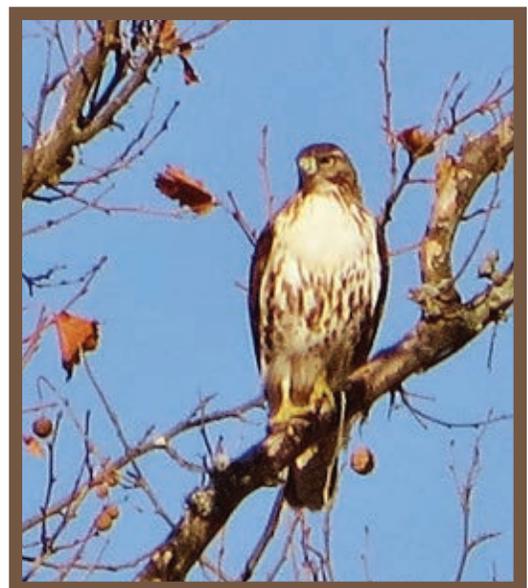
A detailed site inventory and analysis is required in every project to determine the true extent of any opportunities to restore or enhance woodlands or water resources. A variety of non-regulatory tools for resource conservation are available to landowners and municipalities and can be found at the beginning of this document. In many cases, reforestation projects will be an effective tool to improve water quality, reduce storm water volume, and provide new woodland habitat for wildlife. General watershed and woodland restoration opportunities are:



Clover in June, photo by Chuck Bowers



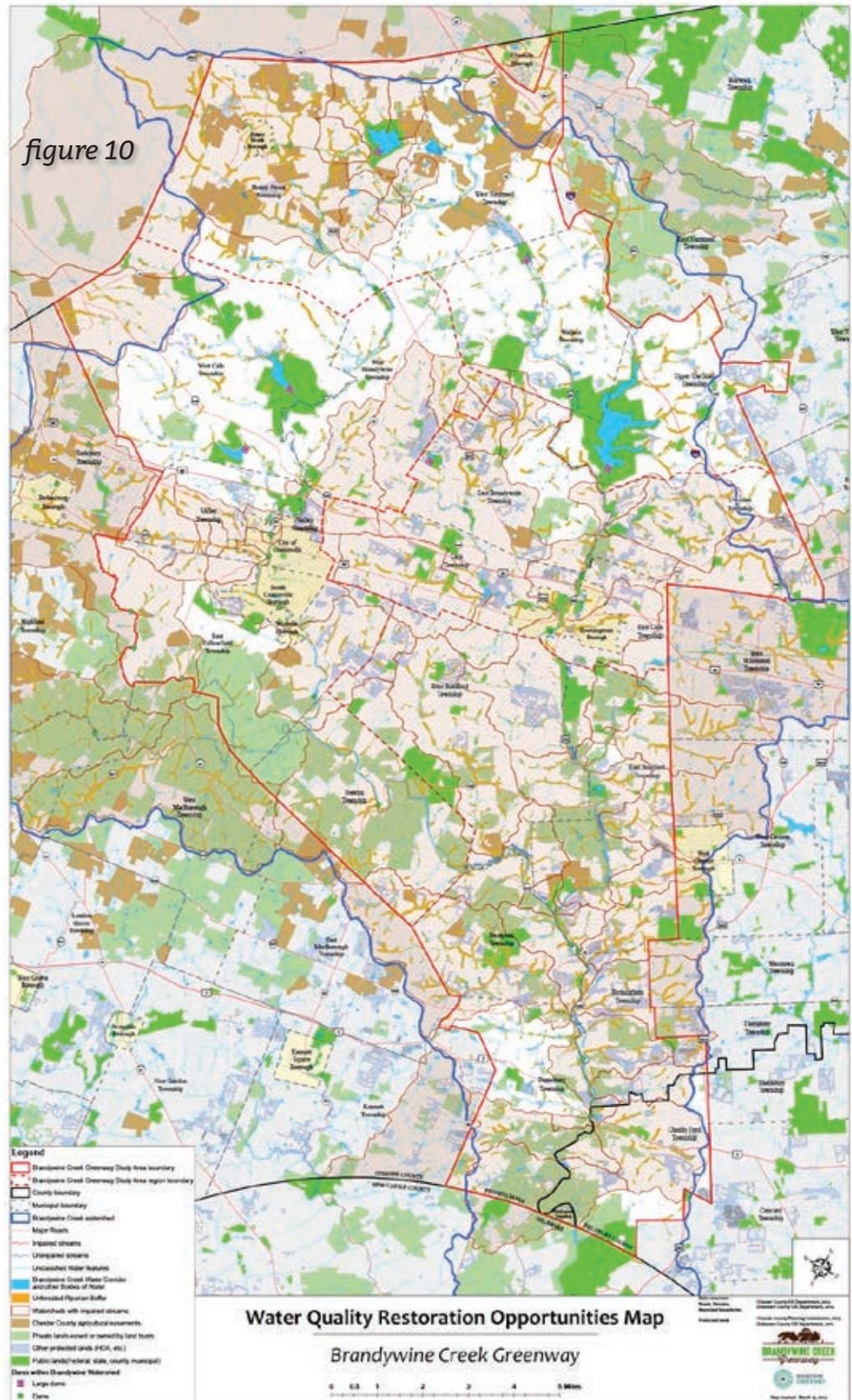
Unforested headwater stream



Hawk at Stroud Preserve, photo by Richard Beck

Water Restoration Opportunities (Figure 10)

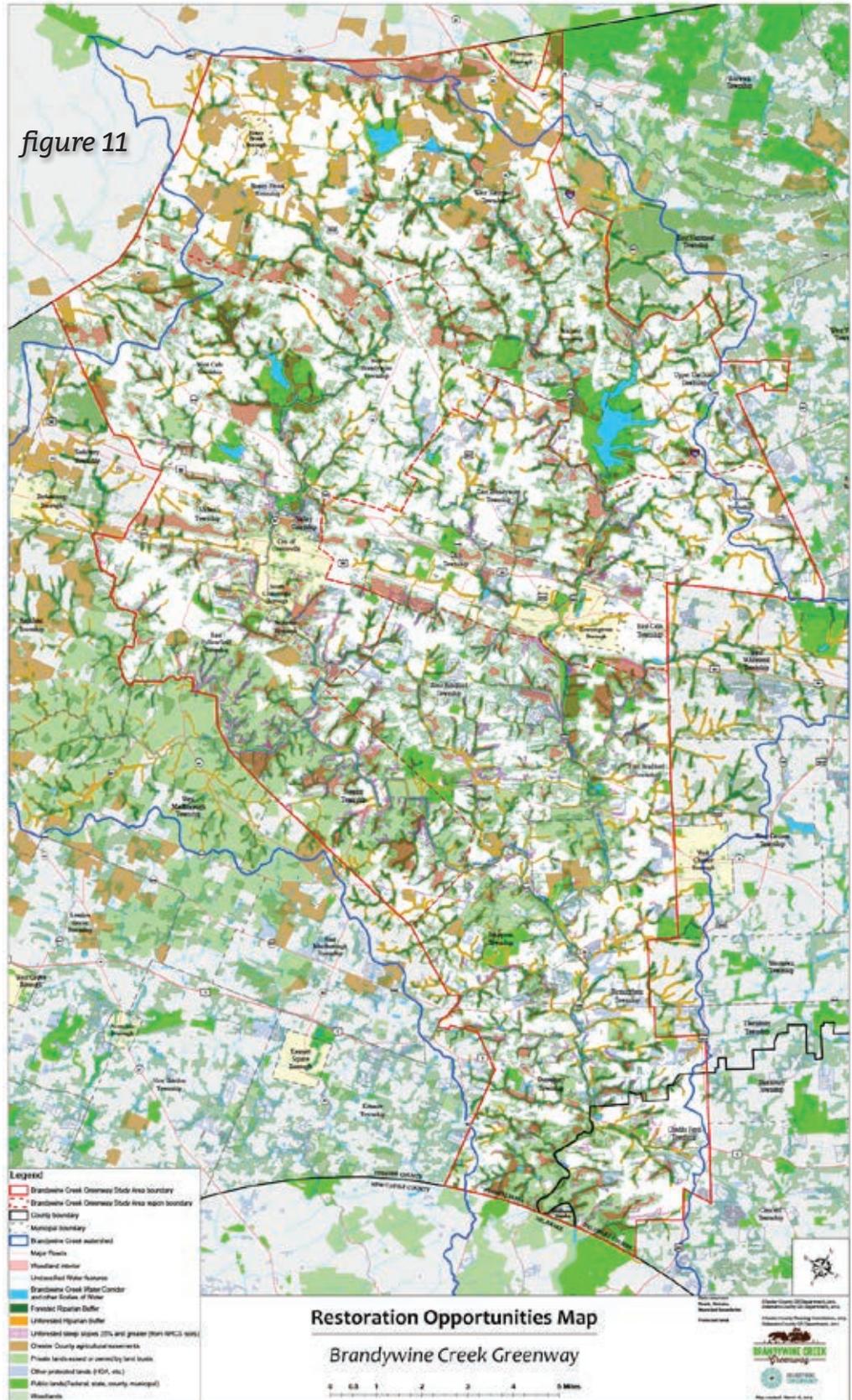
- **Dams**—removal of small dams where appropriate and feasible to reduce sedimentation and lower water temperature, to be addressed by municipalities in partnership with appropriate owners and state agencies
- **Impaired Streams** stream bank stabilization through reforestation, stormwater best management practices and green infrastructure on private and public lands
- **Watersheds with Impaired Streams**—stream bank stabilization through reforestation, stormwater best management practices and green infrastructure on private and public lands
- **Unforested riparian buffer**—reforestation of stream banks, minimum 100’ width (recommended as a municipal regulation)



Habitat Restoration Opportunities (Figure 11)

- **Unforested steep slopes 25% and greater (data based upon slopes derived from the NRCS soils data)**—reforestation not only helps to stabilize soils, prevent erosion and sedimentation of streams, it also provides future habitat for a number of insects and mammals
- **Unforested riparian buffers**—reforestation of riparian buffers creates safe travel corridors where wildlife can find shelter as they move from one island refuge to another, minimum 100' width

Woodland Interiors are woodlands with a minimum distance of 300' to the nearest edge. They are minimum of 1 acre, depending upon shape, and are critical for providing special breeding conditions for a number of species of birds and other small mammals. Reforestation of gaps between woodland fragments in upland areas should be implemented in order to augment woodlands and ensure in the long term availability of woodland interior habitat.



4. Natural Resource Protection Standards

How to Use these Model Standards

The following natural resource protection (NRP) standards were initially developed based on zoning ordinances that were adopted within several of the Brandywine Greenway municipalities, most notably Pennsbury and Kennett Townships. Additional standards, modifications, and notes were then added so the standards could be adapted for use by other municipalities. The model standards presented below provide the minimum requirements recommended. Additional woodland and forested riparian buffer standards that provide a higher level of protection are also mentioned at the end of their respective sections.

The NRP standards present a template for addressing the minimum protection needed under ideal conditions. These model standards should be modified to reflect the conditions existing within a specific municipality. For the sake of simplicity, these standards refer to a “Township.” For Boroughs or cities, the terms “Borough” or “City” can be substituted for “Township.” Some zoning ordinances are divided into “Chapters” while others are divided into “Articles.” The template below uses the term “Article” but it can be replaced with “Chapter.”

The template is organized into the following sections:

- **Section 1.0:** Purpose (Page 330)
- **Section 2.0:** General Provisions (Page 331)
- **Section 3.0:** Natural Resource Protection Standards (Page 331)
 - **Section 3.1:** Floodplain Protection Standards (Page 332)
 - **Section 3.2:** Steep Slope Protection Standards (Page 333)
 - **Section 3.3:** Woodland and Specimen Tree Protection Standards (Page 336)
 - **Section 3.4:** Timber Harvesting Regulations (Page 340)
 - **Section 3.5:** Riparian Buffer Protection Standards (Page 343)
 - **Section 3.6:** Wetland and Wetland Margin Protection Standards (Page 347)
- **Section 4.0:** Application of Natural Resource Protection Standards (Page 350)

The Legal Basis for Natural Resource Protection

Article I, Section 27 of the Pennsylvania Constitution is known as the “Environmental Amendment.” It states that, “The people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic, and aesthetic values of the environment. Pennsylvania’s natural resources are the common property of all the people, including generations yet to come. As trustees of these resources, the Commonwealth shall conserve and maintain them for the benefit of all people.”

The Municipalities Planning Code (MPC) is the legislation that empowers municipalities to plan their development through the use of comprehensive planning, ordinances, and official maps. While the comprehensive plan provides the policy basis for protecting resources, the zoning ordinance and subdivision and land development ordinance (SLDO) are the two primary means of regulating and protecting natural resources at the municipal level. A municipality is authorized to address natural resources protection in its zoning ordinance by the following sections of the MPC:

- **Section 603(b)** states that, except as preempted by specific acts, zoning ordinances may “permit, prohibit, regulate, restrict, and determine...protection and preservation of natural and historic resources and prime agricultural land and activities.”
- **Section 604(1)** states, in part, that zoning ordinance provisions “shall be designed to promote, protect, and facilitate...[the] preservation of the natural, scenic, and historic values in the environment and preservation of forests, wetlands, aquifers, and floodplains.”
- **Section 605** allows additional zoning classifications to be created specifically for “the regulation, restriction, or prohibition of uses and structures at, along, or near: (ii) natural or artificial bodies of water, boat docks, and related facilities; (iii) places of relatively steep slope or grade, or other areas of hazardous geological or topographic features;...(vii) floodplain areas, agricultural areas, sanitary landfills, and other places having a special character or use affecting and affected by their surroundings.”

A municipality is authorized to address natural resources protection in its SLDO by the following Sections of the MPC:

- **Section 503(2)(v)** allows for provisions that ensure that “land which is subject to flooding, subsidence, or underground fires shall be made safe for the purpose for which such land is proposed to be used, or that such land shall be set aside for uses which shall not endanger life or property or further aggravate or increase the existing menace.”
- **Section 503(10)** allows “provisions and standards for insuring that new developments incorporate adequate provisions for a reliable, safe, and adequate water supply to support intended uses within the capacity of available resources.”

The MPC also supports the municipal protection of natural resources through the following sections:

- **Sections 609.1(c)(3) and (4)** require the governing body, in the consideration of curative amendments, to consider “the suitability of the site for the intensity of the use proposed by the site’s soils, slopes, woodlands, wetlands, flood plains, aquifers, natural resources, and other natural features;” and “the impact of the proposed use on the site’s soils, slopes, woodlands, wetlands, flood plains, natural resources and natural features, the degree to which these are protected or destroyed, the tolerance of the resources to development and any adverse environmental impacts.”
- **Section 916.1** requires the zoning hearing board decision to consider the same environmental issues as outlined above when deliberating on a challenge to the validity of an ordinance.

Other state legislation that supports for the protection of natural resources include:

- **The Clean Streams Act of 1937** regulates discharges to the state’s waters and was intended to preserve and improve the purity of the waters of the Commonwealth.
- **The Flood Plain Management Act of 1978** is intended to limit the loss of life and property damage due to flooding. In order to qualify for national flood insurance, municipalities must enact floodplain management regulations to control development in the 100-year floodplain.
- **Dam Safety and Waterway Encroachment Act of 1978** regulates the construction, operation, modification, and maintenance of dams, reservoirs, and structures that encroach and alter a waterbody.

Where to Include the Technical Definitions in NRP Standards

NRP standards often include technical terms used in the natural sciences that are not commonly used in day to day conversation. These terms need to be defined within a zoning ordinance. While most municipal zoning ordinances define terms within a “Terminology” or “Definitions of Terms” article, technical terms and their definitions could also be presented at the beginning of each zoning ordinance section that addresses a given set of natural resources. Such an approach allows the user of the document to scan the definitions and then immediately see how they relate to the regulations presented on the following pages.

A term that is defined in the body of a zoning ordinance should also be listed without its definition in the “Terminology” or “Definitions of Terms” article, which is usually the second article of the zoning ordinance, along with a reference to the appropriate section. For example, if the term Wetland Margin is fully defined in the section addressing wetlands protection, then the term Wetland Margin should also be listed in Article 2 as:

“WETLAND MARGIN—For definition, see Section _____, “Wetlands and Wetland Margins Protection Standards.”

By using this approach, there will be only one definition for Wetland Margin. If in the future, the scientific community provides an improved definition for Wetland Margin, the definition can be updated in just one section of the zoning ordinance, thus ensuring that this definition is consistent through the entire document.



The Laurels Preserve, photo by Chuck Bowers

Section 1.0: Purpose

NRP standards should begin with a “Purpose Section,” as presented below. This section is needed to demonstrate that the ordinance reflects municipal policies set forth in the municipal comprehensive plan, or other documents that set municipal policy. This approach helps to protect the municipality if their NRP zoning provisions are challenged in court. Zoning provisions are easier to defend if they directly relate to municipal policies that were formulated based on mapping, technical studies, and public surveys documented within a comprehensive plan.

In the text below, the NRP standards are designated as Article 10, although they can be given any number appropriate to a specific ordinance. NRP standards are typically located after the zoning district articles. What is of key importance is that all NPR standards be located together in one article (with a separate floodplain ordinance sometimes being the exception to the rule). Locating all NRP standards in one article makes for a more user-friendly document and helps to ensure that conflicting standards are not inadvertently created.

The text box below presents model purpose language.

ARTICLE X
Natural Resource Protection Standards

SECTION 1.0—PURPOSE

The purpose of this Article is to promote public health, safety, and general welfare by minimizing adverse impacts to the environment, and the plants, animals, and humans who live within it. This Article is intended to meet the following objectives:

- 1.1 Evaluate the potential environmental impacts on valuable natural resources and protect them through the implementation and enforcement of these natural resource protection standards.
- 1.2 Identify and conserve environmentally sensitive lands including floodplains, steep slopes, woodlands, water bodies (such as ponds and lakes), watercourses (such as streams and rivers), riparian buffer areas, wetlands, and wetland margins.
- 1.3 Minimize the disturbance of steep slope areas to limit soil erosion, to prevent damage to property, to protect natural vegetative cover, and to prevent siltation of streams and the degradation of water quality.
- 1.4 Implement the recommendations for natural resource protection as presented in Chapter ____ of the *NAME* Comprehensive Plan.

NOTES:

- **Regarding Section 1.0: Municipalities Underlain by Carbonate Geology**—In municipalities that are underlain by carbonate geology, a fifth subsection can be added to this section which reads:
 - “1.5 Protect areas of carbonate geologic formations and associated water resources from land use and development patterns which would threaten soil stability, slopes, and water quality and quantity as a result of pollution and the alteration of natural drainage patterns.”
- **Regarding Section 1.2: Municipalities with Hedgerows**—In municipalities which have existing hedgerows that are part of the local community character the word hedgerows can be added to the list of “environmentally sensitive lands.” Such an addition would be appropriate in more rural or lower density communities. Established hedgerows often contain many non-native plants like multiflora rose, and so there is a need to balance the preservation of hedgerows with the desire to promote the use of native plants.

Section 2.0: General Provisions

The “General Provisions Section” documents those municipal-level activities (such as applications for subdivision or zoning permits) which must follow the NRP standards. The General Provisions Section lists those activities that are regulated by the municipality, and not those activities that may be regulated at the state or national level. This section makes it clear to the reader how and when the standards apply, as well as what to do in the case of overlapping resources.

The text box below presents model general provisions.

SECTION 2.0 GENERAL PROVISIONS.

- 2.1** It shall be a violation of this Article for an individual or entity to regrade, fill, pipe, divert, channel, build upon, or otherwise alter or disturb a natural resource protected by this Article prior to the submission, review, and approval by the municipality of:
 - 2.1.1** Applications for zoning or building permits;
 - 2.1.2** Subdivision or land development plans;
 - 2.1.3** Conditional use or special exception applications;
 - 2.1.4** Zoning variances;
 - 2.1.5** Timber harvesting plans (if applicable); or
 - 2.1.6** Any other applicable permit or approval required by the Township that would involve disturbance of natural resources protected in this Article.
- 2.2** In the event that two or more natural resources overlap, the resource with the greatest protection standard (the least amount of alteration, regrading, clearing, or building) shall apply to the area of overlap.
- 2.3** Where disturbance of a natural resource is permitted, it shall not take place until the municipal engineer or another professional as designated by the Township has provided a determination that such disturbance is consistent with the provisions of this Article and other applicable ordinance provisions.
- 2.4** Restrictions to the disturbance of resources shall apply before, during, and after construction on a site.
- 2.5** Plan information that is required by this Article shall be verified as correct by the municipal engineer or another qualified professional as determined by the municipal engineer.

Section 3.0: Specific Natural Resource Protection Standards

In this model ordinance, all the specific NRP standards are located in one section, divided up into a number of subsections each addressing unique topics as presented below.

Section 3.1: Floodplain Protection Standards

As noted previously, municipalities are empowered to address floodplains in their zoning and SLDO by the MPC (Act 247), specifically Sections 604(1), 605, 503(2)(v), and 609.1(c)(3) and (4). All municipal floodplain standards must meet current Federal Emergency Management Agency (FEMA) guidelines to ensure that the municipality is eligible for Federal flood insurance.

Floodplains absorb and store large amounts of water that are then absorbed into the soil and eventually recharge the aquifer. Naturally vegetated floodplains can catch and filter sediments from floodwaters and also reduce the velocity of sediment laden water. Furthermore, the natural vegetation of floodplains filters water runoff by collecting and holding nutrients, chemicals, and pollutants. Vegetated floodplains also provide valuable wildlife habitat, since most animals prefer to live near the open water which they drink.

Floodplains benefit humans by providing recreation, scenic, and open space opportunities, all of which improve real estate values and quality-of-life. While floodplain land is usually narrow, it provides a valuable source of open space, especially in highly developed communities. Floodplains can also link existing parks and open space areas by using floodplain corridors that commonly fringe creeks, streams, and wetlands.

In many municipalities, technically detailed floodplain standards are located in their own separate article within a zoning ordinance commonly called the “Flood Hazard Overlay District.” A model flood plain overlay district is not included here since it already is likely to exist in a zoning ordinance pursuant to FEMA regulations. However, not all floodplain ordinances approved by FEMA are alike; some allow more disturbance or uses in the floodplain than others. In the sample section presented below, a full set of floodplain standards have not been included. Regardless of where floodplain standards are included, such standards must meet FEMA guidelines and, in general, ensure that no new structures are built within the 100-year floodplain.

SECTION 3.0 SPECIFIC NATURAL RESOURCE PROTECTION STANDARDS.

3.1 Floodplain Protection Standards.

3.1.1 Floodplain Definitions. Unless otherwise expressly stated, the words and phrases in this and all other Articles of this ordinance, shall have the meaning presented in Article 2 or in Article ____ “Flood Hazard Overlay District.”

3.1.2 Floodplain Disturbance. Areas identified as within the Flood Hazard District of the one-hundred (100) year recurrence interval flood shall not be altered, regraded, filled, or built upon except in conformance with Article ____ and in accordance with Section _____.

Section 3.2: Steep Slope Protection Standards

As noted previously, municipalities are empowered to address steep slopes in their zoning and SLDO by the MPC (Act 427), specifically Sections 605, and 609.1(c)(3) and (4). Section 605(2)(iii) is more specific, stating that zoning ordinances may regulate, restrict, or prohibit “uses and structures at, along, or near...places of relatively steep slope or grade, or other areas of hazardous geological or topographical features.”

Steep slopes typically have shallow soils that make them highly vulnerable to erosion, particularly when natural vegetation has been disturbed. This vulnerability to erosion is of particular concern since steep slopes border many stream valleys. Once erosion has begun, it is often difficult and expensive to control. If left unchecked, erosion can spread upslope or down slope and into adjacent properties. Because many steep slopes are wooded, there is often a natural system of erosion protection already in place.

Limiting development on steep slopes, whether natural or manmade, is important for preventing soil erosion, minimizing pollution of surface waters, preserving stream banks, and reducing flooding, as well as other hazards. Improper development of steep slopes can lead to higher construction costs, and increased rates of septic system failures. According to PA DEP Chapter 73, septic systems are not permitted on slopes of greater than 25 percent, while engineered systems are required at the upper end of the permitted range. Ideally, steep slopes should be maintained under a dense forest or meadow cover to prevent erosion, stream sedimentation, and other problems associated with their development.

The text box below presents model standards for steep slope protection.

3.2 Steep Slope Protection Standards.

3.2.1 Steep Slope Definitions. Unless otherwise expressly stated, the following words and phrases shall, for the purposes of this and all other articles of this ordinance, have the meaning presented below:

SLOPE—The ratio of the change in elevation over the horizontal distance as measured between consecutive contour lines, expressed as a percent.

STEEP SLOPES—Those areas of land, whether natural or man-made, which are characterized by a change in elevation of fifteen (15) feet or more within a one-hundred (100) foot horizontal distance and which, because of this slope, are subject to high rates of stormwater runoff and susceptible to erosion. Steep slopes include:

MODERATELY STEEP SLOPES—Those areas of land where the grade is fifteen (15) percent to twenty-five (25) percent.

VERY STEEP SLOPES—Those areas of land where the grade is greater than twenty-five (25) percent.

STEEP SLOPE MARGIN—any area not otherwise regulated as Steep Slope and located within twenty-five (25) feet upslope of any area regulated as Steep Slope, measured perpendicularly to the contour of the land. Areas measured laterally or downslope of Steep Slope areas shall not be regulated as Steep Slope Margin.

3.2.2 Minimizing Impacts to Steep Slopes. Steep slope areas, whether natural or man-made, shall be preserved in their original state whenever possible. Where construction of roads, buildings, driveways, or infrastructure cannot be avoided, disturbance shall be kept to the minimum necessary. In no case shall disturbance exceed the following permitted limits for any lot, tract, or access way:

- a. No more than thirty (30) percent of moderately steep slopes shall be regraded, removed, built upon, or otherwise altered or disturbed.
- b. No more than fifteen (15) percent of very steep slopes shall be regraded, removed, built upon, or otherwise altered or disturbed. In addition, the disturbance permitted on very steep slopes shall be limited to the following activities:
 - 1) Grading for the minimum portion of a road or driveway necessary to access the principal use of the property, or to access sewer, water, and other utility lines when it can be demonstrated that no other routing is feasible.
 - 2) Timber harvesting, when conducted in compliance with the required timber harvesting plan (see Section ____, Woodlands and Specimen Vegetation Protection Standards). Clearcutting or grubbing of trees is prohibited on very steep slopes.

3.2.3 Measuring Steep Slopes. Slopes shall be measured as the change in elevation over the horizontal distance between consecutive contour lines and expressed as a percent. For the purpose of application of these regulations, slope shall be measured over three (3) or more two (2) foot contour intervals, which is six (6) cumulative vertical feet of slope. All slope measurements shall be determined by a topographic survey signed and sealed by a registered surveyor or engineer licensed to practice in the Commonwealth of Pennsylvania.

3.2.4 Construction on Steep Slopes. In steep slope areas, each building or structure shall be constructed in such a manner as to provide the least necessary alteration of the existing grade, vegetation, and existing soils. Excessive cut-and-fill shall be avoided. New roads and improvements to existing roads should be designed to conform to the existing contours of the land to the greatest extent possible, and where applicable, strive for compatibility with the character of existing rural roads.

3.2.5 Cut-and-fill Slopes. The finished slopes of permitted cut-and-fill areas shall not exceed thirty-three (33) percent slope unless the applicant can demonstrate the method by which steeper slopes can be adequately stabilized and maintained.

3.2.6 Disturbing Steep Slopes. Any disturbed area of very steep slopes, or any cut-and-fill resulting in slopes of greater than twenty-five (25) percent, shall be protected with an erosion control blanket. All stockpiles of earth intended to be stored for more than twenty-one (21) days shall be seeded or otherwise stabilized to the satisfaction of the municipal engineer.

3.2.7 Erosion and Sedimentation Control. Any disturbance of land shall be in compliance with Pennsylvania Department of Environmental Protection, Title 25, Chapter 102 and the erosion and sedimentation control standards presented within the stormwater management regulations of article ____ of the Township Subdivision and Land Development Ordinance. An erosion and sedimentation control plan and soil stabilization plan shall be submitted to demonstrate how soil will be protected from erosion during construction, and how soil will be stabilized upon the completion of construction.

3.2.8 Submission of Plans. If the plans listed below have not been previously submitted as part of the subdivision or land development plan application, the plans listed below shall be submitted to the Township with a building or zoning permit, or a conditional use, special exception, or other application, when applicable:

- a. The erosion and sedimentation control and soil stabilization plan described in Subsection 3.2.7 above.
- b. A grading plan that shall identify the existing contours of the site, proposed finished grades, and the proposed location of all buildings and structures.

NOTES:

- **Regarding Section 3.2: Additional Regulation of Steep Slope Margins**—This Section can also require that STEEP SLOPE MARGINS—defined as the upslope area within twenty five (25) feet of any regulated steep slope—shall be regulated in the same manner as Moderate Steep Slopes.
- **Regarding Section 3.2.2 (a) and (b): More Restrictive Moderate Steep Slope Regulations**—In municipalities that desire more rigorous steep slope protection, this section can require no more than twenty five (25) percent of moderately steep slopes, and no more than ten (10) percent of very steep slopes shall be regraded, removed, built upon, or otherwise altered or disturbed.
- **Regarding Section 3.2.6: Protecting Steep Slopes with an Erosion Protection Blanket**—In some municipalities, any disturbed area of very steep slopes, or any cut-and-fill resulting in slopes of greater than twenty (20) percent, shall be protected with an erosion control blanket
- **Regarding Section 3.2.7: Municipalities with a Stormwater Management Ordinance**—Some municipalities may have a Stormwater Management Ordinance (such as an Act 167 Ordinance) that is separate from their Subdivision and Land Development Ordinance. In these municipalities, the erosion and sedimentation control standards may presented within the Stormwater Management Ordinance and not within the Subdivision and Land Development Ordinance. If this is the case, Section 3.2.7 should provide a reference to direct the reader to the Stormwater Management Ordinance.

Section 3.3: Woodland and Specimen Vegetation Protection Standards

As noted previously, municipalities are empowered to address woodlands and vegetation in their zoning and SLDO by the MPC (Act 247), specifically Sections 604(1), and 609.1(c)(3) and (4). Furthermore, Section 603(f) requires that timber harvesting be permitted “by right in all zoning districts in every municipality.” Therefore it is recommended that municipalities include some provisions for timber harvesting as a land use, as well as definitions that clearly differentiate timber harvesting *as a use* from other woodland removal activities.

Woodlands play a critical role in sustaining natural diversity by supporting a variety of species which would not occur in other habitats. Certain species of forest plants and wildlife depend on the unique conditions of a healthy forest ecosystem. Many songbird species need interior forest conditions and will not nest elsewhere. Numerous wildflower species only bloom in the rich soils of a forest floor.

Two serious problems that affect the long term health and quality of woodlands are infestations of invasive, non-native plant species and the overpopulation of white tail deer. Because of their rapid growth and propensity to reproduce, plant species such as Norway Maple, Multiflora Rose, and Japanese Honeysuckle, often outcompete native species and become the dominant species of the area. Such aggressive non-native species impair forest regeneration by creating such dense masses that tree species will not grow, and in some cases will die off and be replaced by non-native species.

Some municipalities possess hedgerows which may warrant protection. Hedgerows can have a natural resource benefit, such as proving a wind break for nearby open fields. In some less-developed communities, there are hedgerows that have been in place for centuries and so can be viewed as historical or cultural resources. Some municipalities may choose to include hedgerows as a feature to be protected in this section along with woodlands and specimen vegetation. However, hedgerows commonly contain invasive species such as Multiflora Rose, and so should not be regarded as ideal natural habitats. The template presented below *does not include* hedgerows.

The text box below presents model standards for woodland and specimen vegetation protection.



Photo by Chuck Bowers

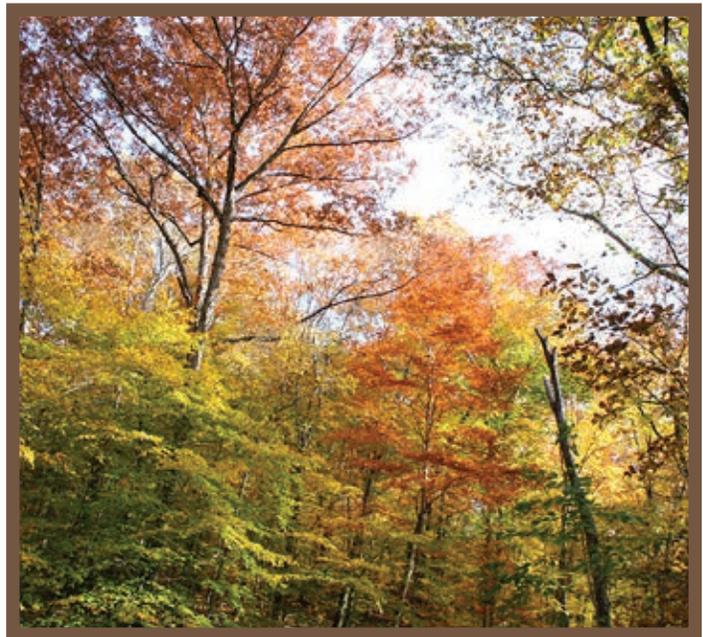


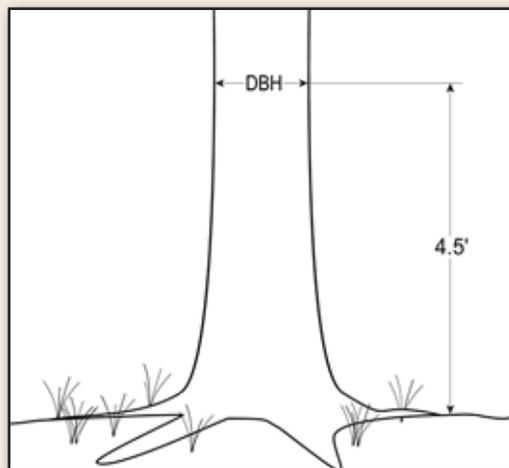
Photo by Chuck Bowers

3.3 Woodland and Specimen Vegetation Protection Standards.

3.3.1 Woodland Definitions. Unless otherwise expressly stated, the following words and phrases shall, for the purposes of this and all other articles of this ordinance, have the meaning presented below:

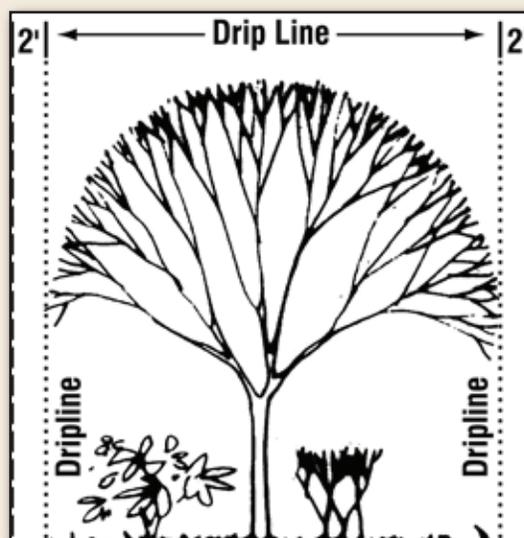
DIAMETER AT BREAST HEIGHT (DBH)—The diameter of a tree trunk, measured at four and one-half (4.5) feet from the ground surface at the point of the highest elevation in contact with the trunk of such tree. (See Figure 3.1)

Figure 3.1: Diameter at Breast Height



DRIP LINE—A generally circular line, the circumference of which is determined by the outer reaches of a tree’s widest branching points. (See Figure 3.2)

Figure 3.2: Drip Line



FORESTRY—The management of forests and timberlands when practiced in accordance with accepted silvicultural principals, through developing, cultivating, harvesting, transporting and selling trees for commercial purposes, which does not involve any land development. Forestry shall include timber harvesting operations, as defined in this Article. (See also Timber Harvesting Operation.)

OLDFIELD—An area undergoing natural succession characterized by the presence of herbs, shrubs, and small trees (seedlings) whose branches do not form a complete or nearly complete aerial canopy.

SPECIMEN TREE—Any tree meeting the definition of specimen vegetation.

SPECIMEN VEGETATION—Any tree or other vegetation determined to be of specimen quality as determined by a registered landscape architect, registered arborist, or horticulturist, or which generally falls within the parameters of Figure 3.3. The examples of specimen trees included in Figure 3.3 are intended to provide general guidelines and examples of what constitutes a specimen tree and are not considered all inclusive for the purpose of defining specimen vegetation.

Figure 3.3: Examples of Potential Specimen Trees

Species	Min. Size	Species	Min. Size	Species	Min. Size
Apple	24" DBH	Locust	30" DBH	Spruce	30" DBH
Ash	32" DBH	Maple	32" DBH	Sycamore	36" DBH
Beech	32" DBH	Oak	32" DBH	Tulip Poplar	36" DBH
Cherry	24" DBH	Osage Orange	20" DBH	Walnut	30" DBH
Elm	30" DBH	Pine	30" DBH	Hickory	32" DBH
Hemlock	30" DBH	Sassafras	20" DBH		

Source: Brandywine Conservancy, Environmental Management Center

TIMBER HARVESTING OPERATION—The disturbance for commercial purposes, and in compliance with an approved timber harvesting plan, of more than one-half (1/2) acre of woodland on any lot, whether during a single timber harvesting operation or cumulatively in successive operations within a three (3) year period. The removal of dead or diseased trees or non-native invasive species, the cutting of trees for personal firewood use or as a part of a Christmas tree farming operation, or the clearing of an area in accordance with an approved subdivision or land development plan or building permit shall not be considered a timber harvesting operation. Timber harvesting operation is a practice which falls within the definition of forestry. (See also FORESTRY.)

TIMBER HARVESTING PLAN—A description, by means of text and maps, of proposed actions involving the removal of trees from a tract of land. Such plan shall have been prepared by a forester with demonstrable expertise and experience (such as a degree in forestry, natural resource management, environmental sciences, or a related discipline) in forest management and shall be in accordance with the requirements of Section 3.3 of this Article. (Note: Pennsylvania does not have a certification requirement for foresters; however a forester can choose to be certified through the Society of American Foresters.)

WOODLANDS—A tree mass or plant community covering an area of one-quarter (1/4) acre or more, in which tree species are dominant or co-dominant and the branches of the trees form a complete, or nearly complete aerial canopy. The extent of any woodland plant community or any part thereof shall be measured from the outermost drip line of all the trees in such plant community. Woodlands shall include any area where timber has been harvested within the previous three (3) years and/or woodland disturbance has occurred within the previous three (3) years that would have met the definition of woodland prior to timbering or disturbance. Woodlands do not include orchards or oldfields. Oldfields are now defined as former cropland.

WOODLAND DISTURBANCE—Any activity which constitutes a land disturbance within a woodland, or any activity that alters the existing structure of a woodland. Alterations include the cutting or removal of canopy trees, sub-canopy trees, under-story shrubs and vines and herbaceous woodland floor species. Woodland disturbance does not include the selective cutting or removal of invasive plant species or the removal of vegetation which constitutes a hazardous condition.

3.3.2 Specimen vegetation. Where permitted, removal of specimen vegetation shall be minimized. Specimen vegetation shall not be removed from any lot or tract except where the applicant demonstrates to the satisfaction of the Board of Supervisors that such removal is essential to eliminate a hazardous condition(s) or otherwise permit lawful use of the lot or tract. Specimen trees to be retained may be credited toward tree replacement required by Section ____ (SEE NOTE “A” BELOW) of the Township Subdivision and Land Development Ordinance.

3.3.3 Woodlands.

- a. Unless undertaken as an approved timber harvesting operation conducted in compliance with the requirements of Article X, Section 3.0, the following disturbance limitations shall apply:
 - 1) For residential uses, no more than thirty-five (35) percent of woodlands shall be regraded, removed, built upon, or otherwise altered or disturbed; and
 - 2) For non-residential uses, no more than fifty (50) percent of woodlands shall be regraded, removed, built upon or otherwise altered or disturbed.
- b. When determining where permitted woodland disturbance will occur, the following factors shall be considered by the applicant and the Township:
 - 1) The location(s) and benefit of conservation of healthy mature woodland stands.
 - 2) Each building or structure shall be constructed in such a manner as to provide the least alteration or disturbance necessary of the existing woodland. Where possible, clearcutting shall be minimized and trees shall be selectively removed.
 - 3) Where possible, the remaining undisturbed woodlands and other vegetation shall interconnect with woodlands or wooded areas of adjacent properties to preserve continuous woodland corridors and allow for the normal movement, dispersion, and migration of wildlife. The applicant shall consider the impacts, in terms of functions and values to wildlife, of separating, dividing, or encroaching on wildlife travel corridors or extensive habitat areas, especially woodlands exceeding ten (10) acres in area.

- 4) In each situation where the standards of this Section are applied, consideration shall be given to balancing the benefits of woodland preservation with other valuable resources on the site, including scenic views. The Township shall not unreasonably restrict woodland disturbance where limited disturbance may permit siting of buildings in less visually obtrusive areas of the tract.
- c. Woodland removal for purposes of development pursuant to the requirements of this Section shall not be regulated as timber harvesting, except that the management practices set forth in Section 3.4.5 shall apply.

3.3.4 Protection of woodlands and specimen vegetation to remain on site. Woodlands, individual trees, and other vegetation that are to remain on the site shall be identified on the plan and protected from land disturbance and construction activities in accordance with the following tree protection provisions to protect vegetation from mechanical injury and grading change.

- a. Where existing trees are to remain, no change in existing grade shall be permitted within the drip line of the trees. Prior to any land disturbance, appropriate fencing four feet in height shall be placed at the drip line of trees to remain, wherever adjacent to proposed construction. Such fencing shall be maintained in place throughout the duration of construction activity and shall be inspected by the Township prior to initial land disturbance. Roots shall not be cut within the drip line of any trees to remain.
- b. Trees within twenty-five (25) feet of a building, or bordering entrances or exits to building sites, shall be protected by a temporary barrier to be maintained in place throughout the duration of construction activity.
- c. No boards or other material shall be nailed or otherwise attached to trees during construction.
- d. Construction materials, equipment, soil and/or debris shall not be stored nor disposed of within the drip lines of trees to remain, except for mulched vegetative matter used to prevent soil compaction.
- e. Tree trunks, limbs, and exposed roots damaged during construction shall be protected from further damage by being treated immediately in accordance with accepted professional landscape procedures.

3.3.5 Tree Replacement. Tree replacement shall be required in accordance with the standards of Section ____ (SEE NOTE "A" BELOW) of the Subdivision and Land Development Ordinance.

Section 3.4: Timber Harvesting Regulations

- 3.4.1** Timber harvesting operation shall only be undertaken in accordance with a timber harvesting plan approved by the Township.
- a. All timber harvesting plans shall be submitted to the Township for review for compliance with the standards set forth herein not less than twenty-one (21) days prior to commencement of the timber harvesting operation. Within fourteen (14) days of submission of a timber harvesting plan to the Township, and based on review for compliance with the standards set forth herein, the Zoning Officer shall indicate to the applicant approval or denial of the submitted plan or approval subject to reasonable conditions.
 - b. The Township may retain a forester (such as one certified by the American Society of Foresters) to review the timber harvesting plan and comment on its adequacy in meeting the intent of these regulations.
- 3.4.2** Timber harvesting plans submitted to the Township for review and approval shall include the following information:
- a. Site location and boundaries of both the entirety of the property upon which the timber harvesting operation shall occur and the specific area proposed for timber harvesting;
 - b. Significant natural features on the property including steep slopes, wetlands, and riparian buffer zones;
 - c. Identification of specimen vegetation as defined by this Article;
 - d. Description of how long-term sustainability of the timber harvesting operation and regeneration of the woodlands will be achieved;
 - e. The general location of the proposed operation in relation to municipal and state highways and any proposed accesses to those highways;
 - f. Design, construction, maintenance, and retirement of the access system, including haul roads, skid roads, skid trails, and landings;
 - g. Design, construction, maintenance, and retirement of water control measures and structures such as culverts, broad-based dips, filter strips, and water bars; and
 - h. Design, construction, maintenance, and retirement of proposed stream and wetland crossings.
- 3.4.3** Any permits required by any other agency under any applicable regulation shall be the responsibility of the landowner or timber harvesting operator as applicable. Copies of all required permits shall be submitted to the Township prior to commencement of the timber harvesting operation.
- 3.4.4** The municipal engineer, Zoning Officer, and/or municipal Forester shall be permitted access to the site of any timber harvesting operation before, during, or after active timber harvesting to review, inspect, and ascertain compliance with the provisions set forth herein.

3.4.5 The following management practices shall apply to all timber harvesting operations:

- a. Felling or skidding across any public thoroughfare is prohibited without the express written consent of the Township or Penn DOT; whichever is responsible for the maintenance of said thoroughfare.
- b. No tops or slash shall be left within twenty-five (25) feet of any public thoroughfare or private roadway.
- c. Litter resulting from a timber harvesting operation shall be removed from the site before it is vacated by the operator.
- d. The operation shall not cause harm to the environment or any other property.

3.4.6 Timber harvesting operations shall not be permitted within any Zone One riparian buffer. Clearcutting or grubbing shall not be permitted within any Zone One or Two riparian buffer, the Flood Hazard District, or on very steep slopes.

3.4.7 Upon determination that a timber harvesting operation is in violation of these regulations, each day where any violation occurs shall constitute a separate violation subject to the provisions of this Article.

NOTES:

- **Regarding Section 3.3.1: Municipalities with Hedgerows**—For those municipalities that wish to address hedgerows, the following definition can be added to Section 3.3.1:
 “HEDGEROW—A hedgerow is a linear plant community dominated by trees and/or shrubs. Hedgerows often occur along roads, fence lines, property lines, or between fields, and may occur naturally or be specially planted (e.g. as a windbreak). For the purposes of this Chapter, hedgerows are considered woodlands and regulated as such.”
- **Regarding Section 3.3.1: Municipalities with Hedgerows**—In this definition the term “woodland” may be replaced by “woodland and hedgerow”.
- **Regarding Section 3.3.3: Municipalities with Hedgerows**—In the heading of this section, the term “woodland” may be replaced by “woodland and hedgerow”.
- **Regarding Section 3.3.3.b.2: Municipalities with Hedgerows**—In this section the term “woodland” may be replaced by “woodland or hedgerow”.
- **Regarding Section 3.3.3; Woodlands**—For those municipalities that wish to regulate woodland protection more precisely, woodlands can be mapped and ranked according to their ecological value utilizing GIS. Pocopson Township developed a woodland classification system with three woodland types (I, II, III), with Class I being the most valuable. New woodland protection regulations were then linked to these woodland classes. For example, in Pocopson Township, woodland disturbance of Class I woodlands on very steep slopes is limited to 5 percent. Pocopson Township’s woodland classification system is also used in regulating timber harvesting within the zoning ordinance.
- **Regarding Section 3.3.4: Municipalities with Hedgerows**—In this section, the term “Woodlands” may be replaced by “Woodlands, hedgerows”.

NOTE A: SLDO provisions for “Required Vegetation Replacement” are optional. A good example of such SLDO provision can be found in the Kennett Township SLDO, Section 517, which also includes additional guidance on the preservation of woodlands and vegetation.

Section 3.5: Watercourse and Forested Riparian Buffer Protection Standards

As noted previously, municipalities are empowered to address the lands near watercourses in their zoning and SLDO by the MPC (Act 247), specifically Sections 605 and 503(2)(v).

“Riparian” refers to the vegetated area of land adjacent to a watercourse, pond, lake, or wetland. The use of forested riparian buffers is one of the most effective techniques for the protection of surface water quality. The vegetation in a buffer slows the flow of stormwater running off the land, thus reducing the amount of pollutants and sediments that reaches a water body. Forested buffers along streams also stabilize stream banks and protect the water from direct sunlight, thus cooling it and making better habitat for aquatic species. Furthermore, fallen leaves from trees along streams serve as food and shelter for aquatic species. These forested buffers are most critical in watershed headwater areas.

The text box below presents model standards for watercourse and riparian buffer protection.

3.5 Riparian Buffers Protection Standards.

3.5.1 Riparian Buffer Definitions: Unless otherwise expressly stated, the following words and phrases shall, for the purposes of this and all other articles of this ordinance, have the meaning presented below:

COMMON OPEN SPACE—(For definition see Article 2).

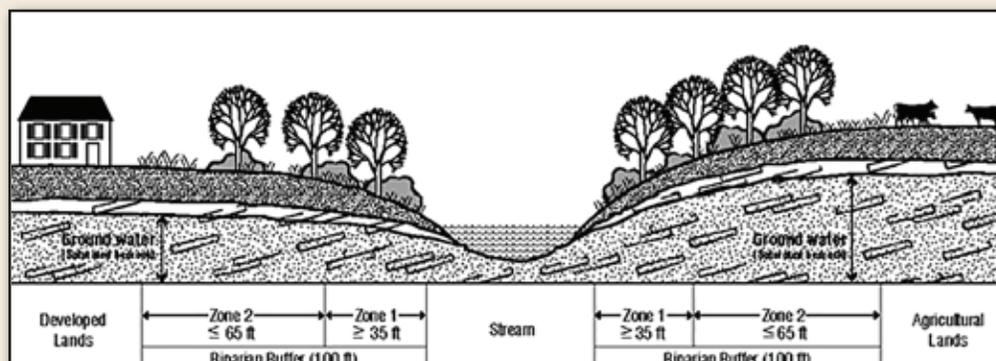
NATIVE PLANT SPECIES—(For definition see Article 2).

FORESTED RIPARIAN BUFFER—An area of primarily native trees and other vegetation adjacent to a watercourse that forms a transition area between the aquatic and terrestrial environment. The riparian buffer is designed to separate more intensive human land uses from sensitive water resources and especially to intercept runoff from upland sources for the purpose of mitigating the effects of nutrients, sediment, organic matter, pesticides or other pollutants prior to entry into surface waters.

WILDLIFE CORRIDOR—(For definition see Article 2).

3.5.2 Two Forested Riparian Buffer Zones. The forested riparian buffer shall consist of two Zones: Zone One, Inner Riparian Buffer and Zone Two, Outer Riparian Buffer. The provisions of Sections 3.5.3 and 3.5.4 below shall determine the specific widths of the individual riparian buffer zones. The total riparian buffer, consisting of Zone One and Zone Two, shall be a minimum of one-hundred (100) feet in width on each side of the watercourse.

Figure 3.1: Typical Riparian Buffer Scenario



3.5.3 Zone One—Inner Riparian Buffer. This zone shall begin at each edge of any identified watercourse and shall occupy a margin of land on each side, each with a minimum width of thirty-five (35) feet. The width of such margin shall be measured horizontally on a line perpendicular to the nearest edge of the watercourse at bankfull flow, as reviewed and approved by the municipal engineer.

Where very steep slopes (+25%) are located within or extend beyond the thirty-five (35) foot margin, the Zone One buffer shall be extended to include the entirety of the very steep slopes up to the total buffer width of one-hundred (100) feet on either side of the subject watercourse. Under such circumstances, the Zone One buffer may constitute the total riparian buffer and the restrictions of the Zone One buffer shall apply. No woodland disturbance, land disturbance, or timber harvesting shall be permitted within the Zone One Riparian Buffer, except for those uses or activities listed below:

- a. Regulated activities (such as permitted stream or wetland crossing) that are permitted by the Commonwealth, Army Corps of Engineers or other Federal agency;
- b. Provision for unpaved trail and trail access;
- c. Selective removal of hazardous or invasive alien vegetative species;
- d. Vegetation management in accordance with an approved landscape plan or open space management plan;
- e. A soil conservation project approved by the Chester County Conservation District; or,
- f. Removal of hazardous material or septic system, junk material, overhanging tree or diseased tree.

3.5.4 Zone Two—Outer Riparian Buffer. This zone begins at the outer edge of the Zone One riparian buffer and extends to a distance of sixty-five (65) feet from Zone One. However, where Zone One is greater than thirty-five (35) feet due to the presence of very steep slopes per Section 3.5.3 above, Zone Two shall cover the remaining distance necessary to achieve a total one-hundred (100) foot riparian buffer. No more than twenty (20) percent of a Zone Two Riparian Buffer on the lot that is affected shall be regraded, filled, built upon, or otherwise altered or disturbed, except for the following activities:

- a. Activities permitted in the Zone One Riparian Buffer.
- b. Timber harvesting, when conducted in compliance with a timber harvesting plan approved by the Township.

3.5.5 Riparian Buffer Disturbance. The following practices and activities are prohibited within the forested riparian buffer (both Zones One and Two), except with approval by the Township and, if required, the Pennsylvania Department of Environmental Protection:

- a. Clearing of existing vegetation except as specifically permitted in Sections 3.5.3 and 3.5.4 above.
- b. Soil disturbance by grading, stripping, or other practices.
- c. Filling or dumping.

- d. The use, storage, or application of pesticides, except for the spot spraying of noxious weeds or non-native species.
- e. Housing, grazing, or other maintenance of livestock.
- f. Storage or operation of motorized vehicles, except for maintenance of emergency use approved by the Township.
- g. Clearcutting or grubbing of timber.

3.5.6 Maintaining Riparian Buffer Vegetation. If currently wooded, the riparian buffer shall be maintained as woodlands. In places where the riparian buffer is not wooded, and until such buffers have become wooded, the buffer shall be maintained as a filter strip of dense grass and forbs no less than one (1) foot high or other methods to provide sediment filtering, and nutrient uptake, as well as to convert concentrated flow to uniform, shallow sheet flow.

3.5.7 Restoring Riparian Buffer Vegetation. When a subdivision or land development is proposed where there is no existing vegetated or wooded buffer (such as in agricultural areas), a one-hundred (100) foot forested riparian buffer shall be required in accordance with the following guidelines:

- a. Forest or other suitable vegetation shall be promoted through natural succession. Selective planting shall also be incorporated on sites devoid of vegetation to stimulate native species and discourage invasive species.
- b. Plant selection, planting, and on-going maintenance shall be planned by a landscape architect under the guidance of a licensed ecologist, the USDA, the Chester County Conservation District, the Pennsylvania Department of Environmental Protection, or the Pennsylvania Department of Conservation and Natural Resources.
- c. The following land uses and or activities are designated as potential water pollution hazards and shall be set back from any watercourse or, lake or pond by the distance indicated in Figure 3.2. Where more restrictive, the requirements of the Flood Hazard Overlay District shall apply:

Figure 3.2: Setbacks for Potential Water Pollution Hazards

Potential Water Pollution Hazards	Setback
Storage of hazardous substances	150 feet
Above or below ground petroleum storage facilities	150 feet
Drainfields from on-site sewage disposal and treatment system	100 feet
Solid waste landfills or junkyards	300 feet
Confined animal feedlot operations	250 feet
Subsurface discharges from a wastewater treatment plant	100 feet

3.5.8 Protective Covenants for Riparian Buffers. All riparian buffers created by a new subdivision shall be maintained through a declaration of protective covenant, which is required to be submitted for approval by the Township. The covenant shall be recorded in the land records and shall run with the land and continue in perpetuity. Management and maintenance requirement information shall be included in the covenant.

NOTES:

- **General Note: Avoiding Conflicting Standards**—Some municipalities include riparian buffer standards in their stormwater management ordinance. Such municipalities should be careful not to create duplicate or conflicting standards in their stormwater management ordinance and their zoning ordinance.
- **General Note: Extending the Riparian Buffer Width**—An additional section can be added after Section 3.5.5 that will address the option for extending the width of the riparian buffer under unique circumstances. The text box below present model standards for this option.

3.5.____ Extending the Riparian Buffer Width. The Township may require the buffer to be extended beyond the minimum one-hundred (100) foot width if there are steep slopes within close proximity to the watercourse that also drain into the watercourse system. In such cases, the riparian buffer width may be adjusted as follows:

- a. Where the buffer is adjacent to slopes between fifteen (15) percent and twenty-five (25) percent, a total of twenty-five (25) feet may be added to the outer limit of the one-hundred (100) foot buffer, creating a one-hundred twenty-five (125) foot wide buffer.
- b. Where the buffer is adjacent to slopes greater than twenty-five (25) percent, a total of fifty (50) feet may be added to the outer limit of the one-hundred (100) foot buffer, creating a one-hundred fifty (150) foot wide buffer.

General Note: Enhanced Riparian Buffer Standards—Each municipality may consider modifying the above sample riparian buffer standards and widths based on a desire for increased protection, and based on the existing level of land development in which streams or other watercourses are located. A wide forested buffer that is effective in a rural municipality may simply not be feasible in a densely developed suburban or urban community.

Found on www.conservationtools.org, the Pennsylvania Land Trust Association (PALTA) has published a *Guide and Model Ordinance for Pennsylvania Municipalities, Riparian Buffer Protection via Local Government Regulation*. This model ordinance also uses a two-zone forested buffer of 100 feet for non-impaired streams, but increases the minimum required width to 150 feet for impaired streams and streams designated as Special Protection (Exceptional Value and High Quality) waters. PALTA's model ordinance also includes a riparian buffer restoration requirement for impacted buffers, and a modification provision that permits limited exceptions to the width and restoration requirements in unique circumstances (see further explanation in Section 5.0). A copy of the model ordinance is also included in the Appendix for this Strategic Action Plan.

Section 3.6: Wetlands and Wetland Margin Protection Standards

As noted previously, municipalities are empowered to address woodlands and vegetation in their zoning and SLDO by the MPC (Act 247), specifically Sections 604(1), and 609.1(c)(3) and (4). Under Section 404 of the Federal Clean Water Act of 1977, as amended, wetlands are protected by the Army Corps of Engineers. Wetlands are also protected by the Pennsylvania Department of Environmental Protection as set forth in the provisions of the Dam Safety and Waterway Encroachment Act of 1978. Although wetlands are regulated by state and federal laws, municipalities should also address them on their ordinances. This approach permits a municipality the option of requiring wetland buffers or applying riparian buffers to wetlands.

Wetlands are one of nature's most productive ecosystems, and are often found within important headwater areas. They offer critical wildlife habitat and provide important storage areas for runoff while providing for the filtration of groundwater. From a regulatory standpoint, the presence of wetland areas is determined based on the site's soil, hydrology, and vegetation. Areas lacking any one of these three parameters are generally not considered wetlands. In general, any area with periodic standing water and wetland vegetation such as cattails, skunk cabbage, and black willow, is likely to be a wetland. However, only an on-site delineation by a qualified professional can identify the presence or absence of wetlands.

The blue text box below presents model standards for wetlands and wetland margin protection.

3.6 Wetland Protection Standards.

3.6.1 Wetland Definitions. Unless otherwise expressly stated, the following words and phrases shall, for the purposes of this and all other chapters of this ordinance, have the meaning presented below:

LAKES AND PONDS—(For definition see Article 2).

LAND DISTURBANCE—(For definition see Article 2).

WATERCOURSE—(For definition, see Article 2).

WETLAND—Those areas (including swamps, marshes, and bogs) that are inundated and saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands include all lands regulated as wetlands by the Pennsylvania Department of Environmental Protection or the U.S. Army Corps of Engineers. In the event there is a conflict between the definitions or regulations of these agencies, the more restrictive definition shall apply.

WETLAND DELINEATION REPORT—A document that describes the investigation procedures and findings of a wetland delineation.

3.6.2 Coordination with State and Federal Agencies. Any applicant proposing a use, activity, or improvement which would entail the regrading or placement of fill in wetlands shall provide the Township with proof that the Pennsylvania Department of Environmental Protection (Bureau of Dams and Waterway Safety and Bureau of Water Quality Management) and the U.S. Army Corps of Engineers have been contacted to determine the applicability of state and federal wetland regulations. Any applicant who is contacted by the Pennsylvania Department of Environmental Protection or the U.S. Army Corps of Engineers shall provide to the Township a copy of such correspondence within five (5) working days of receipt.

3.6.3 Wetland Disturbance. Wetlands shall not be regraded, filled, piped, diverted, channeled, built upon, or otherwise altered or disturbed except where state or federal permits have been obtained.

3.6.4 Lake and Ponds. Wetland protection standards shall apply to lakes and ponds.

3.6.5 The Delineation of Wetlands. The applicant shall provide to the Township a wetlands delineation report (or a letter verifying that no wetlands are presented based on a field view) that that meets the following requirements:

- a. The report shall be conducted by a qualified wetland biologist, soil scientist, or an environmental professional with demonstrated qualifications, who shall certify that the methods used adhere to the currently accepted technical concepts, including identification and analysis of wetland vegetation, hydric soils, and hydrologic indicators. Methods used in the report shall be acceptable to the municipal engineer or other qualified consultant hired by the Township.
- b. The report shall include a determination of whether wetlands are present on the site and a full delineation, area measurement (in square feet), and description of any wetlands determined to be present. If there is a question as to the accuracy of the wetland delineation report, the Township may hire a qualified consultant to review the delineation and recommend revisions at the applicant's expense.
- c. If no wetlands are found on the site, a note shall be added to the preliminary and final plans stating that "This site has been examined by (name and address with a statement of submitted qualifications), and no wetlands as defined by the U.S. Army Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1, January 1987, were found to exist."

3.7 Wetland Margin Protection Standards.

3.7.1 Wetland Margin Definitions. Unless otherwise expressly stated, the following words and phrases shall, for the purposes of this and all other chapters of this ordinance, have the meaning presented below:

LAKES AND PONDS—(For definition see Article 2).

LAKE AND POND SHORELINES—(For definition see Article 2).

WATERCOURSE—(For definition see Article 2).

WETLAND—(For definition see Section 3.6.1).

WETLAND DELINEATION REPORT—(For definition see Section 3.6.1).

WETLAND MARGIN—The transitional area extending a specified distance from the outer limit of the wetland which serves as a buffer to protect the wetland from more intensive land uses.

3.7.2 Width of the Wetland Margin. The wetland margin shall extend a minimum of fifty (50) feet from the outer limits of the wetland boundary.

3.7.3 Wetland Margin Disturbance. With the exception of those uses or activities listed below, no more than twenty (20) percent of a wetland margin shall be altered, regraded, filled, built upon, or otherwise altered or disturbed.

- a. Regulated activities permitted by the Commonwealth, Army Corps of Engineers, or other Federal agency (such as a permitted stream or wetland crossing);
- b. Provision for unpaved trail and trail access;
- c. Selective removal of hazardous or invasive alien vegetative species;
- d. Vegetation management in accordance with an approved landscape plan or open space management plan;
- e. A soil conservation project approved by the Chester County Conservation District; or,
- f. Removal of hazardous material or septic system, junk material, or a diseased tree.

3.7.4 Lake and Pond Shorelines. Wetland margin protection standards shall apply to lake and pond shorelines.

3.7.5 State Regulations. All Department of Environmental Protection’s regulations under Chapter 105 concerning activities in wetlands margins shall be met.



Swimming near Barneston Dam



Snowdrops, photo by Chuck Bowers

Section 4.0: Application of Natural Resource Protection Standards

NRP standards should conclude with section that details what sort of information must be presented when land owners or developers submit plans the Township to alter their property. This section is helpful to land owners and developers because it provides them with essential information about the process they must follow to be consistent with municipal land use ordinances.

The text box below presents model language for the application of Natural Resource Protection Standards.

SECTION 4.0 APPLICATION OF NATURAL RESOURCE PROTECTION STANDARDS.

4.1 Plan Information. To ensure compliance with the natural resource protection standards of Section 3.0 of this Article, the following information shall be provided with the submittal of applications or plans listed under Section 2.1, when land disturbance is contemplated. In those cases where a limited portion of the site will be subject to disturbance, the zoning officer may determine the area of land to be shown on the submitted plan along with the information that will adequately demonstrate compliance with the natural resource protection standards of this Article.

- 4.1.1** A site analysis plan as required by Section ____ “Site Analysis Plan” of the Subdivision, Development and Land Use Ordinance (SLDO) including all encroachments and disturbances necessary to establish the proposed use of the site.
- 4.1.2** Any additional documentation as may be required by Section 3.0 to ensure compliance with the stated resource protection standards.
- 4.1.3** The table in Figure 4.1 below shall be used to determine the area of a site with natural resources that would be disturbed or encroached upon, and shall be required with the submittal of applications or plans listed under Section 2.1. The figures within Column D (Proposed Disturbance) shall be less than or equal to the corresponding figures within Column C (Maximum Disturbance Allowance).



Chadds Ford Days, photo by Sheila Fleming

Figure 4.1: Blank Maximum Disturbance Table

PROTECTED RESOURCE (Where resources overlap, the <i>overlapping area</i> shall be included in the more restrictive resource category.)	A Maximum Disturbance Allowance	B Area of Land in Protected Resources (in acres)	C Maximum Area of Permitted Disturbance (A. Disturbance Allowance x B. Area)	D Proposed Area of Disturbance (D must be not more than C)
Floodplains/Flood Hazard District	0%	*	*	*
Steep slopes (15 to 25%)	30%	*	*	*
Very steep slopes (> 25%)	15%	*	*	*
Riparian Buffer Zone One	0%	*	*	*
Riparian Buffer Zone Two	20%	*	*	*
Woodlands (Residential)	35%	*	*	*
Woodlands (Non-residential)	50%	*	*	*
Watercourses or streams	0%	*	*	*
Wetlands	0%	*	*	*
Wetlands Margin	20%	*	*	*
TOTAL	N/A	*	*	*

**These cells need to be filled in by the applicant.*

Example of a Filled-in Maximum Disturbance Table. The table below is an example of how the Maximum Disturbance Table would be filled in for a proposed subdivision of a theoretical 100-acre tract with 67 acres of constrained lands. Column C shows the maximum area of disturbance permitted within each resource. Column D shows the actual area of each resource to be disturbed under the proposed development. All numbers in Column D must be equal to or less than the corresponding number in Column C.

Example Maximum Disturbance Table

PROTECTED RESOURCE (Where resources overlap, the <i>overlapping area</i> shall be included in the more restrictive resource category.)	A Maximum Disturbance Allowance	B Area of Land in Protected Resources (in acres)	C Maximum Area of Permitted Disturbance (A. Disturbance Allowance x B. Area)	D Proposed Area of Disturbance (D must be not more than C)
Floodplains/Flood Hazard District	0%	5	0	0
Steep slopes (15 to 25%)	30%	8	2.4	1.2
Very steep slopes (> 25%)	15%	12	1.8	1
Riparian Buffer Zone One	0%	3	0	0
Riparian Buffer Zone Two	20%	7	1.4	0.5
Woodlands (Residential)	35%	20	7	5
Woodlands (Non-residential)	50%	0	0	0
Watercourses or streams	0%	2	0	0
Wetlands	0%	6	0	0
Wetlands Margin	20%	4	0.8	0
TOTAL	N/A	67	19.8	7.7

4.2 Minimum Buildable Area for Lots within Subdivisions.

- 4.2.1 At the time of any Subdivision or Land Development application, a minimum buildable area shall be identified on each lot to ensure sufficient area is provided for the general location of the building, driveway, patio, other improvements and site alterations while meeting the natural resource protection standards and minimum setback requirements of this Article.
- 4.2.2 Within any proposed subdivision, all single-family detached residential lots shall have a contiguous minimum buildable area as indicated in Figure 4.2, except for mobile home parks and subdivisions utilizing the open space or lot averaging design options of Article ____ “Open Space /Cluster Provisions,” if applicable.

Figure 4.2: Minimum Building Areas
 (NOTE: THIS TABLE WILL HAVE TO BE MODIFIED FOR EACH MUNICIPALITY)

Zoning District	Minimum Lot Size	Minimum Contiguous Buildable Area
R-1	4.0 acres	9,000 sq. ft.
R-2	2.5 acres	8,000 sq. ft.
R-3	1.0 acres	5,000 sq. ft.
R-4	1 ac. (on-lot sewer/water); 20,000 sq. ft. (public sewer/water)	3,500 sq. ft.
R-5	1 ac. (on-lot sewer/water); 17,500 sq. ft. (public sewer/water)	3,000 sq. ft.
VR (Village Residential)	1 ac. (on-lot sewer/water); 17,500 sq. ft. (public sewer/water)	2,500 sq. ft.

- 4.2.3 Where the option of lot averaging is chosen, all lots which are less than or equal to one (1) acre in size shall have a contiguous minimum buildable area of at least twenty (20) percent of the lot area. All lots which are greater than one (1) acre in size shall have a contiguous buildable area of at least ten (10) percent of the lot area.

4.3 On-Lot Sewage Systems. For proposed subdivisions with individual on-lot sewage systems, a 2,000 square foot or larger area, in addition to the minimum buildable area specified in Figure 4.2, shall be identified for the location of the sewage system. This area shall have an approved percolation test from the Chester County Health Department. Where applicable, a reserve or replacement area of two-thousand (2,000) square feet shall also be identified. Such area(s) shall not include:

- 4.3.1. Natural features protected by a one-hundred (100) percent protection standard.
- 4.3.2. The portion of those natural features that may not be developed or intruded upon as specified in Figure 4.1.

4.4 Continued Protection of Identified Natural Resources. To ensure the continued protection of identified natural resources, the following requirements shall apply:

4.4.1 Protected Resource Areas Held in Common or in Designated Open Space. For natural resources protection areas held in common, or otherwise in designated protected open space, the provisions of Article ____ “Open Space /Cluster Provisions,” shall apply. Furthermore, specific deed restrictions, or conservation easements satisfactory to the Township shall be placed on the natural area to be held in common. The party or organization responsible for the maintenance of the natural area shall be clearly identified in the deed. The conservation restrictions shall provide for the continuance of the resource protection areas in accordance with the provisions of this Article. In addition, conservation restrictions on protected areas shall be included in the development’s declaration of covenants, easements, restrictions, or similar documents regulating the use of property and setting forth methods for maintaining open space. A copy of such documents shall be provided to the Township.

4.4.2 Changes to Approved Plans. All applicable plans and deeds shall include the following wording: “Any structures, infrastructure, utilities, sewage disposal systems or other proposed land disturbance indicated on the approved final plan shall only occur at the locations shown on the plan. Changes to such locations shall be subjected to additional review and re-approval and shall be consistent with the natural resource protection standards of Article X of the NAME Township Zoning Ordinance.”

NOTES:

- **General Note: Modifying Minimum Buildable Area Standards**—The above standards are presented as a template for addressing minimum building areas under ideal conditions within a municipality. These model standards should be modified to reflect the conditions existing within a specific municipality.
- **General Note: Carbonate Geological Formations**—Some municipalities are underlain by sensitive carbonate geological formations that warrant protections standards. An example of such standard can be found in the Pennsbury Township Zoning Ordinances, Section 162-1505.
- **General Note: Protecting Resources with a Deed Restriction on Individual Lots where Disturbance is Proposed**—An additional section may be added after Section 4.2.2 requiring a rigorous form of protection of natural resources on individual lots. This section will require that, when a lot is proposed for disturbance or development, a restriction must be added to the deed of a property which will ensure that resources are both protected and maintained over the long term. This sort of protection is most appropriate for resources like floodplains and wetlands which are 100% protected by municipal regulations and that can only be disturbed after obtaining required federal and state permits. The text box below presents model standards for this option.

4.2. ___ Protected Resources on Individual Lots where Disturbance is Proposed

- a. For natural resource protection areas on individual lots where new disturbance is proposed, specific deed restrictions that meet Township specifications shall be placed in the deeds for each site or lot that has natural resources protection areas designated by this ordinance within its boundaries. Language in the individual deeds shall clearly state that the maintenance responsibility lies with the individual property owner and that the Township shall have the right to enter the property for the purpose of correcting violations, and that the Township may charge the homeowner for costs associated with bringing such violations into compliance. The restrictions shall provide for the continuance of the resource protection areas in accordance with the provisions of this Article.
- b. Other mechanisms for ensuring the continued protection of identified resources, such as conservation easements, may also be considered and used if approved by the Township.

Section 5.0: Optional Modification of Natural Resource Protection Standards

Natural resource protection standards placed in a zoning ordinance can include a section that enables applicants to seek limited relief from natural resource restrictions without having to seek a variance. The needed relief is in the form of a modification, which can be granted by a Zoning Hearing Board simultaneous with a special exception or variance request, or by the elected body (Board of Supervisors or City or Borough Council) during a conditional use or subdivision plan approval request. Land uses subject only to a zoning permit or building permit request would be eligible for a modification through submittal of a special exception request of the Zoning Hearing Board. Approvals of modifications should be limited to highly unique circumstances, such as when literal application of one or more ordinance standards may leave a landowner without a reasonable or economic use of his or her property. Modifications granted should permit the minimum relief necessary for the intended use.

The text box below presents model standards for this option.

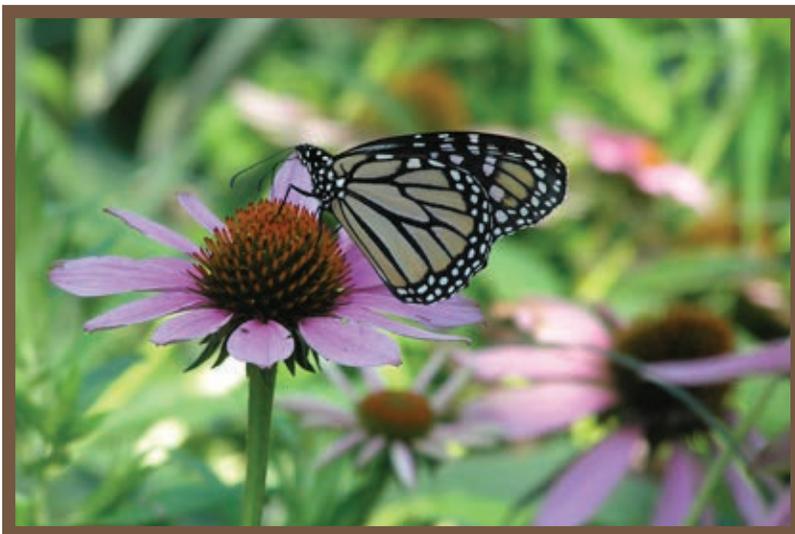
SECTION 5.0 MODIFICATION OF NATURAL RESOURCE PROTECTION STANDARDS

- 5.1 Requesting Modifications.** For any use or activity subject to Subdivision or Land Development review, as part of applicable Plan submission, modification(s) may be requested to the provisions of Sections ___ of this Article. Requested modification(s) may be granted at the discretion of the Board of Supervisors pursuant to the provisions of the Subdivision and Land Development Ordinance.
- 5.1.1** For any use or activity not subject to Subdivision or Land Development review, but subject to application for approval of a Conditional Use, Special Exception, or Zoning Variance under the provisions of this Ordinance, the applicant may request modification(s) to the provisions of Sections ____ of this Article.

- 5.1.2** For any use or activity not falling within the scope of subsection 5.1.1, the applicant may request modification(s) to the provisions of Sections ____ of this Article in the form of an application for grant of a Special Exception by the Zoning Hearing Board.
- 5.1.3** Applicants shall provide appropriate documentation in support of their modification request, and the Board of Supervisors or Zoning Hearing Board (as applicable) may request additional documentation of an applicant, or of its municipal consultants, to help reach its decision.
- 5.1.4** In consideration of approval of any applicant request for modification(s) under this Article, the following standards shall serve as the basis for a decision:
- a. That there are unique physical circumstances or conditions, including but not limited to irregularity, narrowness, or shallowness of lot size or shape, excessive frontage along a water body, presence of existing buildings or structures, or exceptional topographical or other physical conditions peculiar to the particular property. That because of such physical circumstances or conditions, it is impracticable for the property to be developed in strict conformity with the standards of this Article, and that the approval of the modification is therefore necessary to enable the reasonable use of the property under base zoning provisions.
 - b. That the modification, if approved, will result in the minimum reduction in performance of the natural feature, pursuant to the purposes set forth in Section ____, as needed to provide for the lawful intended use.

NOTES:

- **General Notes:** Modification applications can also be required to be submitted to the Planning Commission for review and comment prior to formal Special Exception application to the Zoning Hearing Board.



Monarch butterfly, photo by Brian Burns



Goats graze at Springton Manor Farm county park

5. Sources of Funding

Federal Programs

Federal programs are complex and generally require Metropolitan Planning Organization (MPO) support, such as the Delaware Valley Planning Commission (DVRPC). Contact DVRPC for more information and for grant application guidance.

NATIONAL HIGHWAY PERFORMANCE PROGRAM (NHPP)

<http://www.fhwa.dot.gov/map21/guidance/guidenhpp.cfm>

Who is eligible to apply?

States and MPOs.

What types of projects are funded?

Projects must be part of the National Highway System and be on the Transportation Improvement Program (TIP) of our local MPO, the Delaware Valley Regional Planning Commission.

CONGESTION MITIGATION AND AIR QUALITY (CMAQ)

<http://www.fhwa.dot.gov/map21/guidance/guidecmaq.cfm>

Who is eligible to apply?

States and MPOs.

What types of projects are funded?

Projects must be part of the MPO's transportation plan and be on the TIP. Specific project types such as: non-recreational bicycle transportation and pedestrian improvements that provide a reduction in single-occupant vehicle travel.

SURFACE TRANSPORTATION PROGRAM (STP)

<http://www.fhwa.dot.gov/map21/guidance/guidestp.cfm>

Who is eligible to apply?

States and MPOs.

What types of projects are funded?

- Environmental Restoration and Pollution Abatement in accordance with Title 23 of the United States Code § 328.
- Control of noxious weeds and aquatic noxious weeds and establishment of native species in accordance with 23 U.S.C. 329.
- Recreational trails projects eligible for funding under 23 U.S.C. 206. Not subject to Location of Project requirement in section 133(c).

TRANSPORTATION ALTERNATIVES PROGRAM (TAP)

<http://www.fhwa.dot.gov/map21/guidance/guidetap.cfm>

Who is eligible to apply?

States and MPOs.

What types of projects are funded?

The TAP provides funding for programs and projects defined as transportation alternatives, including on- and off-road pedestrian and bicycle facilities, infrastructure projects for improving non-driver access to public transportation and enhanced mobility, community improvement activities, and environmental mitigation; recreational trail program projects; safe routes to school projects; and projects for planning, designing, or constructing boulevards and other roadways largely in the right-of-way of former Interstate System routes or other divided highways.

State Programs

The Pennsylvania Growing Greener Coalition's *Guide to Finding the Green* was first published in March 2014 and is available online at <http://pagrowinggreener.org/wp-content/uploads/2014/03/Finding-the-Green-LR.pdf>. Its current version is included in the Appendix. The Guide contains a thorough listing of state funding programs for conservation, preservation and recreation projects, including the more recent funding made available from Act 13 of 2012. In addition to a list of specific grant opportunities, you'll find tips on how to apply and where to go for more information.

The following are two examples of successful state programs in this region that are also described in the *Guide to Finding the Green*.

COMMUNITY RECREATION AND CONSERVATION PROGRAM—COMMUNITY CONSERVATION PARTNERSHIP PROGRAM (C2P2)

<http://www.dcnr.state.pa.us/brc/grants/c2p2programguidance/index.htm>

Who is eligible to apply?

Municipalities; COGs; Conservation Districts; land trusts; school districts; colleges and universities; non-profit organizations working on rivers, conservation, trails, etc.; for profit entities; housing and redevelopment authorities; and designated heritage areas.

What types of projects are funded?

Development, land acquisition, planning, partnerships, and trail maintenance.

Is there a maximum amount?

The maximum amount varies by project type.

Is a match required?

Match amount varies between 10 and 50%, depending on project type and ultimate funding source.

How to apply

Through the DCNR website: <http://www.dcnr.state.pa.us/brc/grants/c2p2programguidance/index.htm>

When is the application period?

The current cycle's deadline is April 16, 2014.

ACT 13 (MARCELLUS SHALE IMPACT FEE)—GREENWAYS, TRAILS, AND RECREATION PROGRAM (GTRP)

<http://www.newpa.com/find-and-apply-for-funding/funding-and-program-finder/greenways-trails-and-recreation-program-gtrp>

Act 13 of 2012 establishes the Marcellus Legacy Fund and allocates funds to the Commonwealth Financing Authority for planning, acquisition, development, rehabilitation and repair of greenways, recreational trails, open space, parks and beautification projects using the Greenways, Trails and Recreation Program (GTRP).

Who is eligible to apply?

Municipalities, Councils of Governments, authorized organizations, colleges and universities, watershed organizations, and for-profit businesses.

What types of projects are funded?

Projects which involve development, rehabilitation and improvements to public parks, recreation areas, greenways, trails and river conservation.

Is there a maximum amount?

Grants shall be awarded to eligible applicants for projects that do not exceed \$250,000.

Is a match required?

A 15% local match of the total project cost is required.

How to apply

Using DCED's Single Application for Assistance: <http://www.newpa.com/find-and-apply-for-funding/apply-for-programs-funding>

When is the application period?

The most recent application deadline was July 21, 2014.

Regional Programs

DELAWARE VALLEY REGIONAL PLANNING COMMISSION (DVRPC)—TRANSPORTATION AND COMMUNITY DEVELOPMENT INITIATIVE (TCDI)***Who is eligible to apply?***

TCDI grants are available to all municipal and county governments within the DVRPC region. TCDI applications must be made by the local government or county.

What types of projects are funded?

TCDI grants support planning, ordinances, design, preliminary engineering, market analyses, feasibility studies or capacity building activities that lead to public or private sector investment for smart growth. TCDI is an opportunity to undertake the preliminary planning or analyses needed to support specific transportation system improvements or enhancements, new ordinance language, and/or new or different programmatic efforts that will spur local revitalization and smart development.

Is there a maximum amount?

Municipalities may apply for a maximum of \$100,000 in TCDI funds for any single project. County governments may also apply for individual projects or on behalf of several communities in the case of a multi-municipal effort. Projects involving two or more municipalities may apply for a maximum of \$175,000 in TCDI funds.

Is a match required?

20% (of total project cost) in-kind, cash or some combination

How to apply

Visit this page for guidance: <http://www.dvrpc.org/TCDI/>

When is the application period?

Applications and attachments electronically due to DVRPC in May of each calendar year.

CHESTER COUNTY DEPARTMENT OF OPEN SPACE PRESERVATION—MUNICIPAL GRANTS PROGRAM***Who is eligible to apply?***

All 73 municipalities in Chester County.

What types of projects are funded?

- Acquisition Grants reimburse a maximum of 50% of the approved cost to buy land, conservation or trail easements. In the event that an extraordinary conservation opportunity presents itself, the County will consider requests in excess of \$500,000 on a case-by-case basis for acquisition grants. Requests for grants of \$500,000 or more must provide a compelling justification for the request, along with a map and brief property description; an outline of the proposed project; and an extensive discussion of the public benefit.
- Development Grants reimburse park facility and trail construction up to a maximum of 50% of a project's cost to a maximum of \$250,000 if outlined criteria are met (see Project Finances in Section II-before completing application). Maximum cumulative County construction funds for any one facility over the life of the facility are \$250,000, for parks less than 20 acres. Projects to develop parks that do not preserve land may not be funded.

Is a match required?

Generally 50%.

How to apply

Visit this page for guidance: <http://www.chesco.org/index.aspx?NID=1505>

When is the application period?

The most recent application deadline was February 28, 2014.

CHESTER COUNTY AGRICULTURAL PRESERVATION PROGRAM

<http://www.chesco.org/index.aspx?NID=1368>

Who is eligible to apply?

Landowners.

What types of projects are funded?

Easements on high-quality farmland located in an Agricultural Security Area at least 50 acres in size, or 10 acres in size and adjacent to a preserved property; have at least 50% of the soils that are available for agricultural production and are of capability classes I-IV; contain the greater of 50% or 10 acres of harvested cropland, pasture, or grazing land.

Is there a maximum amount?

The funding limit is \$12,000 per acre.

Is a match required?

There is a local match minimum of 50%.

How to apply

Information on applying to sell an agricultural conservation easement can be obtained by contacting the office via phone, email, regular mail, or by visiting.

When is the application period?

Applications usually must be received by August 1st of each year. Check the website for updates.

CHESTER COUNTY VISION PARTNERSHIP PROGRAM

<http://pa-chestercounty.civicplus.com/DocumentCenter/View/15085>

The Vision Partnership Program is a planning grant available to local municipalities and multi-municipal regions seeking to improve their planning programs and achieve consistency with the goals, objectives, and policies of Landscapes2.

Who is eligible to apply?

The VPP grant is open to all Chester County municipalities. Eligible applicants include a single municipality, a group of two (2) or more contiguous municipalities, or a group of two (2) or more municipalities when located in the same school district. The application shall be submitted by a municipality or a designated lead municipality in the case of a multi-municipal application.

What types of projects are funded?

- Revisions to municipal plans, ordinances, and planning studies to achieve consistency with the principles of Landscapes2 and the County's Strategic Plan
- Innovative municipal planning to effectively manage growth in a manner consistent with Landscapes2
- Multi-municipal planning efforts that effectively address planning issues facing Chester County municipalities
- The use of professional planning expertise to address growth management and other planning issues at the municipal and multi-municipal level
- Funding to supplement the Chester County Planning Commission staff's ability to directly assist municipalities in the implementation of Landscapes2.

Is there a maximum amount?

Up to \$50,000 for comprehensive plans, revitalization plans, open space plans, and ordinances which are adopted under the provisions of the MPC.

Is a match required?

There is a local match minimum of 25%.

How to apply

Information on applying to sell an agricultural conservation easement can be obtained by contacting the Chester County Planning Commission via phone, email, regular mail, or by visiting.

When is the application period?

Application period is open.

Private Foundation Programs

WILLIAM PENN FOUNDATION

Who is eligible to apply?

Non-profit organizations. Governments are not generally funded, except in certain cases where there is no suitable tax-exempt organization to carry out a program or project.

What types of projects are funded?

- These grants are usually large scale and multi-year initiatives.
- The geographic area of focus may vary with each grant round. The most recent area of focus included the Brandywine Watershed.
- Develop and implement conservation and restoration models.
- Provide capital for land acquisition to promote conservation and protect water quality.
- Provide capital for stream restoration to restore water quality.
- Secure funds to complete “The Circuit,” Greater Philadelphia’s regional trail network.

CHESTER COUNTY COMMUNITY FOUNDATION

<http://www.chescocf.org/grants/grants%20home.htm>

Who is eligible to apply?

Non-profits in Chester County.

What types of projects are funded?

- Program and operating funds.
- Capital and endowment campaigns.
- Capacity-building proposals.

Is there a maximum amount?

Grant awards typically range from \$500–\$7,500.

Is a match required?

No.

How to apply

Read the guidelines and complete the application available here: <http://www.chescocf.org/grants/grants%20home.htm>

When is the application period?

Proposals may be submitted any time throughout the year.

GEORGE AND MIRIAM MARTIN FOUNDATION

The focus of this foundation is river and watershed conservation. Visit <http://themartinfoundation.org/>

Who is eligible to apply?

Non-profits in Chester County.

What types of projects are funded?

There are no formal grant guidelines.

Is there a maximum amount?

Grant awards typically range from \$1,000–\$150,000.

Is a match required?

No.

How to apply

If you are interested in a grant, please send a brief letter describing how a grant will help your organization preserve streams and wetlands.

When is the application period?

There are no deadlines.

Corporate Programs

PECO GREEN REGION GRANT

<http://www.natlands.org/services/for-municipalities/peco-green-region-program/>

Who is eligible to apply?

Any municipality within PECO's five-county service territory, including those in Chester County.

What types of projects are funded?

Developing or updating open space plans; improving municipal, organization, or authority-owned open spaces, including planning costs; acquisition of parcels to be used for open space; and acquisition of conservation easements.

Is there a maximum amount?

\$10,000.

Is a match required?

50% match.

How to apply

Visit the website for more details: <http://www.natlands.org/services/for-municipalities/peco-green-region-program/>

When is the application period?

The latest deadline was December 31, 2013.

6. APPENDIX:

Model Riparian Buffer Protection Overlay District

Proposed Regulations For Use In A Municipal Zoning Ordinance

Brandywine Conservancy and Pennsylvania Land Trust Association
Edition of April 25, 2014

Section 100. Purpose and Intent. The specific purposes and intent of this article are to:

- A. Conserve, protect, and restore natural riparian resources through scientifically supported processes.
- B. Maintain and improve surface water quality by reducing the entry of detrimental substances, including nutrients, sediment, organic matter, pesticides, and other harmful substances that reach watercourses, wetlands, and surface and subsurface water bodies.
- C. Reduce the entry of detrimental substances by restricting development and uses in riparian areas that intercept surface water runoff, wastewater, subsurface flow and deep groundwater flows from upland sources and where the processes of filtration, deposition, absorption, adsorption, plant uptake, sediment and phosphorus attenuation, denitrification and infiltration may occur; encouraging sheet flow and minimizing, mitigating and preventing concentrated flows of storm water runoff across riparian areas, and securing increased channel and bank stabilization that avoids stream bank erosion and associated water quality, quantity and flow harms.
- D. Attenuate flooding and reduce soil loss.
- E. Reduce adverse aquatic health impacts due to changes in the temperature of receiving waters (both temperature increases and temperature decreases) as a result of storm water runoff, loss of vegetative shading and direct discharges to water bodies.
- F. Enhance in-stream processing of nutrients and pollutants such as pesticides and reduce the downstream movement of pollutants.
- G. Improve and maintain the safety, reliability and adequacy of the water supply for domestic, agricultural, commercial, industrial and recreational uses along with sustaining diverse populations of aquatic flora and fauna.
- H. Provide wildlife habitat, protect native plant species, and provide opportunities for passive recreation.
- I. Conserve headwater areas, groundwater recharge zones, floodway, floodplain, springs, seeps, streams, wetlands, woodlands, prime wildlife habitats and other features that provide recreational value or contain natural amenities, whether on developed or undeveloped land.
- J. Integrate with floodplain, steep slope, woodland protection and other ordinance requirements contained herein that regulate environmentally sensitive areas to minimize hazards to life, property and riparian features.
- K. Conserve scenic and recreation areas within and adjacent to riparian areas.
- L. Protect the watercourses and wetlands otherwise not regulated or superseded by Section 102 of the Pennsylvania State Code.
- M. Regulate the use, siting, engineering and maintenance of all development to be consistent with the purposes and intent of this article and accepted conservation practices and to work with the carrying capacity of existing natural resources.
- N. (When applicable) Further the Chesapeake Bay Tributary Strategy goals and objectives by implementing best management practices (BMPs) to address point and non-point pollution sources.

Section 200. Definitions. *(In addition to other definitions typically found within the zoning ordinance)*

APPLICANT—a landowner or developer who has filed an application for subdivision or land development or for any zoning or building permit that will result in land disturbance, including his heirs, successors and assigns or the equitable owner of property with the owner’s permission. Applicants must either be the legal or beneficial owner or owners of land subject to the application, including the holder of an option or contract to purchase (whether or not such option or contract is subject to any condition), a lessee if he is authorized under the lease to exercise the rights of the landowner, or other person having a proprietary interest in land.

BANKFULL FLOW OR LEVEL—The discharge that just fills the water channel to the top of its banks and at a point where the water begins to overflow onto a floodplain.

BEST MANAGEMENT PRACTICE (BMP)— A structural or non-structural device designed to temporarily store or treat stormwater runoff in order to mitigate flooding and pollution, and reduce soil loss and water quality degradation caused by runoff containing nutrients, animal wastes, toxins, and sediments.

FORESTED RIPARIAN BUFFER—A riparian buffer that consists predominantly of native trees, shrubs and/or herbaceous plants that provide a minimum of sixty (60) percent uniform canopy coverage.

IMPACTED RIPARIAN BUFFER—A riparian buffer that, as a result of land use or land development activity, contains impervious cover or landscape use or management activity such that it no longer meets the definition of “forested riparian buffer”.

IMPERVIOUS COVER—Those surfaces that do not readily absorb precipitation and surface water. The term includes but is not limited to buildings, parking areas, driveways, roads, sidewalks, swimming pools, and any areas in concrete, asphalt, packed stone, or other equivalent surfaces, including those with a coefficient of runoff of 0.7 or higher. Impervious surfaces also include disturbed soils with a bulk density of ninety-five (95) percent of the value at which plant growth limitation is expected for average plant material.

LAND DISTURBANCE—Any activity that exposes soils, alters topography, and/or alters vegetation.

NORMAL POOL ELEVATION—

- A. For water bodies which have no structural measures to regulate the height of water, the height of water at ordinary stages of low water unaffected by drought.
- B. For structurally regulated water bodies, the elevation of the spillway, outlet control, or dam crest which maintains the water body at a specified height.
- C. The term does not apply to wetlands.

RIPARIAN—Belonging or related to the bank of a water body, river, stream, wetland, lake, pond, or impoundment.

RIPARIAN BUFFER—A vegetated area, including trees, shrubs, and herbaceous vegetation, adjacent to a water body .

TOP OF BANK—The elevation at which rising waters begin to inundate the floodplain. In case of ambiguous, indefinite, or non-existent floodplain or question regarding the location, the Top of Bank shall be the bankfull water elevation as delineated by a person trained in fluvial geomorphology and utilizing the most recent edition of Applied River Morphology by Dave Rosgen, or comparable reference book. “Top of Bank” shall be synonymous with “edge of water.”

WATER BODY—Any natural or manmade pond, lake, wetland, impoundment, or watercourse. This shall not include any pond or facility designed and constructed solely to contain stormwater, or a swimming pool.

WATERCOURSE— Any channel of conveyance of surface water having a defined bed and banks, such as a stream, river, brook, or creek, whether natural or artificial, with perennial, intermittent or seasonal flow. This shall not include any channel or ditch designed and constructed solely to carry stormwater.

WETLAND OR WETLANDS—Those areas inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances, do support, a prevalence of vegetation typically adapted for life in saturated soil conditions, including swamps, marshes, bogs, ponds, lakes, and similar areas. Wetlands shall include any area so delineated by the National Wetlands Inventory of the U.S. Fish and Wildlife Service and all lands regulated as wetlands by the Pennsylvania Department of Environmental Protection (PADEP) or the U.S. Army Corps of Engineers (ACE). In the event there is a conflict between the definitions of these agencies, the more restrictive definition that defines the wetlands most expansively shall apply.

Section 300. Applicability.

- A. The provisions of this article shall apply to any water body as defined herein, except as further clarified in subsection D. below.
- B. The provisions of this article shall apply in accordance with subsection A. above where any application for special exception, conditional use, variance, subdivision, land development, or building or zoning permit is required, or when a violation of the provisions of this article require an enforcement action.
- C. The provisions of this article shall not apply to the footprints of existing primary and accessory uses, including but not limited to all agricultural uses and research related thereto, buildings, transportation facilities, fences, lawns, gardens, utility lines, roads, driveways, sidewalks, bikeways, decks, piers, water, septic and sewage supply facilities and their related appurtenances (well houses, utility pump and lift stations, manholes, etc.).
- D. For lands lying within a PADEP-designated Special Protection Watershed, the riparian buffer requirements of Section 102.14 of Chapter 102 (Erosion and Sedimentation Pollution Control Rules and Regulations) of the Commonwealth of Pennsylvania, shall apply when more restrictive than the regulations provided herein. Pursuant to Section 102.14, earth disturbance activities subject to post-construction stormwater management (PCSM) permits cannot be located within one hundred fifty (150) feet of a watercourse in an exceptional value (EV) or high quality (HQ) watershed. At the time of plan and/or permit approval under this Zoning Ordinance, applicants are responsible for demonstrating compliance with Section 102.14 of Chapter 102, when applicable, including providing copies of all related correspondence and relevant PADEP approvals to the Zoning Officer.

Section 400. Riparian Buffer Delineation. The riparian buffer area shall extend a minimum total width of one hundred (100) feet from the edge of a water body, or shall equal the extent of the 100-year floodplain, whichever is greater.

- A. The riparian buffer area will consist of two distinct zones designated as:
 1. Zone One: Zone One begins at each edge of a water body and shall extend landward a minimum width of fifty (50) feet, measured horizontally on a line perpendicular to the nearest edge of the water body, as reviewed and approved by the municipal engineer.
 - a. Where steep slopes (15% to 25% or more) are located within fifty (50) feet of the edge of a water body, Zone One shall extend the entire distance of this steep sloped area, including any steep sloped area that begins within fifty (50) feet and extends beyond one hundred (100) feet. If the sloped area extends beyond one hundred (100) feet, there will be no requirement for the establishment of Zone Two. If the distance is less than one hundred (100) feet, but greater than fifty (50) feet, the width of Zone Two will be adjusted so that the total riparian buffer width (Zone One and Zone Two) is one hundred (100) feet.

2. Zone Two: Zone Two begins at the outer edge and on each side of any area delineated within Zone One and extends further landward to a minimum total width of one hundred (100) feet including Zone One, and where the floodplain extends greater than one hundred (100) feet from the water body, shall extend to the outer edge of the defined 100-year floodplain.
- B. Isolated wetlands and water bodies. Wetlands and water bodies not located along a watercourse, where the wetland or water body is greater than 5,000 square feet in area, shall have a minimum buffer width consistent with Zone One, as defined above, from the edge of the wetland or water body around the entire perimeter.
- C. Buffer increase for impaired water bodies. In the case of a water body that has been listed by PADEP as impaired (see PADEP’s “Integrated Water Quality Report, 2012”, or if applicable, a later revision thereof, for a listing of impaired water bodies), Zone Two begins at the outer edge of any area delineated within Zone One and extends further landward to a minimum total width of a one hundred fifty (150) feet including Zone One.
- D. Applicant to initially delineate. The applicant shall delineate, for the property as a whole, any riparian buffer areas as specified in subsections 400.A through 400.C above on any plan that is submitted for the following approvals:
1. Conditional use, special exception, or variance.
 2. Subdivision or land development.
 3. Any other improvements that require a zoning or building permit for the activities within the Riparian Buffer Overlay Zoning District.

Section 500. Uses Permitted.

- A. The following uses or activities are permitted by right in Zone One:
1. Wildlife sanctuaries, nature preserves, forest preserves, fishing areas, passive areas of public and private parklands.
 2. Temporary stream restoration projects, stream bank restoration projects and vegetation restoration projects to restore the stream or riparian zone to an ecologically healthy stage utilizing natural channel design practices to the greatest degree possible. The project duration and timing shall be subject to Zoning Officer approval.
 3. Stream crossings for farm vehicles and/or livestock if part of a federal, state, and/or county conservation district and/or local nonprofit riparian buffer improvement project.
 4. Provision for stone-dust or natural trail and related trail access when determined by the Zoning Officer to result in minimum disturbance to existing trees and shrubs.
 5. Research and monitoring devices, such as staff gages, water recording, water quality testing, cross vanes, weirs and related demonstration facilities.
- B. The following uses or activities are permitted by right in Zone Two:
1. Uses or activities permitted in Zone One.
 2. Timber harvesting operations, when conducted in compliance with a timber harvesting plan prepared, submitted, and approved in accordance with Section ____ of the Zoning Ordinance. Clear-cutting of timber, or high-grading of forests, as defined therein, shall not be permitted within the regulated riparian buffer.
 3. Any other use or activity permitted in the underlying (base) district, provided that:

- a. no more than twenty (20) percent of Zone Two shall be re-graded, filled, or otherwise altered or subject to land disturbance; and
 - b. with the exception of paved trails approved by the Zoning Officer, no new impervious surfaces shall be created as a result of any permitted uses or activities except as permitted in paragraph 500.D, below.
- C. The following uses or activities are permitted by Special Exception (*or Conditional Use, if so desired*) approval in Zone One:
1. Structures that, by their nature, cannot be located anywhere except within the riparian buffer. These structures shall include docks, boat launches, public water supply intake structures, facilities for natural water quality treatment and purification and public wastewater treatment plant sewer lines and outfalls. The structures shall provide for the minimum practicable disturbance of the riparian buffer by minimizing size and location and by taking advantage of collocation, if possible.
 2. Road crossings (when perpendicular to the stream or buffer), bridges, culverts, utilities, and impoundments.
 3. Provision for paved trail and related trail access when determined by the Zoning Hearing Board to result in minimum disturbance to existing trees and shrubs.
- D. The following uses or activities are permitted by Special Exception (*or Conditional Use, if so desired*) approval in Zone Two:
1. Uses permitted by Special Exception in Zone One.
 2. Stormwater conveyance structures and outfalls.
 3. The grazing of livestock or growing of agricultural crops provided existing forested riparian buffers in either zone are not removed or otherwise impacted.
 4. Any other use or activity permitted in the underlying (base) district, provided that no more than twenty (20) percent of Zone Two shall be regraded, filled, altered, subject to land disturbance, or covered with impervious surfaces.
- E. The following activities or practices are expressly prohibited in Zone One and Zone Two:
1. Removal or disturbance of vegetation in a manner that is inconsistent with erosion and sedimentation control and riparian buffer protection.
 2. Storage or discharge of any hazardous or noxious materials, except those used during emergencies for the treatment and/or maintenance of any public sewer and public water treatment facilities (i.e., generator sets or alternative drive units).
 3. Use of fertilizers, pesticides, herbicides, and/or other chemicals, except:
 - a. where permitted by a valid conservation plan, forest management plan, or approved planting and maintenance plan (see Section 600.E. below);
 - b. for selective herbicide application by a qualified professional to control noxious weeds and invasive species of plants in riparian buffers.
 4. Motor or wheeled vehicle traffic in any area not designed to accommodate adequately the type and volume of vehicular movement.

Section 600. Buffer Restoration and Planting Requirements.

- A. All riparian buffer areas shall be continually maintained with a dominant mix of native trees, shrubs, and/or herbaceous plants so as to constitute a forested riparian buffer where not otherwise occupied by any existing use excepted in accordance with Section 300.C., or any authorized use permitted in Section 500.
- B. Impacted riparian buffer areas shall be restored by an applicant to a forested riparian buffer, as a condition of approval of any final subdivision plan, final land development plan, or building or zoning permit approval, except as provided in subsection G., through invasive removal and planting of a diverse mix of native tree and shrub species as follows:
 1. For water bodies identified as impaired by PADEP, the applicant shall restore the first one hundred (100) feet of the impacted buffer area.
 2. For all other water bodies, the applicant shall only restore Zone One.
- C. Restoration of the impacted riparian buffer shall occur as follows:
 1. Zone 1. Undisturbed native trees must occupy Zone 1 in its entirety. Predominant vegetation must be composed of a variety of native tree species planted in accordance with subsection D. below.
 2. Zone 2. For restoration adjacent to impaired water bodies, in addition to the planting requirements for Zone 1, managed native trees and shrubs must occupy at least the first fifty (50) feet of Zone 2, beginning at the outer edge of Zone 1. Predominant vegetation must be composed of a variety of native riparian tree and shrub species planted in accordance with subsection D. below.
- D. Restoration plantings shall be planted at a density sufficient to provide three hundred (300) trees per acre at maturity. To achieve this density, no less than three hundred fifty (350) (@ approximately 10 x 10 feet spacing) trees per acre should be planted initially. The following guide is recommended for tree spacing and density based on plant size at installation:
 1. Seedlings—6-10 feet spacing (approx. 700 seedlings/acre)
 2. Bare root stock—14-16 feet spacing (approx. 200 plants/acre)
 3. Larger and container—16-18 feet spacing (approx. 150 plants/acre)Additional planting guidance may be obtained from PADEP's Bureau of Watershed Management Document Number 394-5600-001, entitled "Riparian Forest Buffer Guidance, November 27, 2010.
- E. Applicants shall submit, and as a condition of approval of any final subdivision plan, final land development plan, or permit, implement a planting and maintenance plan for the impacted riparian buffer. The plan shall be prepared by a registered landscape architect or professional plant ecologist. The plan shall identify the number, density and species of native trees and shrubs appropriate to the geographic location that will achieve a minimum of sixty (60) percent uniform canopy coverage and describe the maintenance program to be conducted by the buffer owner for a minimum of five (5) years, include measures to initially remove, and thereafter control, invasive species, control deer and rodent damage, and require replacement of deceased trees for a minimum of the first three (3) years.
- F. Any riparian buffer that is included within a lot created after the effective date of this ordinance shall include as a condition of approval of the subdivision creating the lot, a restrictive covenant approved by the municipal solicitor, and recorded with the final subdivision or land development plan and the deed for the lot. The restrictive covenant shall clearly define the riparian buffer area, shall include binding provisions for the adequate long-term functioning and integrity of the riparian buffer, and shall include a requirement for notification of all subsequent lot owners of its restrictive nature.
- G. Restoration to a forested riparian buffer shall not be required for issuance of a building permit for a single-family residence or addition thereto.

Section 700. Modifications to Riparian Buffer Standards.

- A. For any use or activity subject to Subdivision or Land Development review, as part of applicable Plan submission, modification(s) may be requested to the provisions of Sections 400 or 600 of this Article. Requested modification(s) may be granted at the discretion of the Board of Supervisors pursuant to the provisions of the Subdivision and Land Development Ordinance.
- B. For any use or activity not subject to Subdivision or Land Development review, but subject to application for approval of a Conditional Use, Special Exception, or Zoning Variance under the provisions of this Ordinance, the applicant may request modification(s) to the provisions of Sections 400 or 600 of this Article.
- C. For any use or activity not falling within the scope of subsections A or B, the applicant may request modification(s) to the provisions of Sections 400 or 600 of this Article in the form of an application for grant of a Special Exception by the Zoning Hearing Board. (Optional: Such applications shall be submitted to the Planning Commission for review and comment prior to formal Special Exception application to the Zoning Hearing Board.)
- D. Applicants shall provide appropriate documentation in support of their modification request, and the Board of Supervisors or Zoning Hearing Board (as applicable) may request additional documentation of an applicant, or of its municipal consultants, to help reach its decision.
- E. In consideration of approval of any applicant request for modification(s) under this Article, the following standards shall serve as the basis for a decision:
 - 1. That there are unique physical circumstances or conditions, including but not limited to irregularity, narrowness, or shallowness of lot size or shape, excessive frontage along a water body, presence of existing buildings or structures, or exceptional topographical or other physical conditions peculiar to the particular property. That because of such physical circumstances or conditions, it is impracticable for the property to be developed in strict conformity with the buffer requirements of this Article and that the approval of the modification is therefore necessary to enable the reasonable use of the property under base zoning provisions.
 - 2. That the modification, if approved, will result in the minimum reduction in performance of the riparian buffer, pursuant to the purposes set forth in Section 100, as needed to provide for the lawful intended use.
- F. No alteration of the Use Regulations set forth in Section 500 shall be authorized as modification pursuant to this Section 700. Any such requested alteration shall constitute an application for a variance, meeting all applicable requirements for same, to be submitted to the Zoning Hearing Board.

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