ENVIRONMENT
Preserving Blacksburg’s Abundant Natural Resources

GOAL
Retain the beauty, functions, and values of the natural and rural environments that characterize Blacksburg.

Sustainability Goal
The Town works in partnership with the community to preserve and protect the environment, including rural and urban areas of Blacksburg that contribute to Blacksburg’s quality of life.

Citizen Involvement
There are several Council-appointed committees that address environmental concerns and involve citizen participation, such as the Agricultural and Forestal District (AFD) Advisory Committee or Planning Commission. Many citizens have expressed their willingness to take steps to maintain open space on their properties through privately held conservation easements or participation in the Town’s AFD Program. Citizens are encouraged to participate in the Blacksburg Citizens Institute to learn more about Town operations in general.

OVERVIEW
The beautiful natural environment of the region, including the mountains, valleys, agricultural land, and water resources, contribute to Blacksburg’s character and quality of life. Town residents have access to surrounding natural areas, including the Jefferson National Forest, the New River and the Virginia Tech campus, all of which contribute to the quality of life in Town.

This chapter highlights the natural resources found within the Town and surrounding areas including: land resources (open space, agriculture and greenways), geologic features (karst, topography, minerals and radon), watershed resources (flooding hazards, stormwater, and groundwater), air quality and energy.

LAND RESOURCES

Open Space
There are a number of open space areas and agricultural lands within the Town limits.

Open space planning in this region began with the development of a document entitled Open Space Planning, an Initiative for Our Future, dated 1994. Primary themes identified in the Open Space Initiative include:

- Conservation of Farmland
- Protection of Water Resources
- Protection of Scenic Views
- Preservation of Historic Sites and Structures
- Preservation of Rural Community and Landscape
- Identification of Recreational Locations

Open Space along Prices Fork Road
Open space in the Town of Blacksburg can be categorized in the following ways:

(1) Privately-owned open space associated with a farm or a home that is usually not open to public access or has very limited public access. This includes conservation easements.
(2) Common open space land in a development that is reserved for use by that development's residents.
(3) Undeveloped recreational property publicly owned by the Town that includes open space land intended for passive recreational use by the entire community or where active future recreational amenities are planned.
(4) Developed recreational property publicly owned by the Town that includes land currently used for active recreational activity by the entire community or intended for future active recreational uses.

All four types of open space are important and each contributes to the overall quality of life in Blacksburg. Open spaces also help to preserve and protect natural features such as groundwater recharge areas, steep slopes, and wildlife habitats. Also of significant value to the community are ridgelines, hilltops, and lands identified in the Greenway Master Plan, lands adjacent to existing public parks and existing preserved open space or the Creek Valley Overlay.

The protection of open space will play an important role in guiding the future sustainability of our community. Natural amenities are a growing factor in the decision-making process for younger workers and retirees as they decide where to live. Open space, viewsheds, and sensitivity to ongoing agriculture operations should be elements reviewed as part of the development proposals. It is important to involve all citizens in the discussion of open space as a part of rural and urban lifestyles.

**Agriculture**

Agricultural lands provide economic value and contribute to the unique character of the Town. According to the soil suitability map found in the *Blacksburg Administrative Manual*, approximately one-sixth of the land within the Town boundaries is classified as prime agricultural land, and one-third is well-suited for agriculture. Over the years, large tracts of farmland have become less common as the economic challenges of family farming have increased. Another challenge in supporting this land use, and its associated economic and aesthetic characteristics, is the realization that land suitable for agricultural use is also suitable for urban development; however, there are ways to support farming within the Town and the region.

There is an ever-increasing understanding of the value of local food production and the importance of access to local healthy foods. While the amount of local farmland within the Town limits may not be large, the Town has another role to play in supporting agriculture. As the Town becomes more urban, the Town government, Virginia Tech, private restaurateurs and citizens will collectively become a major market that can increase demand for locally grown foods and products, plus agri-tourism services. This places the Town and citizens in a position to support organizations and businesses such as the Blacksburg Farmers Market, the Hale-YMCA Community gardens, Community Supported Agricultural (CSA) programs, neighborhood gardens, and restaurants serving locally grown food. The Town can also support regional efforts to improve processing and transportation facilities for agricultural products.
By working regionally, the Town can support existing regional farms and vineyards by helping to protect key agricultural lands. This can be done by working with local organizations coordinating voluntary conservation easements of adjacent properties located on the Town/County jurisdictional lines. This protects cohesive tracts of agricultural lands. This same approach can be utilized by continuing with the County and Town’s Agricultural and Forestal District (AFD) designation. AFDs were established to conserve, to protect, and to encourage the development and improvement of the Commonwealth's agricultural and forestal lands for the production of food and other agricultural and forestal products. The districts are also designed to conserve and protect these lands as valued natural and ecological resources that provide essential open space for watershed protection, for wildlife habitat, and for aesthetic purposes. Please refer to the Town’s official Zoning District map for current locations of AFDs.

**Greenways**
Greenways are linear stretches of open space that can include recreational, cultural, and natural areas such as parks, trails, and other “green” spaces. The development and use of the greenway system in Blacksburg is an outgrowth of community interest in conservation of natural resources, recreation opportunities, and viable alternatives to motorized transportation. Greenways are part of Blacksburg’s green infrastructure, providing natural buffer areas to improve water, soil and air quality, serving as wildlife habitat and corridors, reducing the impacts of flooding, and adding aesthetic and viewshed protection. Greenways typically follow natural or manmade features such as streams, railways, or roads, and they are used for transportation, recreation, education, and environmental protection.

Conservation benefits are also derived from the preservation of greenway corridors by maintaining the integrity of scenic vistas and watersheds, protecting water quality in streams and aquifers, and preserving natural habitats and wildlife. These corridors are essential community features that foster the sense of environmental stewardship within the community. Greenways can help promote economic development and tourism, plus increase the beauty of neighborhoods as well as the value of surrounding properties. Some greenways have trails that supplement the Town’s formally maintained system, Paths to the Future, which is discussed further in the *Transportation Chapter*. 
GEOLOGIC FEATURES

Karst
Blacksburg’s geologic features include karst terrain. Karst areas are underlain by soluble carbonate rock, such as limestone or dolomite, which is susceptible to dissolution. This can result in sinkholes, caves, and underground streams, which may pose potential hazards for development. Although most of the Town overlies soluble carbonate bedrock, the degree of karst development is generally low. There are no sinking streams, and most sinkholes are broad, shallow, and stable. The following map, Geologic Features, identifies eight karst areas with the most significant sinkhole development that are the main areas of concern from a development perspective. Development on and around sensitive karst terrain will have a negative impact on the region’s groundwater resources. Locations of individual sinkholes from a variety of data sources should be maintained and considered during development, but the majority of protection and monitoring efforts should concentrate on the eight karst areas. These features may pose ground-stability problems for construction and are potential avenues for groundwater contamination. Natural drainage patterns around sinkholes should be maintained to prevent increasing runoff or flooding. As detailed in the Natural Heritage program coordinated by the Virginia Department of Conservation and Recreation, the Town is also traversed by several inactive geologic faults, which may present another area vulnerability to groundwater pollution.

Topography
Despite its location in the mountains, much of Blacksburg’s land is relatively flat. The older, settled parts of Town have slopes of 5% or less and may lie within natural floodplains. Approximately 90% percent of the remaining area has between 5% and 15% slopes. Throughout the Toms Creek Basin watershed and east of Town down to the Ellett Valley, slopes often exceed 15%. Additionally, there are some steeply sloping lands along the sides of Brush Mountain. These steep slopes add to the visual character of the community. However, development on these slopes can result in erosion, landslides, increased peak stormwater flows, siltation, and sedimentation. This topography also lends itself to the construction of more environmentally sensitive clusters or large lot developments, as well as to additional open space dedications.

Minerals
Mineral resources are mined in and around Blacksburg. A prominent quarry lies at the corporate limits near Highland Circle and provides the university with Hokie Stone. A former sandstone quarry lies east of Ellett Road just inside the Town’s corporate limits.

Radon
Geologic conditions in the region produce radon at a higher than average rate for the state. Radon is a heavier than air, colorless, odorless gas that occurs naturally. It comes from the natural (radioactive) breakdown of uranium in soil, rock, and water. It can occur in any type of building and build up to dangerous levels if not remediated. The U.S. EPA and the Surgeon General recommend testing all homes below the third floor for radon.
**Hazard Mitigation**

The federal Disaster Mitigation Act of 2000, as amended, requires that local governments develop and adopt natural hazard mitigation plans in order to receive certain Federal Emergency Management Agency (FEMA) federal assistance. FEMA describes hazard mitigation as “sustained actions taken to reduce or eliminate long-term risk from hazards and their effects.” Events, both nationally and locally, in the past decade have shifted some of the focus of natural hazard mitigation to include mitigation of human-caused hazards.

The 2011 update to the New River Valley Hazard Mitigation Plan is a revision to the region’s original plan, adopted and approved by FEMA in May 2005. This plan must be updated every five years. The Town of Blacksburg adopted the updated plan in December 2011.

In the 2011 update, new data and analysis have improved the hazard identification related to geological features and risk assessment used to determine mitigation strategies regionally and locally. The plan focuses primarily on natural hazards just discussed, such as karst, landslides and rockfalls associated with steep slopes. Hazards can also include other natural events such as earthquakes, flooding and drought. A copy of the adopted 2011 Hazard Mitigation Plan can be found at [www.nrvpdc.org](http://www.nrvpdc.org).
WATER RESOURCES

Watersheds
Located on the eastern continental divide, water in Blacksburg drains either eastward towards the Roanoke River and the Atlantic Ocean, or westward to the New River and eventually the Mississippi River and the Gulf of Mexico. Blacksburg is located in the headwater areas and thus the Town receives little surface runoff from outside its boundaries. The headwaters of five watersheds begin within Town limits: Toms Creek, Upper Stroubles Creek, Slate Branch of Stroubles Creek, Dry Run of the Northfork Roanoke River, and Wilson Creek of the Northfork Roanoke River. These watersheds are the source of water for several streams located in Town: Toms Creek, Stroubles Creek, Slate Branch, Cedar Run, Wilson Creek, and Dry Run. These stream systems recharge the region's aquifer through sinkholes and other pervious areas and discharge at springs and creek beds. Several natural watershed features, such as wetlands, ephemeral stream channels, and water impoundments, are located throughout the Town.

Whether as groundwater or surface water, these natural water quality assets are protected through the Virginia Water Protection Permit Program that is administered jointly by the Virginia Department of Environmental Quality (DEQ) and the U.S. Army Corps of Engineers (COE). Problems that can result from poor protection of watershed assets include excessive stormwater runoff and flooding, increased non-point source pollution, habitat destruction, and impairment of stream water quality.

The Town of Blacksburg owns and operates a Municipal Separate Storm Sewer System (MS4), which releases stormwater to our local creeks and waterways. Therefore, the Town must obtain a National Pollutant Discharge Elimination System (NPDES) permit and maintain a stormwater management program. Adherence to the permit conditions and the plan is regulated by the Virginia Department of Conservation and Recreation (DCR). Recent additions to the NPDES permit require that the Town actively work towards implementation of programs, evaluations and best management practices to reduce the designated pollutant contribution to a creek’s impairment.

Water quality is an issue in several watersheds. Once determined to be impaired, the watershed is scheduled for a Total Maximum Daily Load (TMDL) study. TMDL studies have already been completed for Stroubles Creek, Wilson Creek and the Upper Roanoke watersheds. As of 2012, Toms Creek has also been designated as impaired by the DEQ because of violations to the state’s water quality standards. A study is now scheduled to be completed for this watershed. In addition to the TMDL study, the watershed stakeholders must attempt to restore water quality by developing and implementing a strategy that will limit pollutants discharged to impaired creeks. The respective TMDLs and the Town’s MS4 together identify major strategies for improvement of stream quality, including measures for stormwater control and education of citizens, contractors and engineers. Additional information on the TMDLs can be found by contacting the Town’s Engineering Department or by going to the Town’s website.
The MS4 Program Plan was updated in January 2010 and states that the Town is accountable for specific pollutant reductions through the assignment of Waste Load Allocations (WLAs). The Town currently has three stormwater-related WLAs associated with TMDLs. The WLAs are as follows: 211 tons/year sediment to Stroubles Creek, 102 tons/year sediment to Upper Roanoke River watershed, and 3.15E+09 cfu/year bacteria (E coli) to Wilson Creek.

In light of the resources required to address the TMDLs, it is important for the Town to protect the water quality of the remaining streams. Non-point source pollution from agriculture, urbanization and development is the main threat to water quality. The Town’s Creek Valley Overlay District attempts to protect the riparian corridors that are susceptible to soil erosion and runoff in Toms Creek and sections of Stroubles Creek and Slate Branch located to the west of the 460 bypass. The Town’s Flood Hazard Overlay District discussed below also protects riparian corridors by limiting development activities in areas of the Town that lie in drainage areas of 100 acres or more. The Town is also looking at other approaches to manage watershed assets, including the recommendations of the 2011 Stormwater Management Task Force, which are further detailed in the Utilities Chapter.

Flooding Hazards
The Town experiences two types of flooding hazards: flooding along natural floodplains and flooding during severe storm events.

Floodplains
The first type of flooding occurs in natural floodplains running along Toms Creek, Stroubles Creek, and Cedar Run. To mitigate flooding in these areas, the Town complies with the FEMA National Flood Insurance Program by restricting land use in this zone.

The Town has adopted a Creek Valley Overlay District, which includes the entire 100-year floodplain as well as slopes greater than 25% within the floodplain or land within 50 feet of the stream, whichever the greater distance. One-hundred-year floodplains are also protected in the Flood Hazard Overlay area in the remainder of Town. The Creek Valley Overlay and Flood Hazard Overlay districts protect surface water and riparian resources in the Toms Creek Basin watershed and some other areas of Town, though they do not protect all waterways at this time.

The Town's current floodplain policy is to retain floodplains in their natural state, to mitigate flooding, to protect water quality, and to provide for open space and wetland habitats. In addition, the floodplains and stream valleys form the spine of the Town's proposed greenway system, discussed further in the Greenways section of the Transportation Chapter. In the more urban areas of Town, site design for new development and redevelopment does not always optimize the protection of the watersheds and riparian buffer areas. Where the natural floodplain no longer exists and reestablishing it would be detrimental to the Town, the current floodplain policy is to avoid restricting the floodway so as to avoid increasing flood levels and to require flood proofing of all spaces below flood level. This is the case in the historic Downtown. While not subject to other Town regulations, Virginia Tech must adhere to the Town’s Floodplain Ordinance.

Stormwater
The second type of flooding occurs during severe storm events in urbanized areas, especially in portions of the Stroubles Creek basin in the vicinity of Downtown and the Virginia Tech campus. This flooding is partially attributed to the covering of the floodplain and main creek channel with
building construction, which constrains flow and infiltration. Parts of Stroubles Creek and its tributaries have been covered or piped by development, eliminating their environmental, ecological, and visual amenities, and degrading water quality downstream. Constraining stormwater drainage within this watershed creates a flooding hazard exacerbated by impervious surfaces associated with the continued urban development of the drainage basin. The Town receives little storm runoff from outside the jurisdiction because of its location along the continental divide, making it possible for the Town and Virginia Tech to control runoff impacts within their own storm drainage system and not further impair watersheds downstream.

Older developments in Town met the stormwater management standards at the time of construction, but stormwater management standards have changed significantly over the years. Current stormwater drainage and detention systems constructed in new developments are designed for a statistical storm frequency occurring once every two and ten years. However, larger storms result in yard, street, and sometimes structural flooding. The advantage of a regional management plan for a watershed is that it allows the Town to strategically plan stormwater detention areas to best benefit the watershed on the whole, rather than piece by piece as the land develops. Current watershed mapping and modeling will enable the Town to plan and implement stormwater facilities more efficiently.

**Stormwater Management Task Force**

As also discussed in the *Utilities Chapter*, in the spring of 2008, Town Council created the Stormwater Management Task Force to study, define, and recommend stormwater management programs and practices to resolve and avoid problems, to improve the water quality in Town streams and waterways, and to ensure the health, safety, and welfare of current and future citizens of Blacksburg. After addressing sediment and erosion control efforts, the Task Force’s final recommendations were made to Council in May 2010. The complete report is available on the Town’s website and in the Comprehensive Plan objectives and policies detailed in the *Utilities Chapter*.

**Groundwater**

Groundwater is used only minimally as a drinking water source within Town limits, on Old Mill Road and a small section of Bishop Road. The Town does impact regional aquifers, however, through land use activities near recharge areas and karst features.

**Water Reuse**

Water reuse is becoming an important component of water resources management. While the Town is fortunate to have a reliable water supply, water should not be wasted when it can be reused. Water reuse can include collection of stormwater, reuse of graywater in homes and businesses, and reuse of treated wastewater. Water can be reused for irrigation, vehicle washing, toilet flushing, and industrial purposes. The Town supports water reuse, particularly as a regulatory framework is developed to protect human health and the environment and as public acceptance of this practice grows. Water reuse is consistent with the Town’s environmental and sustainability goals.
AIR QUALITY & ENERGY

Blacksburg’s air quality is a major asset to the environment, the health of residents, and the scenic beauty of the Town. Air quality is affected by the type and amount of energy consumption, its production, and resulting air pollutants.

The U.S. EPA establishes air quality standards, which are monitored by the Virginia DEQ. Blacksburg lies in a geographic area that meets or exceeds national ambient air quality standards and is designated as an “air quality attainment area.” It is critical to maintain this designation as localities designated “non-attainment areas” are required to design a plan and take steps to improve air quality.

Air pollutants that do exist include those from the combustion of fossil fuels from stationary and mobile sources, originating not only locally, but also from other areas, including coal-fired boilers, power plants, and motor vehicle emissions. Energy consumption, including Virginia Tech's coal-fired boilers and increased traffic along the Route 460 corridor and in Town, affects Blacksburg's air quality. One way to maintain and enhance Blacksburg's air quality and to conserve resources is to reduce energy use, thus decreasing fuel combustion and air pollutant emissions. Advancement of the community as an energy efficient model will not only lessen energy consumption locally, but will also encourage surrounding communities to conserve, which will lead to a reduction of migratory pollutants.

Transportation accounts for most of the total end use energy consumed by the Town of Blacksburg. The Town can improve its transportation energy efficiency and reduce pollutant emissions with its transit system, a reasonably compact development pattern, and by expanding the greenway, bikeway, and walkway systems.

Energy consumed by buildings, both residential and commercial, accounts for another main portion of energy use in the Town. For power, the Town currently relies on traditional energy sources, such as coal, natural gas and nuclear energy, from a limited number of energy suppliers. To achieve the Town’s sustainability goals, alternative energy sources and suppliers are needed and desired.

There are multiple ways to improve the efficiency of both new and existing residential and commercial buildings to provide an opportunity for increased energy efficiency. Virginia’s Uniform Statewide Building Code requires new and renovated buildings to be more energy efficient. American Electric Power Company is currently experimenting with demand side management (DSM) programs, designed to reduce customers’ energy use through the use of efficiency-improving devices. Virginia Tech Electric Service does not currently utilize DSM. The Town also partners with the Community Alliance for Energy Efficiency (cafe²), a non-profit regional energy alliance that focuses on residential energy efficiency. Finally, land use patterns can enhance the usage of natural heating and cooling and reduce residents’ transportation energy...
needs. Some of the land use patterns and techniques can include planting trees and other landscaping materials, orienting buildings to maximize solar energy efficiency, and reducing trip generation by redeveloping infill sites with a mix of uses or clustering development.

**ENVIRONMENT**
**Objectives and Policies**

**Natural Resources**
EN.1. Emphasize collaborative planning and communications between jurisdictions, including the NRVPDC, Virginia Tech, Montgomery and Giles Counties, Christiansburg, and the U.S. Forest Service.
   - Provide community access to information about the natural resources and open spaces of Blacksburg
   - Work with NRVPDC and others to identify and preserve the region’s “Green Infrastructure” for its environmental and ecosystem functions as well as assets to ecotourism

EN.2. Work with such programs as the Virginia Natural Heritage program and other data sources to acquire up-to-date information about wildlife habitats, threatened and endangered species, and species of special concern to support environmental protection and to utilize during the development review process.

EN.3. Conserve, protect and manage networks and corridors of natural vegetation, forested areas, wildlife habitat, and undeveloped steep slopes.

EN.4. As part of the development review process, ensure that natural resources, including native habitat and threatened and endangered species, are protected.

EN.5. Promote and educate the public about the value of natural resources.

**Land Resources: Open Space, Viewsheds & Greenways**
EN.6. Protect the region's natural character and scenic views through preservation of open spaces, ridgelines, forests and rural lands.

EN.7. Work with Montgomery County, the U.S. Forest Service, American Electric Power, public water authorities, telephone companies, and other utilities to protect ridgelines identified as important visual resources from unnecessary clear-cut timbering, utility placement, and other highly visible landscape-marring activities.

EN.8. As part of the development review process, address the protection of viewsheds. Ensure that subdivision of any land respects adjacent or affected open space features, and plan for connections to open spaces within and outside the subdivision.

EN.9. Ensure public access to area natural resources, open space, waterways, and views.
   - Encourage the provision of greenway linkages from the central greenway along Toms Creek to the rest of the basin and to other areas of Town as properties are developed.
• Develop and maintain financing options, including a land-banking fund, to purchase high priority open spaces (e.g. parks, greenways, dry or wet ponds for stormwater detention, etc.) where dedication through development is unlikely.

EN.10. Acquire land easements or utilize other conservation measures along the entire length of Toms Creek, Stroubles Creek and Cedar Run to create a large greenway that also serves to enhance the riparian buffer.

EN.11. Develop a greenway system that protects the biological diversity of plant and animal species, maintains the connections between natural communities, provides wildlife corridors, includes the area’s natural and cultural diversity, and preserves linear stretches of open space. Coordinate the greenway system with area stormwater management and maximize opportunities to uncover or daylight channeled and piped urban streams.

EN.12. Expand environmental functions of greenways such as wildlife corridors and habitats, pervious surfaces and soil preservation, floodplain projection, riparian buffers, stormwater management, and floodplain protection.

EN.13. Support greenway funding, acquisition, and maintenance.
  • Encourage private support and development of greenways
  • Regain a public access or greenway easement as appropriate when the Town disposes of property
  • Support private non-profit entities, such as the New River Land Trust, in acquiring greenways
  • Make use of private, local, state, and federal funding programs

EN.14. As part of the development review process, the Town will evaluate opportunities and incentives to expand and connect the greenway system to provide a contiguously connected system.

EN.15. Acquire land and/or scenic trail easements to preserve and reclaim natural floodplains to enhance water quality; protect wildlife habitats and open space; and provide recreational, educational, and alternative transportation opportunities.

EN.16. Identify and record threatened and endangered species, specimen trees, and other important natural features within greenway corridors, and minimize disturbance during trail design and construction, and/or maintenance.

EN.17. As part of the development review process, the Town will evaluate a proposed development’s impact and proposed mitigation measures for the following:
  • Open Space
  • Urban Forest Canopy
  • Viewsheds
  • Mineral Resources
  • Cultural Resources
  • Threatened and Endangered Species
  • Watershed
Land Resources: Agriculture
EN.18. Encourage both private and public efforts to preserve and manage agricultural and open lands through land trusts, open space easements, participation in the Agricultural and Forestal Districts (AFDs) and fee simple acquisition.

EN.19. Increase community engagement and consumer demand for locally grown food.
- Help connect institutional, restaurant, and wholesale opportunities with agricultural producers and food-based entrepreneurs
- Work with regional economic development entities and local governments to give local agriculture a higher priority and more visibility
- Support local food producers by helping to protect agricultural lands and broaden their markets to include such places as the Blacksburg Farmers Market, Community Supported Agriculture programs and suppliers to local restaurants

EN.20. Support regional efforts to advance retention of farmland and economic viability of farming.

Geologic Features: Karst & Steep Slopes
EN.21. Open space is the preferred land use in fragile terrain. As part of the development review process, the Town will:
- Prohibit development on steep slopes exceeding 25%
- Restrict development on karst topography

EN.22. Educate the public about the vulnerability of groundwater in sensitive karst terrain in cooperation with the Virginia Cooperative Extension Service and the Department of Conservation and Recreation’s Karst Program.

EN.23. Ensure that development in karst terrain does not impact groundwater or karst environments and ecosystems.
- Protect karst areas and groundwater flows by minimizing surface water, drainage, and structural impacts near sensitive karst areas
- Avoid use of septic systems and discourage use of fertilizers, pesticides, herbicides, and other chemicals in areas of sensitive karst terrain
- Study the area's subsurface relationship between geology and groundwater to aid in developing future protection measures and monitoring techniques
- Identify karst areas that may facilitate contamination of the subsurface

EN.24. Educate the public on radon testing and remediation measures. Ensure all Town properties meet radon testing regulations.

Watershed Resources: Watersheds, Flooding Hazards, Stormwater and Groundwater

EN.26. Open space is the preferred land use in fragile terrain. As part of the development review process, the Town will:
- Prohibit development in wetlands
- Restrict development in riparian buffer zones
- Restrict development in Creek Valley Overlay

EN.27. Implement the BMPs required in the MS4 Program Plan.

EN.28. Recognize, map, preserve, and restore watershed assets so that surface and groundwater quality and quantity can meet state standards, plus the needs of the human and natural systems in our community. Protect and preserve streams and water quality from further deterioration.

EN.29. Encourage daylighting of streams.

Air Quality & Energy

EN.30. Finalize, adopt and implement the Climate Action Plan that emphasizes lowering energy use, reducing greenhouse gas emissions, and improving air quality.

EN.31. Maintain or improve air quality in the region to be healthy for citizens, wildlife, vegetation, and water resources. Educate citizens, decision-makers, and businesses about air quality impacts and mitigation/removal of such impacts.

EN.32. Limit the negative effects of vehicle traffic on air quality, and set an example for the private sector by using low-emissions, alternatively-fueled vehicles in the Town’s municipal fleet and Blacksburg Transit and by encouraging fuel-efficient operation practices and incentives.

EN.33. Support local employers and citizens in establishing and reaching vehicle travel reduction goals to reduce air pollution.
- Consider telecommuting and flex-time policies
- Consider car-pooling and public transit incentives
- Increase access to services online
- Encourage Virginia Tech to limit and reduce vehicular traffic to/from/on-campus

EN.34. Support citizens in establishing and reaching vehicle travel reduction goals to reduce air pollution.
- Request telecommuting and flex time policies from employers
- Car-pool and combine trips
- Walk, bike and use public transit
- Utilize services available online
- Consider vehicle travel costs and impacts when making housing choices

EN.35. Implement appropriate mitigation measures now mandated in non-attainment areas to keep Blacksburg from falling into non-attainment status. Monitor air quality through periodic testing.
EN.36. Limit the negative effects of air pollution from local power producers.
  • Work with Virginia Tech to identify less polluting alternatives to the operation of the in-Town, coal-fired boilers for power production
  • Encourage Virginia Tech Electric Service (VTES) and American Electric Power (AEP) to implement Demand Side Management programs in Blacksburg
  • Encourage VTES and AEP to facilitate citizen and local business participation in power generation through small scale wind and solar facilities
  • Encourage AEP to purchase or develop wind, solar, and hydro generated power as part of the local provision of power.
  • Encourage AEP to implement smart grid technology
  • Encourage AEP to implement time-of-day electricity pricing

EN.37. Amend the Zoning Ordinance to promote wind and solar power where viable.

EN.38. Establish programs and incentives in partnership with the regional energy alliance, Community Alliance for Energy Efficiency (cafe^2), to reduce energy use in single-family homes, including the use of renewable energy.

EN.39. Establish programs and incentives to reduce energy use in multi-family housing units.