

Chapter 10

NATURAL RESOURCES RECOMMENDATIONS

NATURAL RESOURCES GOALS:

NRG1: *Protect, manage, and restore natural habitat and sensitive natural resources.*

NRG2: *Increase and expand urban green space and natural resource areas into a network that extends throughout the Borough and into its surrounding municipalities.*

Objectives:

NRO1: Updating Natural Resource Regulations and Ordinances. Revise the Borough's natural resource protection regulations and ordinances as necessary, based on the latest science and technological innovations.

NRO2: Pollution Control. Ensure that industrial operations are not polluting or otherwise degrading the environment, and encourage new industrial processes that minimize pollution and are environmentally sensitive.

NRO3: Minimizing Development Impacts. Promote development and redevelopment that is environmentally sensitive, and that improves, minimizes, or mitigates impacts to the environment.

NRO4: Urban Greening. Expand the "greening" of the Borough through the installation and maintenance of streets trees, ornamental beds, and other vegetated areas.

NRO5: Woodlands and Greenways. Protect, maintain, and enhance a network of woodlands, floodplains and other natural habitats, and promote the vegetation of steep slopes and riparian corridors.

NRO6: Protecting Water Quantity. Pursue opportunities to maintain the water balance through best management practices for groundwater withdrawal and recharge; stormwater runoff and wastewater discharge; and other watershed management techniques.

NRO7: Protecting Water Quality. Pursue opportunities to achieve clean, pollutant-free, surface water and ground water.

NRO8: Regional Resource Planning. Coordinate natural resource planning with surrounding municipalities and pursue regional natural resource protection and restoration initiatives including those that involve low-impact recreation and trails.

NRO9: Education and Outreach. Encourage environmental outreach and education by public and civic organizations, and promote increased volunteerism for natural resource protection, restoration, and maintenance.

NATURAL RESOURCES RECOMMENDATIONS

[PLANNING COMMITTEE NOTE: The following recommendations serve two key functions. First, to establish policies that can be used in interpreting or, if warranted, revising borough ordinances such as the zoning ordinance and the subdivision and land development ordinance. The second function is to provide policies which can be quoted in applications to state, federal, and private grant programs that fund natural resource improvement projects. In recent years, these grants have become a major funding source for municipally-initiated natural resource projects. If a project is formally supported in an adopted comprehensive plan, it is more likely to get funding.] **NOTE:** A synopsis of Borough ordinances is included at the end of the recommendations.

Geology, Soils and Steep Slopes Recommendations

The following recommendations are set forth as tools to limit the disturbance of geologic formations and soils in order to promote soil stability, and to prevent excessive soil erosion, sinkhole formation, and the degradation of groundwater, surface water, and stream valleys.

Recommendations regarding the protection of seasonal high water table soils, and low-lying hydric and alluvial soils are included under *Floodplain Recommendations*. Recommendations regarding the protection of soils from storm water erosion are presented under *Water Resources Recommendations*.

Geology, Soil, and Soils Erosion

NR-1 Consider the adoption of provisions to protect the Cockeyville Marble Formation. Such an effort might include adopting a zoning overlay district to address the impact of development on groundwater quality. Support studies and mapping efforts that focus on better understanding groundwater and geological features of the Cockeyville Marble Formation. [PLANNING COMMITTEE NOTE: The Borough has mining provisions in place]

NR-2 Promote best management practices (BMPs) to protect soil from erosion and reduce sedimentation into streams. Consider updating ordinances to reflect the latest advances in soil erosion and sedimentation BMPs. Support the use of BMP's during and after the construction phase. The Chester County Conservation District reviews any construction project that disturbs one acre or more of land. The Conservation District can also review municipal erosion and sedimentation standards to ensure they are in compliance with DEP regulations, and are appropriate for an urban setting.

Steep Slopes

NR-3 Continue to limit development on slopes of 15 percent or more, with no development permitted on slope in excess of 25 percent. Consider updating ordinances to clarify that steep slopes can be either natural or constructed. Consider updating ordinances to include erosion and sedimentation controls that minimize erosion on disturbed slopes.

NR-4 Protect, enhance, and restore wooded or vegetated steep slopes to protect soil stability and reduce flooding. Consider updating ordinances to limit the disturbance or clearing of vegetation on steep slopes to promote soil stability and prevent excessive soil erosion and stormwater runoff. Consider updating ordinances to include a more detailed discussion of what type of vegetation should be installed on steep slopes with a preference for trees and woody plants with strong roots. Support programs, such as those administered by the County Conservation Service, which serve to stabilize steep slopes in both new and existing developments, including re-vegetation.

Native Vegetation, Wetlands, and Wildlife Habitat Recommendations - The following recommendations are set forth as tools to promote native plants and natural diversity, and to protect, restore, and maintain areas that provide wildlife habitat. Such habitats may include stream valleys, steep slopes, floodplains, woodlands, wetlands, hedgerows, and sites that harbor unique ecosystems or threatened and endangered species.

Recommendations regarding public gardens, urban forestry, and street trees are presented under *Street Trees and Urban Greening Recommendations*.

Native Vegetation

NR-5 Promote sustainable plant communities and the restoration of vegetated areas dominated by non-native or invasive native species. Consider updating ordinances to:

- require the use of native plant species in natural settings

- promote, where practicable, the use of native plants in urban settings
- include listing of plants that are native
- include a listing of plants that are appropriate or adaptable to specific planting situations, such as plants well suited for a commercial main street or for underneath overhead lines
- include a listing of noxious or invasive plant to be prohibited

Support efforts and studies that focus on restoring sustainable native plant communities and managing or removing invasive or noxious plants. Invasive species should be managed and if possible, eradicated in forests, wooded lots, meadows, wetlands, steep slopes, floodplains, and riparian buffers. Native plants should be promoted in residential yards, nonresidential landscaped areas, and other graded areas such as such as railroad rights-of-way and storm water retention basins.

Wetlands

NR-6 Continue to protect, manage, and restore wetlands, and promote wetland hydrology and sustainable wetland plant communities. Consider updating ordinances to include a minimum 50-foot non-disturbance margin beyond the boundary of delineated wetlands and allow environmentally sensitive exceptions for the disturbance of the wetland margin. Such exceptions could include the removal of invasive plant species and regulated activities permitted by the Commonwealth. Consider updating ordinances to require that both wetlands and hydric soils be identified on tentative and preliminary sketch plans. Hydric soils are prone to support small wetlands that may not be included on readily available wetlands maps generated from aerial photography. Support efforts to restore wetlands and wetland hydrology; remove invasive plants from wetlands; and create wetlands in areas that have wet soils that are well suited to support wetland plants.

Forests and Wood Lots

NR-7 Protect, restore, expand, and manage forested areas and wood lots, especially on naturally sensitive areas. Consider updating ordinances to recognize forests as an environmentally sensitive feature which should not be disturbed, and should be replaced if disturbance is unavoidable. Consider expanding the definition of forest to include wooded riparian buffers, forested wetlands, and vegetated steep slopes. Support efforts to establish and maintain wooded greenways, steep slopes, public lands, and common open space within developments. Support efforts to reforest un-forested public and private lands that would better function for the community and the ecology if they were forested.

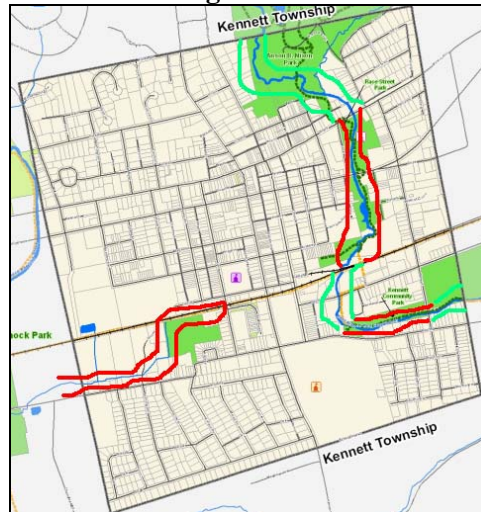
Riparian Buffers

NR-8 Encourage the restoration and maintenance of riparian buffers along streams, water bodies, and where appropriate, wetlands. Consider updating ordinances to include riparian buffer requirements. The scientific consensus indicates that a riparian should be a minimum of 100 feet wide to provide the ideal stream protection benefit. When there is insufficient land to accommodate such a buffer, a buffer with an average width of 50-feet is considered acceptable. Given that the Borough has limited open land, a buffer standard that is unique to the Borough should be considered. A minimum voluntary standard could be a 15-foot no mow/low mow zone and tree plantings along stream banks. The Borough should also participate in a unified regional approach to preserving and restoring riparian buffers in conjunction with the Brandywine Valley Association and the Red Clay Valley Association.

NR-9 Establish a borough-wide network of a riparian buffers extending out from the East Branch of the Red Clay Creek and the unnamed waterways in the vicinity of South Street and Grant Way. Consider updating ordinances to designate these stream corridors as environmentally

sensitive features that should not be disturbed, and at a minimum should be managed with a 15-foot no-mow/low-mow zone. Support the expansion of existing riparian buffers within Anson B. Nixon Park; to the east of the Kennett Community Pool; and in other areas designated in the figure below. Support the expansion of stream bank remediation and riparian buffers in commercial areas such as just west of the Kennett Community Park.

Figure 10-1



Green = buffer exists / Red = buffer needed

[**PLANNING COMMITTEE NOTE:** We will improve this map once we discuss this recommendation and complete the inventory.]

Street Trees and Urban Greening Recommendations - The following recommendations are set forth as tools to expand, restore, and maintain street trees, tree stands, public gardens, and other vegetated areas throughout the Borough to promote air quality, improve the economy, and maintain the small town quality-of-life.

NR-10 Promote the planting and maintenance of appropriate street trees and shade trees. Consider updating ordinances to include a section dedicated to street trees and shade trees, which could include a listing of tree species that are appropriate for different setting, such as main streets, wet areas, and within corridors with overhead or underground utilities. Consider expanding the Shade Tree Commission to cover street trees (if it does not already). Support efforts to promote urban forestry in residential, commercial and all other private and public developed settings, including parking lots and streets. See *Figure 10-A* at the end of this Chapter.

NR-11 Update tree planting and tree replacement standards to ensure the long-term survival of planted trees. Consider updating ordinances to establish one section dedicated to proper tree planting standards, which can then be referenced in other articles. Consider updating ordinances to include provisions for the replacement of street trees. Support efforts to improve the survival rate of tree saplings based on current silviculture practices made available from organizations such as the Chester County Conservation District.

NR-12 Educate and inform the public about the tree maintenance and selecting and planting the proper tree or vegetation for a given location. Such an effort can be implemented through the Borough Web site or through cooperation with other organizations. Proper tree selection can avoid damage to sidewalks of utility lines cause by planting fast or tall growing trees in areas with extensive infrastructure. A suggested plant list for street trees and general landscaping is

presented in the table below. The planting of native species by homeowners and businesses should be encouraged. Investigate funding opportunities to plant new and appropriate species of trees along public streets, on public property, or on private property by landowners.

Wildlife Management and Habitat Protection Recommendations - The following recommendations are set forth as tools to manage animal species, and to promote a diversity of native wildlife while minimizing negative animal-based impacts to the environment or public health and safety. Wildlife management also applies to “un-naturalized” species who adapt well to urbanized environments. Animal species include terrestrial and aquatic wildlife, and insects. Natural diversity is also enhanced through a variety of the recommendations throughout this Chapter such as the protection and enhancement of riparian buffers, native species, woodlands, steep slopes, wetlands, and floodplains.

NR-13 Protect, restore, and manage locally important habitats, unique habitats, migration corridors, and plant and animal species that are, or become, designated as rare, threatened, or endangered by federal or state agencies. Consider updating ordinances to include the protection of “locally important habitats,” such as stream corridors and woodland that are locally important but have no state or federal designation. [**PLANNING COMMITTEE NOTE:** these areas would have to be mapped in this Plan] Consider updating ordinances to recognize Pennsylvania Natural Diversity Index sites that are mapped and updated on line or using new technologies. Support efforts to plan, fund, and establish noteworthy habitats, though programs such as TreeVitalize and ongoing efforts by non profit land trusts and recreational organization such as KAPA.

NR-14 Promote beneficial species and consider methods to address the control of wildlife and habituated species and the promotion of beneficial species. Consider updating ordinances to include a purpose statement that deals with the need to manage animal species in order to protect human health and safety. Wildlife, such as white tailed deer and Canada geese, whose high population densities have become un-naturalized, need to have their population controlled. These species also need to have their health maintained. Promote efforts to promote beneficial species, such as through providing bird houses and bat boxes for insect eating species.

NR-15 Reduce inappropriate or excessive lighting that can negatively impact plants and animals. Consider updating ordinances to include “dark sky” lighting regulations to reduce glare, particularly towards the sky, through requirements such as full cut-off lighting fixtures and similar best management practices. Support efforts to provide public lighting that provides for public safety and is also sensitive to the environment and consistent with the traditional lighting in historic neighborhoods.

Water Resources - Although the borough is small in size, and has a limited watershed area, it is a population center, and so has a significant impact of the larger watershed areas in the region. The following recommendations promote clean water for public and wildlife use and consumption, and maintain the proper water levels in surface waters and ground water aquifers. These recommendations address two key needs, namely:

- *Water Quantity:* There is a need to maintain the water balance through the recharge of groundwater; the coordination of water withdrawals and wastewater disposal; and the use of innovative stormwater management best management practices. These recommendations also serve to sustain provide a safe, clean, long-term supply of water, which meets the needs of residents, businesses, and aquatic habitats and wetlands. (NPDES Phase II and Act 167 Stormwater regulations regarding stormwater discharge is a key component of water quantity issues.)

- *Water Quality*: There is a need to protect, restore, maintain, and if possible improve the quality of surface and groundwater, and also to limit excessive pollution that could degrade water quality. It is important to remember that water quality is impacted by pollution that occurs in the upland portions of a watershed. Thus water quality protection can only be effective if it addresses both in-stream and upland conditions. (The Federal Clean Streams Act and TMDL's are key components of water quality issues.)

Throughout this comprehensive plan there are recommendations that deal with features such as floodplains, steep slopes, riparian buffers, and man made facilities, all of which inherently impact water quality and quantity. Therefore the recommendations below should not be regarded as the only ones that deal with the disposition of water resources.

Recommendations regarding drinking water or wastewater are presented under *Utility Infrastructure Recommendations*. In general, water that is within a pipe or a man made structure is addressed under utility planning. Water is addressed under natural resources planning if has not yet been withdrawn for public use, or has not yet been discharged following public use.

Groundwater Aquifers and Infiltration

NR-16 Promote the recharge of ground water through encouraging groundwater infiltration and best management practices in new construction, re-development and through the upgrade of existing infrastructure. Consider updating ordinances to promote groundwater infiltration and to reduce runoff, through emerging techniques such as porous paving, dry wells for downspouts, the used of landscaping and vegetation. Support efforts to construct or install such innovative technologies.

NR-17 Continue to support sewage treatment methods that promote groundwater recharge. Consider updating ordinances to recognize the value of recharging groundwater with treated effluent, while still regarding untreated effluent as a pollutant. Drip irrigation is the most common technique used to disperse treated wastewater effluent while promoting groundwater recharge. Consider efforts to eventually phase out, where feasible and practicable, existing stream discharge facilities in favor of drip irrigation.

NR-18 Utilize tools and technologies for evaluating and sustaining groundwater, such as the Red Clay Groundwater Flow Model. The Red Clay Valley Association has already developed a computer groundwater flow model using the results of the extensive studies of the Red Clay Creek Basin undertaken by the U.S. Geological Survey. This tool can be used to evaluate the potential impacts of withdrawal and land application projects or proposed developments. **[PLANNING COMMITTEE NOTE:** This model was highlighted in the Kennett Region Comprehensive Plan, is it still significant enough to note here?]

Stormwater, Runoff, and Base Flow

NR-19 Reduce stormwater runoff from impervious surfaces – Consider updating ordinances to include one section, or perhaps a stormwater ordinance, that addresses a range of techniques for reducing impervious surfaces through maximum impervious surface allowances, parking requirements, street, sidewalk and curb requirements, vegetative buffers, minimum open space requirements, groundwater and other ordinance standards. Support efforts to implement comprehensive best management practices and design criteria suitable for urban conditions, such as those presented in the *Post Construction Stormwater Management Model Ordinance* developed by the Chester County Water Resources Authority.

NR-20 Optimize the base flow of streams to provide sufficient water for use by ecological systems, and human use and consumption. Promote updating local ordinances to recognize the need to maintain base flow both for natural and man made uses. Support efforts to implement landscape designs and best management practices which promote sustainable base flow, particularly in municipalities upstream of the Borough.

Water Quality and Pollution Reduction

NR-21 Encourage the restoration of streams, with a priority on restoring streams designated as impaired. Consider updating ordinances to include best management practices such as the installation or restoration of riparian buffers along streams as a condition for development or re-development. Support efforts to restore streams, and efforts to improve impaired streams so that they lose their impaired status.

NR-22 Consider using natural resource-based technologies that improve water resources by employing planted vegetation or landscaping instead of conventional structures by requiring these strategies or providing for flexibility in Borough ordinances. There are emerging techniques for improving water resources through the construction or restoration of wetlands, swales, meadows, or woodlands that should be provided for in ordinances to provide alternatives to traditional practices and better position the Borough to receive state and federal restoration grants.

NR-23 Promote efforts to reduce and mitigate groundwater contamination, with a priority on protecting groundwater in vulnerable areas such as the Cockeysville Marble. Consider updating ordinances to include requirements for the quality of stormwater discharge in locations where the contamination of groundwater is a greater possibility. [PLANNING COMMITTEE NOTE: Is this recommendation too strong or not strong enough]

Flooding - The following recommendations are set forth to protect, restore, and maintain the natural drainage functions of surface water and floodplains. These drainage functions can also be optimized by protecting floodplain related watershed features such as wetlands, and vegetated or forested riparian buffers, all of which are discussed above under *Native Vegetation, Wetlands, and Wildlife Habitat Recommendations*.

NR-24 Continue to protect regulated floodplains using a Floodplain Overlay District. Consider updating ordinances to expand the Floodplain Overlay District to include all areas of hydric and alluvial soils and wetlands which extend into the 100-year floodplain. By including alluvial soils in the floodplain definition, unmapped floodplain areas typically associated with first order streams and headwaters will also be protected. [PLANNING COMMITTEE NOTE: Is this recommendation too strong or not strong enough]

Local and Regional Initiatives - The following recommendations are set forth to promote initiatives that will protect, restore, and manage natural resources at the municipal or regional level. Such initiatives could be public, private, or public-private partnerships. These initiatives could serve to integrate natural resources into the built environment, and ensure that resource planning, comprehensive plans, and land development activities protect both natural resources and their functions.

NR-25 Support sustainable land use practices that minimize potential impacts to natural resources on a site, and mitigates unavoidable impacts. Consider updating ordinances to include provisions that reduce the impacts of both development and redevelopment on land and water-based natural resources. Support efforts to better integrate land use and natural resource planning, such as promoting Act 537 Sewage Facilities Plans that document how wastewater discharges

impact stream base flows, water withdrawals, and the overall water balance. Support efforts to promote sustainable land use practices by civic groups such as the Brandywine Valley Association, and the Red Clay Creek Valley Association.

NR-26 Consider establishing an Environmental Advisory Council (EAC). Consider establishing an Environmental Advisory Council (EAC) to assist the planning commission with environmental reviews of proposed plans, and also provide input as requested on environmental problems, possible uses of natural open space, and resource protection and mapping. The 2004 *EAC Handbook: A Guide for Pennsylvania's Municipal Environmental Advisory Councils*, can be consulted for further information on using an EAC.

NR-27 Develop strategies, and pursue funding sources for the protection, restoration and management of natural resources at the regional level. Work with municipalities within the region to support regional conservation efforts and consider developing a multi-municipal natural resource management plan that will focus on both preservation opportunities and the restoration of degraded resources. Support efforts to initiate and implement regional and watershed-wide initiatives such as:

- Conducting natural resource inventories for a range of natural features
- Reforestation, stream restoration, urban tree planting initiatives
- Removing or managing non-native species
- Regional stormwater management initiatives such as watershed-wide Act 167 Plans
- Initiatives to improve the Delaware Estuary/Bay, and Christina River Basin
- Initiatives to improve, restore and maintain conditions within headwaters
- Establishing or upgrading Exceptional Value (EV) waters and High Quality (HQ) waters.

Education and Public Outreach - The following recommendations are set forth to promote volunteer efforts to protect, restore, and maintain natural resources, and to encourage demonstration projects and environmental education by schools, conservation groups and private organizations.

NR-28 Promote natural resource demonstration projects. Initiate and support efforts to build or install demonstration projects which restore or improve natural resources in areas that are visited by the general public.

NR-29 Promote community-based volunteer initiatives that encourage the public to experience the outdoors. Initiate and support public, private, or joint public/private efforts to use volunteer labor to restore and maintain natural resources, thereby lowering costs while increasing environmental awareness and stewardship. Such efforts may include stream clean out days, riparian buffer plantings, or activities organized by civic organizations such as the Boy or Girl Scouts.

NR-30 Educate and inform the public about the preservation and maintenance of natural resource features and the economic and real estate benefits of healthy natural resources. Initiate and support efforts to educate the public, including residents, visitors, and the business community regarding a wide range of natural resource issues including:

- Tree maintenance and selecting the proper tree or vegetation for a given location.
- The benefits of riparian buffers, and the voluntary installation of them on private property
- The benefits of reforestation and woodland management
- Planting native species, and the control or eradication of invasive and non-native species
- Naturalized and sustainable landscaping by homeowners and businesses
- Improving surface water quality and controlling runoff on the residential property
- Reducing common surface water pollutants such as lawn pesticides and pet waste

- The benefits of rain barrels and rain gardens

Such efforts can be promoted through a municipal newsletter, e-mail list serve, and website, or through tables at public events coordinated with civic groups such as the Brandywine Valley Association or the Red Clay Creek Valley Association.

Figure 10-A: Common Shade Trees, Street Trees, and Shrubs

Street Trees			
<i>Scientific Name</i>	<i>Common Name</i>	<i>Scientific Name</i>	<i>Common Name</i>
<i>Acer rubrum</i> *	Red Maple	<i>Platanus occidentalis</i> *	American Sycamore
<i>Acer saccharum</i> *	Sugar Maple	<i>Pyrus calleryana</i>	Callery Pear
<i>Celtis occidentalis</i> *	Hackberry	<i>Quercus rubra</i> *	Red Oak
<i>Fraxinus Americana</i> *	White Ash	<i>Tilia americana</i>	American Linden
<i>Fraxinus pennsylvanica</i> *	Green Ash	<i>Tilia cordata</i>	Littleleaf Linden
<i>Gingko biloba (male)</i>	Gingko	<i>Ulmus x 'Homestead'</i>	Homestead Elm
<i>Nyssa sylvatica</i> *	Black Gum	<i>Ulmus parviflora</i>	Chinese Elm
<i>Platanus acerifolia</i>	London Plane Tree	<i>Zelkova serrata</i>	Japanese Zelkova
Shade Trees (Street trees can also be used as shade Trees)			
<i>Betula nigra</i> *	River Birch	<i>Quercus coccinea</i> *	Scarlett Oak
<i>Cladastris lutea</i>	Yellowwood	<i>Quercus palustris</i> *	Pin Oak
<i>Gymnocladus dioicus</i> *	Kentucky Coffee Tree	<i>Quercus phellos</i> *	Willow Oak
<i>Koelreuteria paniculata</i>	Golden Rain	<i>Quercus rubra</i> *	Red Oak
<i>Liriodendron tulipifera</i> *	Tulip Poplar	<i>Sassafras albidum</i> *	Sassafras
<i>Liquidambar styraciflua</i> *	Sweet Gum	<i>Sophora japonica</i>	Japanese Pagoda
<i>Quercus alba</i> *	White Oak	<i>Taxodium distichum</i> *	Bald Cypress
Evergreen Trees			
<i>Abies Concolor</i>	Concolor Fir	<i>Picea omorika</i>	Serbian Spruce
<i>Ilex opaca</i> *	American Holly	<i>Pinus strobus</i> *	Eastern White Pine
<i>Juniperus virginiana</i> *	Eastern Red Cedar	<i>Pseudotsuga menziesii</i>	Douglas Fir
<i>Picea abies</i>	Norway Spruce	<i>Thuja occidentalis</i>	Eastern Arborvitae
<i>Picea glauca</i>	White Spruce	<i>Tsuga canadensis</i> *	Canadian Hemlock
Ornamental Trees			
<i>Amelanchiar canadensis</i> *	Serviceberry	<i>Koelreuteria paniculata</i>	Golden Rain Tree
<i>Betula nigra</i> *	River Birch	<i>Magnolia soulangeana</i>	Saucer Magnolia
<i>Carpinus caroliniana</i> *	Ironwood	<i>Magnolia virginiana</i> *	Sweetbay Magnolia
<i>Cercis canadensis</i> *	Redbud	<i>Malus species</i>	Crabapple
<i>Chionanthus virginicus</i> *	Fringetree	<i>Oxydendrum arboreum</i> *	Sourwood
<i>Cornus florida</i> *	Flowering Dogwood	<i>Prunus cerasifera</i>	Purpleleaf Plum
<i>Cornus kousa</i>	Chinese Dogwood	<i>Prunus sargentii</i>	Sargent Cherry
<i>Cornus mas</i>	Cornelian Dogwood	<i>Prunus subhirtella</i>	Weeping Cherry
<i>Halesia carolina</i> *	Carolina Silverbell	<i>Pyrus calleryana</i>	Flowering Pear
<i>Koelreuteria paniculata</i>	Golden Rain Tree		
Native Deciduous Shrubs			
<i>Aesculus parviflora</i> *	Bottlebrush Buckeye	<i>Hydrangea quercifolia</i> *	Oakleaf Hydrangea
<i>Aronia arbutifolia</i> *	Red Chokeberry	<i>Itea virginica</i> *	Sweetspire
<i>Callicarpa Americana</i> *	Beautyberry	<i>Ilex verticillata</i> *	Winterberry
<i>Calycanthus floridus</i> *	Carolina Allspice	<i>Lindera benzoin</i> *	Spicebush
<i>Clethra species</i> *	Summersweet	<i>Potentilla fruticosa</i> *	Bush Cinquefoil
<i>Cornus stolonifera</i> *	Redosier Dogwood	<i>Vaccinium species</i> *	Blueberry
<i>Fothergilla species</i> *	Fothergilla	<i>Viburnum dentatum</i> *	Arrowwood
<i>Hamamelis virginiana</i> *	Common Witchhazel	<i>Viburnum trilobum</i> *	American Cranberry
Native Evergreen Shrubs			
<i>Ilex glabra</i> *	Inkberry	<i>Myrica pennsylvanica</i> *	Bayberry
<i>Kalmia latifolia</i> *	Mountain Laurel	<i>Rhodo. Maximum</i> *	Rhododendron

Source: Chester County Planning Commission, 2009. Note: Species marked with an asterisk are native species. This lists presents common species and there may be other appropriate species that are not listed.

Natural Resources Provisions of the Borough Subdivision and Land Development Ordinance.

Section	Natural Resource Provisions as of the Most Recent Amendment, October 2006.
18-9.c	Requires that a tentative sketch plan include significant topographical features such as floodplains, steep slopes and woodlands.
18-9.j	Requires that a tentative sketch plan identify - within 100 feet of land being subdivided or developed - watercourses, bodies of water, floodplains, wetlands, steep slopes and any natural features impacting the ability of the applicant to subdivide or develop the land in question.
8-10.c.1	Requires that a preliminary plan meet the same requirements of Section 18-9(j).
8-10.c.2	Requires that a preliminary plan identify – within the land to be subdivided - watercourses, bodies of water, floodplains, wetlands, steep slopes of less than 15 percent, slopes of 15 to 25 percent, slopes in excess of 25 percent, and any natural features impacting the ability of the applicant to subdivide or develop the land in question.
8-10.c.3	Requires that a preliminary plan identify the locations, species and sizes of trees standing along the outer limits of tree masses, and the location of quarries, marshland and other topographical features which may effect the location of proposed roads or buildings.
18-18.d.6.	Requires the all vegetation in a roadway right-of-way be less than one-foot tall, or street trees that do not interfere with sight triangles at intersections and entranceways.
18-25.a	Requires that no permanent excavation of fill shall be made with a face steeper in slope than three horizontal to one vertical, except under specific conditions detailed in Section 18-25.
18-29.a	Limits earthmoving disturbance and changes to the landscape that would damage preserved open space or historic sites.
18-29.b	Calls for the protection of all trees six inches in diameter at breast height, unless there is sound justification. It also calls for the relocation of noteworthy vegetation if practicable.
18-29.c	Calls for the preservation of topsoil and calls for the seeding of slopes of less than 10 percent, and planting groundcover on slopes of 20 percent or more.
18-29.d	Permits a plan to be submitted - for projects where there is a conscientious effort to preserve existing natural integrity - to preserve woodlands and trees in lieu of landscaping requirements.
18-32	Calls for sediment and erosion control to be in compliance with DEP codes.

Natural Resources Provisions of the Borough Zoning Ordinance.

Section	Natural Resource Provisions as of the Most Recent Amendment, February 2005
23-3.b.2	Notes that the zoning is designed to prevent pollution (23-3.b.2) and to preserve wetlands, conservation areas and to control floodplain areas (23-3.b.3).
23-9.g	Permits forestry use by right in all zoning districts.
23-9.1.4	Restricts lighting facilities that produce unreasonable glare.
23-9.1.6	Requires a 15-foot tall vegetative screening on the side and back of property adjacent to a residential or institutional district. Also sets a minimum height for installed trees and minimum expected height at maturity.
23-11.e.	Calls for 35 percent maximum impervious coverage in the R-2 Residential district.
23-13.e	Calls for 40 percent maximum impervious coverage in the R-2 Residential district.
23-14.a.2.B	Permits a 10 percent density bonus for clustering that protects an environmental feature.
23-15.d.2.D	Calls for 60 percent maximum impervious coverage in the R-3 Residential district.
23-16.d.1.C	Calls for 60 percent maximum impervious coverage in the R-3/PAO Residential/professional office district.
23-18.d.2.A	Calls for 80 percent maximum impervious coverage in the C-1 Primary retail district.

	(TABLE SAYS 100%)
23-19.f	Calls for 90 percent maximum impervious coverage in the C-1 Primary retail district.
23-19.i.	In the C-2 district, calls for the same lighting requirements as 23-9-1.4, and the same vegetation requirements as 23-9-1.6
23-22.g	Calls for 80 percent maximum impervious coverage in the OI-1 office and industrial district.
23-22.i.1. A & B	Calls for performance standards to evaluate air pollution and noise pollution in the OI-1 office and industrial district.
23-22.i.1.F	Calls for performance standards to evaluate untreated sewage or industrial waste that might pollute surface or ground water.
23-19.k	In the OI-1 district, calls for the same lighting requirements as 23-9-1.4, and the same vegetation requirements as 23-9-1.6
23-24	Establishes FP Flood overlay district addresses flooding, water quality and quality, sedimentation, stream bank degradation
23-25	Establishes the SS Steep slope overlay district compliant with 23-48
23-26.c.3.C	Addresses continuity of landscaping in the MSD Main Street Development overlay district.
23-29.b.3	For conditional uses, calls for the same lighting requirements as 23-9-1.4, and the same vegetation requirements as 23-9-1.6
23-29.c.21	Requires that unique environmentally significant features be protected from disruption by mineral extraction.
23-41	Requires a planting plan for all areas not used for buildings or other paved surfaces.
23-44.a.1	Requires a homeowners association to be responsible for storm water control facilities on their commonly owned property.
23-46	Requires all land uses to minimize impacts to forested areas and other natural features.
23-48.a.5	Forbids land uses that would cause serious pollution to ground water or surface water.
23-48.e.2	Permits a maximum disturbance of 30 percent of slopes of 15 to 20 percent, and a maximum disturbance of 15 percent of slopes of 20 to 25 percent
23-49	Forbids construction within wetlands, within 15 feet of wetlands. Forbids structures and impervious surfaces within the 100-year floodplain, except as permitted by the PA DEP.
23-49	Forbids construction within wetlands, within 15 feet of wetlands. Forbids structures and impervious surfaces within the 100-year floodplain, except as permitted by the PA DEP.
23-54	Limits vibration on a property.
23-55	Limits air pollution from devices on a property.
23-56	Limits light from a property.