

2009 COMPREHENSIVE PLAN

Environmental Resources & Protection

2009

CITY OF WESTMINSTER

What is the Environmental Resources & Protection Element?

Section 3.05 of Article 66B requires that the plan include a sensitive areas element that contains goals, objectives, principles, policies, and standards designed to protect, from the adverse effects of development, sensitive areas, including streams and their buffers, 100-year floodplains, habitats of threatened and endangered species, and steep slopes.

The Environmental Resources & Protection Element will describe how the City of Westminster will protect the following sensitive areas from adverse impacts of development:

- streams and their buffers
- 100-year floodplains
- endangered or threatened species habitat
- steep slopes
- wetlands and their buffers
- wellhead buffers
- carbonate rock areas
- reservoir watersheds
- trees and native plant species
- agricultural and forest lands intended for resource protection or conservation

Community Vision for the Environment

Carroll County is known for its beautiful green landscapes and vast stretches of open farmland. Residents want to keep the rural image of Westminster by preserving green space and creating open space. However, some residents are dissatisfied or very dissatisfied with the City’s efforts to preserve green space and to create open space. Residents enjoy open spaces, especially in the form of parks, walking trails and biking trails.

Residents want to protect the environment for recreational purposes but they also want to protect the environment for future residents. There is a consensus among residents that there should more effort by the City to improve the environmental health of Westminster. This includes efforts to ensure clean water resources, good air quality, land conservation, smart growth and an attractive community.

There are several changes that residents want to see occur in the future to protect the environment of Westminster. They would like to see less construction of new housing developments or commercial developments. If any new homes are built in the future, residents would like the homes to be small, energy efficient and be able to conserve water. Residents want Westminster to become a “green city” where all residents and businesses work to reduce their environmental footprint.

State Planning Visions found in this Element

Environmental Protection - Land and water resources are carefully managed to restore and maintain healthy air and water, natural systems and living resources.

Resource Conservation - Waterways, open space, natural systems, scenic areas, forests, and agricultural areas are conserved.

Quality of Life and Sustainability - A high quality of life is achieved through universal stewardship of the land, water, and air resulting in sustainable communities and protection of the environment.



Part 1: History

Carroll County and the incorporated municipalities worked in a collaborative effort through an Interjurisdictional Steering Committee and adopted an Environmental Resources Element of the Comprehensive Plan. This element satisfies the State requirement to develop and adopt a “sensitive areas” element to the Plan. In that regard, City staff worked collaboratively with County staff in 1998 to incorporate elements of the ERE into the City of Westminster Comprehensive Plan.

The 2009 City of Westminster Comprehensive includes actions taken by the City to further enhance the protection of natural resources. Since 2004, protecting the environment and its resources has become an issue at the forefront of municipal decisions for not only the City of Westminster but throughout the world. For that reason the City of Westminster has renamed this chapter “Environmental Resources & Protection Element.”

Section 1: Planning Act of 1992

On October 1, 1992, the Maryland Economic Growth, Resource Protection, and Planning Act of 1992 took effect. The Act was adopted because of recognition within the State that changes in land use within the State have resulted in a decline in the quality of the State's environmental resources and, therefore, a related decline in the quality of life for the citizens of the State. As development has expanded throughout the State, the impacts on our local environmental resources have increased. Studies have demonstrated that the cumulative effect of these changes on a local level have caused a decline in the Chesapeake Bay, as well as other environmental resources.

The premise the Planning Act of 1992 is that the local comprehensive planning process undertaken by counties and towns is the most effective and suitable method to establish priorities for growth and resource conservation, and that once those priorities are established at the local level, it is the State's responsibility to support and uphold them. County and municipal comprehensive plans are being amended to address an established set of policies, called "visions." The visions were prepared as part of the 1987 Chesapeake Bay Agreement between Maryland, Virginia, the District of Columbia, and Pennsylvania and are reiterated by the Maryland legislature in the 1992 Planning Act.

CHAPTER 6

- Part 1: History**
- Part 2: Climate**
- Part 3: Topography & Soils**
- Part 4: Water Resources**
- Part 5: Forested Areas**
- Part 6: Sensitive Areas**
- Part 7: Environmental Stewardship Programs**
- Part 8: State Environmental Programs**
- Goals & Objectives**

Article 66B, Section 3.06, requires that all local comprehensive plans address these visions. Furthermore, Section 3.05 of Article 66B requires that the plan include a sensitive areas element that contains goals, objectives, principles, policies, and standards designed to protect, from the adverse effects of development, sensitive areas, including streams and their buffers, 100-year floodplains, habitats of threatened and endangered species, steep slopes, wetlands and their buffers, and agricultural and forest lands intended for resource protection or conservation (Map 6.1). The sensitive areas element can also include other areas in need of special protection, as determined in the local plan. This chapter serves as the sensitive areas element of the *City of Westminster Comprehensive Plan* and fulfills these requirements of Article 66B.

Part 2: Climate

In general, the City of Westminster has a humid, continental climate with four well-defined seasons. The mean temperature in Westminster is approximately 53 degrees Fahrenheit, with wide variations in temperature between different times of the year. The hottest part of the year is the last part of July and the beginning of August, and the coldest time of year is the latter part of January and the early part of February. A temperature of 90 degrees Fahrenheit or more can be expected on an average of 22 days per year. During winter, the temperature falls below 32 degrees Fahrenheit frequently.

The annual average precipitation in Westminster is approximately 42 inches. In general, precipitation is fairly evenly distributed throughout the year. There are normally 3 to 4 inches of precipitation per month for most of the year, with slightly higher recordings in July and August. Droughts are possible at any time of year; however, a serious drought is most likely during the summer. The average annual snowfall in Westminster is 33.5 inches; however, the annual total snowfall varies greatly from year to year. There are typically 7 to 8.5 inches of snow per month between December and March, with the heaviest snowfall occurring toward the end of the winter in February and March.

The prevailing wind in the Westminster area is from the west-northwest or northwest, except from June through September, when the prevailing wind is southerly. The average wind velocity is 8 to 10 miles per hour, but winds of 50 to 60 miles per hour sometimes accompany hurricanes, severe thunderstorms during the summer, or general storms during the winter. Tornadoes have also been known to touch down in the Westminster area.

Part 3: Topography & Soils

Section 1: Topography

The topography in the Westminster area is rolling, with elevations that range from 540 feet above sea level at the Wastewater Treatment Plant to 900 feet above sea level at the southeast end of the City. Two irregular ridges cross the Westminster Community Planning Area (CPA) from north-northeast to south-southwest. A northeastern extension of Parr's Ridge connects Mount Airy with Westminster, and

a northeastern extension of Dug Hill Ridge connects the northern areas of Westminster, around the Air Business Center, with Manchester.

Areas containing steep slopes predominate in three general locations within the Westminster CPA. In the southwest portion of the CPA, steep slopes occur in the area along Little Pipe Creek and the Western Maryland Railroad, and in the area southeast of Stone Chapel Road and Old New Windsor Pike. In the northeast portion of the CPA, steep slopes occur in areas along the West Branch and its tributaries and the Western Maryland Railroad.

Section 2: Soils

There are two general soil types in the City of Westminster. A majority of the Westminster Community Planning Area is comprised of the Glenelg-Manor-Mt. Airy association. This type of soil is defined as well-drained and somewhat excessively drained, mainly hilly soils that are deep and moderately deep over schist. Since many areas are too steep for regular cultivation, proportionately more of the land within the City is wooded than land in the unincorporated portion of Carroll County. The Mount Airy soils are only 2 to 3 feet deep to bedrock, and therefore, have severe limitations that restrict the use of septic systems. The Glenelg and Manor soils have less severe limitations on the use of septic systems.

Two areas of the Westminster CPA are located in the Mt. Airy-Glenelg association. A small finger of this association extends to the northwest part of the CPA in an area west of Maryland Route 97 in the vicinity of the Air Business Center. Another area is located in the southwest portion of the CPA. Situated generally south of Main Street and Uniontown Road, it extends from east of Maryland Route 27 (midway between Maryland 27 and Maryland 32) westerly to beyond the CPA boundary. This association is dominantly somewhat excessively drained, rolling to very steep, and contains channery soils that are moderately deep and deep over schist. The soils of this association are more strongly sloping, and the slopes are more broken than the soils in other parts of Carroll County. Sizable areas are still woodland and those areas within floodplains should remain wooded. Some of the steeper cleared areas that are eroded are prime candidates for reforestation, either naturally or by planting. A cover of trees in floodplains or on steep slopes would protect the watershed and reduce damage by floodwater and transported soil material in other areas. The majority of soils in the Mt. Airy-Glenelg association are generally too shallow or too steep for the use of septic systems.

The *Soil Survey of Carroll County, Maryland* classifies soil types into eight categories. Class I, II, and III soils are considered to be prime agricultural soils, as well as prime development soils. Class IV soils are generally considered to be productive, but not prime. The Class V through VIII soils are also productive, but are not considered to be prime because of slopes in excess of 8 percent or other characteristics. Although there are no active agricultural areas within the City of Westminster, this information is also useful for development, as mentioned above. Approximately 63 percent of the land area within the Westminster corporate limits contains Class I, II, or III soils, and another 22 percent of the soils are Class

IV. Only 15 percent of Westminster is characterized by Class V through VIII soils, which may require special development techniques to minimize environmental impacts.

Part 4: Water Resources

Section 1: Surface Hydrology

The Westminster Community Planning Area is located on a watershed divide. The southeastern portion of the Westminster CPA drains into the Patapsco River basin, and the northwestern segment drains into the Middle Potomac River basin (which includes the Monocacy River) via Big and Little Pipe Creeks. Since Westminster is located on a watershed divide, the headwaters of most of the streams that flow through the CPA are located within the CPA. Additionally, due to the area's complex topography, numerous small sub-watersheds are located throughout the Westminster CPA.

The Westminster CPA contains a relative abundance of major streams and tributaries. The portion of the CPA to the southeast of Parr's Ridge and Dug Hill Ridge drains to the North Branch of the Patapsco River, which in turn drains to Liberty Reservoir located downstream of Westminster. Streams which traverse the CPA within this watershed include West Branch (also known as Hull Creek; traversing 4.5 miles within the CPA), Cranberry Branch (which drains to Cranberry Reservoir, a major component of the City of Westminster's community water supply system; 2.3 miles), Beaver Run (2.7 miles), Middle Run (0.8 mile), and Little Morgan Run (1.5 miles).

The area northwest of Parr's Ridge and Dug Hill Ridges includes two major watersheds which drain to the Monocacy River: Big Pipe Creek (northwest of Dug Hill Ridge) and Little Pipe Creek (northwest of Parr's Ridge). Little Pipe Creek (4.2 miles) and Cops Branch (2.7 miles) are the two major streams within the Little Pipe Creek drainage area which traverse the Westminster CPA. Meadow Branch of Big Pipe Creek (1.9 miles) is the sole major stream within the Big Pipe Creek watershed, which traverses the CPA.

The streams and tributaries of the Little Morgan Run, Beaver Run, and Middle Run, generally located in the southeast portion of the Westminster CPA, are classified as Use III-P streams (natural trout streams which also drain to public water supplies). These three streams comprise a portion of the North Branch of the Patapsco River drainage area, which flows to Liberty Reservoir. The other streams in the Westminster area are Class IV-P (recreational trout streams which also drain to public water supplies).

The numerous streams that traverse the Westminster CPA generally have steeply sloping banks. Consequently, the corresponding flood plain areas are relatively steep and narrow. Non-tidal wetlands are sparsely dispersed in the Middle Potomac River basin, but are more abundant in the Patapsco River basin.

Section 2: Geology and Subsurface Hydrology

The Westminster Community Planning Area is underlain by a variety of rock types. Schist, phyllite, metavolcanic rocks, and carbonate rocks trend in north-northeast to south-southwest bands across the area. Ridges are primarily formed by relatively resistant areas of Marburg phyllite. Marburg schist underlies areas to the southeast of Westminster and forms hilly terrain with narrow, steep-sided valleys. Low rolling hills and some valley areas (Bachman Valley) are generally underlain by metavolcanic rocks (schist and basalt) of the Bachman Valley and Sam's Creek formations. Low-lying areas of the Westminster area are frequently underlain by lenses of Wakefield Marble carbonate rocks. These underlie the Wakefield Valley and occur in central portions of the Westminster area as very narrow and elongated bands. Carbonate rocks are often closely associated with the metavolcanic rocks of the area.

Phyllite, which underlies a significant portion of the Westminster area, is resistant to weathering and forms a relatively thin saprolite. Groundwater development potential is limited as a source for public water supply in this hydrogeologic unit. A large area covering the southeastern portion of the city is underlain by the schist saprolite-type aquifer. The weathered zone locally extends to depths of greater than 100 feet and has good groundwater development potential where sufficient permeability and saturated thickness exists. Metavolcanic rocks, which occur in bands through the Westminster area, will have locally weathered zone thicknesses of well over 100 feet and very good groundwater development potential. Carbonate rock lenses are found primarily in the areas to the west of the City. These occur as northeast-to-southwest trending bands and have excellent groundwater development potential. The lenses are bounded by less permeable rocks such as phyllite and schist, which limit both areal drawdown and groundwater availability. The lenses, or bands, of carbonate rock are susceptible to contamination. Sinkholes have been associated with groundwater withdrawals in the Wakefield Valley.

Section 3: Community Water Supply

The City of Westminster owns and operates the community water system serving the municipality and a large amount of the Community Planning Area. The system relies on the Cranberry Reservoir and groundwater supplies to provide sufficient supply to it. Eleven wells currently provide groundwater to the water system, and several of these wells are located within the carbonate rock. The City continually searches for additional groundwater supplies, typically through the development of newly annexed lands. Carbonate rock formations are prolific in providing larger quantities of water than many other types of hydrogeologic formations, but they are also more susceptible to contamination.

Part 5: Forested Areas

Forested areas are dispersed throughout the Westminster Community Planning Area and tend to concentrate along steep-sloped areas, including the steep slopes bordering stream valleys. Sizable

forested areas are located on the southeast side of Maryland Route 31 and Avondale Road and along the West Branch stream valley, and function as connected wildlife corridors.

Part 6: Sensitive Areas

The sensitive areas required for study by the Planning Act of 1992, as well as the additional natural resources identified as sensitive by Westminster and Carroll County are described in detail below. Protection measures for these natural resources will be dealt with on a case-by-case basis through the development review process and in accordance with the goals, objectives, and recommended actions in the Plan Implementation chapter of this document.

Section 1: "Sensitive Areas" Definitions

The Planning Act of 1992 does not specify the extent or degree of protection to be accorded to each environmental resource. Therefore, the definitions developed for each environmental resource identify the level of protection. This chapter includes definitions both for the "sensitive areas" required to be protected under the Planning Act as well as the additional environmental resources identified as "sensitive" by the City.

The environmental resources, which are required to be protected under the Planning Act, are streams, stream buffers, steep slopes, 100-year floodplains, and habitats of threatened and endangered species. They are defined as follows:

1. "Stream" means part of a watercourse, either naturally or artificially created, that contains intermittent or perennial base flow of groundwater origin. Ditches that convey surface runoff exclusively from storm events are not included in this definition.
2. "Stream buffers" are areas that extend a minimum of 100 feet from the top of each stream bank along both sides of a stream unless modified by the Planning Commission.
3. "Steep slopes" are defined as areas with slopes greater than 25 percent.
4. The "100-year floodplain" is that land typically adjacent to a body of water with ground surface elevations that are inundated by the base flood, which is the 100-year frequency flood event as indicated in the Flood Insurance Study, as amended, the elevation of which is used for regulatory purposes.
5. "Habitats of threatened and endangered species" are areas which, due to their physical or biological features, provide important elements for the maintenance, expansion, and long-term survival of threatened and endangered species listed in COMAR 08.03.08. This area may include breeding, feeding, resting, migratory, or overwintering areas.

Physical or biological features include, but are not limited to, structure and composition of the vegetation; faunal community; soils, water chemistry and quality; and geologic, hydrologic, and microclimatic factors.

Section 2: Additional Environmental Resources

The County and municipalities have identified additional environmental resource areas that they feel are worthy of protection under the Environmental Resources & Protection Element as well. These resources include wetlands, wellhead buffers, carbonate rock areas, reservoir watersheds, and Use III waters.

1. "Wetlands" (defined under COMAR, Title 08.05.04.01) are generally areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions, commonly known as hydrophytic vegetation.
2. "Wellhead buffers" are areas which extend a minimum of 100 feet around any existing or proposed community water supply well or well site, unless modified by the Planning Commission, as may be designated on the adopted Water and Sewer Master Plan or the County Comprehensive Plan, or identified during the development process.
3. "Carbonate rock areas" are areas that are currently known or suspected to be underlain by carbonate rock. This includes the Wakefield Marble and Silver Run Limestone geologic units, as well as unnamed calcareous zones within schist and phyllite areas.
4. "Reservoir watersheds" are areas which drain into an existing or proposed water supply reservoir.
5. "Use III waters" (defined under COMAR, Title 26.08.02) are protected for the propagation of natural trout populations. These waters are governed by more stringent dissolved oxygen, chlorine, and temperature standards than other waters.

Section 3: Streams

Carroll County is located in the Piedmont region of north-central Maryland. Parr's Ridge, which runs through the City of Westminster, diagonally divides the County into two major drainage basins. Streams to the north and west drain into the Monocacy River and eventually the Potomac River. Streams to the south and east flow into the Patapsco and Gunpowder Rivers towards the Chesapeake Bay. These two major drainage basins contain many miles of streams in Carroll County. Their uses range from recreational uses, such as fishing and canoeing, to agricultural uses. Every stream in the County eventually feeds into the Chesapeake Bay and contributes to its water quality and ecological health.

Overall surface water quality in Carroll County is generally good; however, incidence of fecal coliform bacteria from animals and human sources occur quite frequently. Large dairy and livestock farms have a high potential for contributing pollutants into surface waters if Best Management Practices are not followed. However, failing septic systems are the primary source of high fecal coliform levels in some areas of the county.

Healthy streams contain a diversity of characteristics, including slow-moving runs, deep pools, gravel riffles, bends, and vegetative cover. These features have a direct effect on the stream's response to rainfall and the level and consistency of flows. These features are also essential to the overall water quality of a stream. Stream water needs to contain sufficient dissolved oxygen and provide suitable temperatures in order to serve as a habitat for plants and animals. Stream acidity and alkalinity should be balanced, the water should be clear of sediment and pollutants, and dissolved minerals should be in natural proportions. Changes in natural ground cover and the intensity of use of the land have the greatest effect on the quality of streams. Increase in the amount of impervious surfaces and a decrease in vegetation result in altered and inconsistent levels of flow. High flows may cause flooding, and subsequently, the banks along the streams to cave in. High flows may also cause stream beds to widen as mud and sand deposits fill the channel as the bank erodes away. Low flows may cause parts of stream beds to dry up for periods of time. Low flows also carry higher concentrations of pollutants.

Section 4: Stream Buffers

Stream buffers are the areas on either side of a stream which create a corridor of natural vegetation along a stream's course and which contribute to stream water quality. Buffers often include areas of the floodplain, wetlands, and/or forest. These corridors are considered buffers because they help to buffer the streams from erosion and sedimentation and filter out pollutants. Many of Carroll County's streams are part of the watershed areas for existing and proposed reservoirs. Therefore, maintaining and/or improving the quality of this water is critical. The riparian vegetation and other features of natural buffers have been eliminated from many of the streams in Carroll County. Property owners often remove vegetation, add fill dirt, and plant and mow grass up to the stream's edge. Many streams that run through pastures have had their riparian vegetation damaged or destroyed by livestock.

Stream buffers protect the biologic and hydrologic integrity of the stream basin. They minimize runoff and groundwater pollution by filtering pollutants through the soil and root zone. Undisturbed buffers protect wetland and upland plants and provide a corridor for food and cover to a variety of animals. Wetlands and floodplains within a stream buffer slow storm flows and dissipate flood water energy, allowing more of the water to percolate into the ground. The result is decreased flood damage and replenished groundwater aquifers. Without naturally vegetated buffers, more runoff and pollutants reach the stream carrying greater levels of sediment. Riparian vegetation increases soil stability and provides shade that cools stream waters. Interception of rainfall by trees and shrubs helps to maintain more consistent stream flows by reducing the amount of stormwater runoff before it begins.

Wooded areas in stream buffers are ideal for many reasons. They protect watersheds from the siltation and erosion resulting from heavy runoff or wind. The forest floor filters water percolating into groundwater reservoirs, while leaves on the trees also absorb air pollutants. Trees and shrubs prevent some of the adverse impacts to sensitive areas caused by rainfall by intercepting some of the rainfall before it reaches the ground. Evapotranspiration allows some of this intercepted water to evaporate while the trees utilize some of the water during photosynthesis. These woodlands also serve to provide visual and noise buffers between various land uses. Woodlands also provide habitat for wildlife. For these reasons, natural vegetation within stream buffers should not be disturbed unless necessary, such as allowing disturbances for utilities and road crossings, and where appropriate, allowing the development of stormwater management facilities, particularly outfalls and water quality ponds.

Section 5: 100-Year Floodplains

Land designated within a 100-Year Floodplain carries a 1% chance in any one year that flood levels could reach or exceed the base flood elevation. Floods of this magnitude could be experienced more than once in the same year or possibly only a few times in a century. Many of these floodplains can be identified for protection through use of the Federal Emergency Management Agency's Flood Insurance Rate Maps (FIRMs) and Flood Insurance Study (FIS) maps. These maps often identify the 10-, 25-, and 50- year floodplains as well. The 100-Year Floodplain has not yet been mapped for all streams in the City.

Historically, floodplains have been protected to guard against injury to people and to prevent destruction of property. However, protection of floodplains brings other benefits too. Floodplains moderate and store floodwaters, absorb wave energies, and reduce erosion and sedimentation. Risks to adjoining and downstream communities are also minimized. They also contribute to the improvement of water quality and quantity, which may have a positive effect on drinking water supplies. Any type of development or filling in floodplains may cause the natural level of floodwaters to rise, impacting additional local areas as well as areas downstream. Interference with the natural fringe of the floodplain also results in the destruction of habitat for hydrophytic vegetation.

As a result, it is appropriate to protect floodplains by not permitting new buildings or site improvements, such as parking lots, to be located in the floodplain. In planning for new development on land that is impacted by the 100-year floodplain, the layout and size of new lots needs to assure that sufficient area on the parcel is available for development outside of the floodplain. The lot itself may be platted within the floodplain, provided that the floodplain area would remain unimproved. Furthermore, it would be inappropriate to enlarge existing structures or site improvements located within floodplains. Any existing buildings or structures that are currently located within the floodplain should be relocated outside of the floodplain when feasible.

Section 6: Habitat of Threatened and Endangered Species

In Maryland, over 200 plant and animal species have been extirpated over the past 350 years. Habitat destruction and degradation threatens to extirpate at least another 413 native Maryland species. The key to protecting threatened and endangered species is protecting the habitat in which they occur. Westminster currently has no identified threatened or endangered species, as identified by the Maryland Department of Natural Resources, Heritage and Biodiversity Conservation Programs. In the event that threatened or endangered species or related habitat areas are identified in the future, the City will need to prepare a plan for protection and mitigation for such species and habitat areas.

There are many reasons for protecting this habitat. We now know that plant chemicals have major pharmaceutical uses. Agriculture depends on the development of new varieties of crops that fend off pests and diseases. In addition, it is the responsibility of the present generation to preserve species for the benefit of future generations. Every plant and animal species plays a special role in the effective and efficient function of the biota in which it lives, as well as the ecosystem as a whole. Loss of one species will result in loss of additional species that depend on each other for survival, and upset the balance of the food chain. This imbalance may also cause proliferation of less desirable species.

Section 7: Steep Slopes

Westminster's rolling terrain presents occurrences of steep slopes. These slopes contribute to the beauty that makes Westminster and surrounding Carroll County especially scenic. However, steep slopes also present a challenge to developers in designing buildings and subdivisions, as well as in protecting the immediate and adjacent areas during construction.

Slopes provide a medium for the movement of soil and pollutants when land disturbance occurs. Therefore, there are multiple reasons for protecting steep slopes. Preservation of slopes adjacent to waterways is especially important due to the potential impact on water quality and aquatic habitat.

The City development regulations require topographic and soils information to be shown on plans submitted for development approval. The location of steep slopes and erodible soils is considered during the development plan review and approval process conducted by staff and the Westminster Planning and Zoning Commission. Development on slopes in excess of 25 percent, or 15 percent with highly erodible soils, should be avoided unless it can be demonstrated that the stability of the slope will be improved or that adverse impacts will be mitigated.

Clearing, grading, and the development of land results in increased stormwater runoff, which accelerates erosion and results in the runoff transporting more sediment to streams. Increased sediment in streams may create channel bars, contributing to erosion of stream banks, as well as making the channel wider and shallower. Increased runoff and sedimentation also results in decreased water quality. Nutrients in the soil sediments are carried downstream. Upslope soils are impoverished, while

turbidity, sedimentation, and aggravated eutrophication are occurring in the receiving waterways. Sediment also contains heavy metals, pesticides, and other pollutants. Aquatic vegetation is destroyed by scour, burial, and turbidity caused by increased sediments. The destruction of vegetation decreases photosynthetic activity, thereby reducing oxygen levels for aquatic life. Trout are also sensitive to impacts from sedimentation. Trout eggs suffocate from siltation, and the inhalation of silt particles results in gill membrane inflammation and then death. In addition to the increased potential for erosion, steep slopes that are altered contain less efficient organisms and less efficient vegetation.

Section 8: Wetlands

Wetlands are often associated geographically and biologically with streams and floodplains. There are many non-tidal wetland areas found in the County, as well as in the corporate limits of Westminster. These wetlands and their function are threatened by the adverse impacts of development.

Wetlands serve an important function in maintaining quality and quantity of water supplies. In wetlands, inorganic nutrients are converted to organic materials and stored in the hydrophytic vegetation. Stems, leaves, and roots slow the flow of runoff entering the wetland area thereby allowing sediment to settle out and be deposited in the wetlands prior to the runoff reaching stream waters. Wetlands also have a positive impact on the quantity of water, functioning as natural stormwater management facilities. They absorb and retain water, slowly discharging it into the streams. Therefore, stream flows are maintained at a more consistent level during dry periods, as well as during periods of flooding. Water collected and stored in wetlands also filters down through the soil to recharge groundwater supplies. Wetland areas provide essential habitats to a wide variety of flora and fauna, including migrating waterfowl and certain hydrophytic plants found only in wetland areas.

Destruction of wetlands results in higher, faster, and dirtier runoff flows into streams when development occurs too close to a wetland. The wetland is unable to absorb the increased level of pollution coming from the development site. Stream eutrophication occurs at an accelerated rate when the wetland becomes overloaded with nutrients and pollutants, often resulting in a settling basin of polluted water with unpleasant odors. Since water is stored in wetlands, filling these areas not only causes stream flows to be higher than normal but may also cause water to collect in new areas. Wetlands also serve to reduce turbidity. Increased stream turbidity, defined as particles suspended in water, reduces the amount of sunlight reaching aquatic plants. Therefore, when the function of wetlands is impaired, or they are destroyed, aquatic plants in the stream are adversely impacted.

Section 9: Wellhead Buffers

The availability of potable water is a major concern for the City of Westminster and throughout Carroll County. The quality of water supplies is dependent upon the land use activities that occur within the watershed and aquifer recharge areas. With the contamination of several wells in Taneytown, Westminster, and Hampstead in recent years, it became apparent that the areas around the municipal wellheads were in need of protection. The County is highly dependent on the abundant supply of

groundwater found in many parts of the County. Municipal water supplies, serving a large percentage of the population, rely on and are drawn from these groundwater aquifers.

A wellhead protection area is the surface and subsurface area surrounding a water well or well field, supplying a public water system, through which contaminants are reasonably likely to move toward and reach such water well or well field. The wellhead provides direct access to the groundwater aquifer from which water is drawn, potentially conveying contaminants to the groundwater quicker and in higher concentrations and then withdrawing the water at the same site. Groundwater can become contaminated by many hazardous materials, such as pesticides, fertilizers, organic chemicals, and human wastes. The degree of contamination depends on soil characteristics, contaminant characteristics, groundwater flow, and other factors. Once contaminated, aquifers are difficult and expensive to clean up. Drilling new wells may not be feasible as many aquifers are large in size or interconnected, thereby spreading the contamination to a large area. Protection of wellheads is essential to maintaining water quality for human consumption and environmental health.

Section 10: Carbonate Rock Areas

The carbonate rock areas of Carroll County include the Wakefield Marble and Silver Run Limestone geologic units, as well as calcareous zones found in schist, phyllite, and metavolcanic rock areas, as shown in the Phase II Report, *Carroll County Water Resources Study* (Volume 1, R.E. Wright Associates, Inc, May 1988). Carbonate rocks constitute the primary supply aquifers for the Towns of Union Bridge and New Windsor, as well as the Westminster Wakefield Valley satellite system. Carbonate rocks form the most productive and environmentally-sensitive aquifers in Carroll County. The carbonate minerals in this type of aquifer are readily soluble in groundwater, and joints and fractures may be greatly enlarged to form cavities. Carbonate rocks are frequently bounded by, and imbedded with, schist, phyllite, or metavolcanic rocks. Aquifer transmissivity and storativity in the carbonate rock aquifers is generally fairly high in this area. The variable transmissivity, the presence of plugged and open solution channels, frequent boundary conditions, and complex geologic structure make the hydrology of carbonate rocks extremely complex and frequently unpredictable. The carbonate rock aquifer is very susceptible to contamination, since the presence of voids in the subsurface does not allow adequate filtering of contaminants. In addition, the high transmissivity allows the rapid spread of contaminants throughout the highly conductive flow paths in these types of aquifers.

According to an R. E. Wright report, due to the solution-prone nature of the aquifer materials, sinkholes are a common feature of this terrain and provide a direct conduit into the groundwater system through which contaminants may travel. Sinkholes have and will occur naturally, although studies have shown that the majority of sinkholes formed today are triggered as a result of human activities, such as groundwater withdrawals. Sinkhole development is exacerbated by water table fluctuations, concentrated infiltration, and/or vibration. Sinkhole development begins deep in the subsurface in solution channels and fractures in the carbonate aquifer. As these channels are enlarged by dissolution and the remaining insoluble materials are compacted or flushed out, small voids are created. This may

begin a "stopping" effect in the soils in the dissolved areas above, as soil particles continuously move downward. Temporary soil bridges are formed in the solutioned areas between unweathered rock pinnacles, and collapse as the void area moves upward. Depending upon the rate of downward soil movement, this may be evident on the surface as a slow subsidence or sudden collapse.

Section 11: Reservoir Watersheds

A watershed includes all areas from which water drains into a body of water--in this case, a reservoir. Wooded areas and other types of vegetation in these watersheds directly affect water quality and need to be protected as well. A major source of water for the City of Westminster is the Cranberry Branch, a tributary to the West Branch of the Patapsco River. The City's raw reservoir is located north of Lucabaugh Mill Road, and a 30-inch transmission line runs along Cranberry Branch from the reservoir to the water treatment plant in Cranberry. In the same vicinity, the City also extracts surface water from Hull Creek, another tributary to the West Branch of the Patapsco. The City's surface water resources are adversely affected by upstream agricultural uses that increase nutrients in the stream due to stormwater runoff carrying fertilizers and other nutrients. Furthermore, runoff from the County's Lucabaugh Mill Road directly enters Hull Creek without any stormwater quality control.

In addition to the City's reservoir, Carroll County currently has two other existing reservoirs, which are Piney Run and Liberty reservoirs. The County has also identified two additional reservoir sites to accommodate the water supply needs of County residents in the future. These sites are Gillis Falls and Union Mills Reservoirs. Liberty Reservoir is a 3,106-acre water supply reservoir on the North Branch of the Patapsco River that serves the Baltimore Metropolitan area and Carroll County's Freedom Community Planning Area. Liberty Reservoir Watershed encompasses 11,393 acres in the County and is 8.25 miles long. Portions of eastern Carroll County also fall into the reservoir watershed of two reservoirs located in Baltimore County--Pretty Boy and Loch Raven Reservoirs.

Although the water has been identified as threatened by nutrient enrichment, water quality is otherwise generally good. Many of Carroll County's streams are components of these watersheds which directly affect the quality of the water supply.

Section 12: Use III Waters

Carroll County has several waterways which have been identified as Use III waters. These streams, which are protected for the natural propagation of trout, include all or part of the following streams and all of their tributaries: Gunpowder Falls, Morgan Run, Beaver Run, Snowdens Run, Stillwater Creek, East Branch Patapsco River, Carroll Highlands Run, Autumn Run, Piney Run, Gillis Falls, Aspen Run, and South Branch Patapsco River (above the confluence with Gillis Falls). The first nine of these streams are further classified as III-P, which means that they flow into a public water supply. As a result, Use III-P streams are regulated even more strictly on toxics than other Use III waters. The remaining streams in the County are Use IV (Recreational Trout Waters) or Use I (Water Contact Recreation and Protection of

Aquatic Life). Fishing is an important recreational use of these streams. The presence and health of fish can be an important indicator of water quality.

Part 7: Environmental Stewardship Programs

The U.S. Environmental Protection Agency (EPA) Innovation Action Council (IAC) has articulated a vision and definition of environmental stewardship to guide the EPA's Strategic Plan. EPA's vision of environmental stewardship is that all parts of society actively take responsibility to improve environmental quality and to achieve sustainable outcomes.

The definition of environmental stewardship is the responsibility for environmental quality shared by all those whose actions affect the environment, reflected as both a value and a practice by individuals, companies, communities, and government organizations. Positive stewardship behavior demonstrates acceptance of this responsibility through the continuous improvement of environmental performance to achieve measurable results and sustainable outcomes.

The City of Westminster develops local environmental programs and promotes partnerships with local and state environmental organizations to implement environmental stewardship programs in the Westminster community.

Section 1: Environmental Partnerships

This Environmental Resources and Protection Element is focused on reducing any additional adverse impacts on the environment as the County and municipal land use plans are implemented. There are several other programs, either ongoing or under development, which function to reduce problems created by current land use practices. These programs include the Natural Resources Conservation Service (NRCS), Soil Conservation District (SCD), and Extension Services working with farmers to institute Best Management Practices (BMP) to reduce pollution, design the local water resources programs to protect local public water supplies, and the State's Tributary Strategies.

Section 2: Westminster Energy Efficiency Plan

Following recent trends dictated by rising energy costs, the City has begun to evaluate energy consumption in all areas of operation. Committees have been formed to research and develop recommendations regarding fuel and electricity consumption. The City is also seeking grant funding and low-interest loans to implement these recommendations. In the coming years, the plans are to continue to research and, where feasible, implement the best available practices in energy conservation.

Past Initiatives

In 2006, Westminster purchased two hybrid Ford Escape SUVs to replace one vehicle in the Public Works Department and one in the Police Department whose useful service lives had long ago expired. Each

vehicle is currently getting approximately twice the gas mileage of the vehicle it replaced. In 2009, Westminster made modifications to the wastewater treatment process, eliminating the need to run certain high-consumption equipment. The wastewater treatment plant now consumes 30% less electricity than it previously used.

Future Initiatives

To plan future energy efficiency programs, the City organized an Energy Committee to study the City's use of vehicles and energy consumption. The committee's first recommendation was to conduct an energy audit. As a result, during the summer of 2009 the City hired a consultant to perform energy audits for all City-owned buildings. The result of the audit will be to formulate a plan for upgrades to these buildings, prioritized based on return on investment and amount of energy conserved. Zero-interest loan funding has been obtained to begin implementation of the Westminster Energy Efficiency Plan. Grant funding for additional Energy Efficiency Plan implementation and further conservation measures will be sought on an ongoing basis. Westminster is working on a policy that requires the City to replace City vehicles, following the pre-determined replacement schedule, with the most efficient vehicle available, taking into account cost and daily use factors.

As the City grows in the future, Westminster will encourage all new construction to be as efficient as is technologically and practically possible. When City owned-buildings have to be improved, expanded upon, or rebuilt in the future, Westminster will require that the construction coincides with energy efficiency upgrades. Westminster will also promote energy efficiency to the community by providing educational materials to homeowners and businesses regarding Best Practices for energy efficiency in their respective applications.

Section 3: Urban Canopy

The City of Westminster Tree Commission (WTC) is charged with overseeing the City's urban forestry program. This commission consists of five appointed members and two City staff (City Arborist and Natural Resources Planner). The benefits of maintaining an urban canopy are numerous, and include increased property values, increased commercial activity, reduced impact on the storm water system, wildlife habitat, and reduced cooling costs in shaded buildings. Through the Street Department's operating budget, the City allocates money annually to pay for contractual services to maintain the urban canopy. Going forward, the City plans to utilize the expertise of the Tree Commission and its staff to reinforce and improve this program.

Westminster Tree Commission

The WTC has successfully conducted sixteen annual Urban and Community Forestry workshops, which have provided training and education to tree care professionals from across the State of Maryland. The City of Westminster adopted an ordinance prohibiting the topping of any tree within the corporate limits based on recommendations from the WTC. The WTC is well known for its Arbor Day activities that it has implemented each of the last 20 years. This program has resulted in trees being planted on every

school property and park in the City. Throughout the year, WTC works with residents through cooperative planting projects with neighborhoods throughout the City, focusing on efforts to replace or install street trees. WTC is honored to have supported the City of Westminster to maintain Tree City USA certification since 1988, and to earn the Tree City USA Growth Award 12 of those years. The Tree City USA Growth Award is provided by The Arbor Day Foundation, in cooperation with the National Association of State Foresters and the USDA Forest Service, to recognize environmental improvement and encourage higher levels of tree care throughout America.

Future Initiatives

In the future, Westminster plans to perform a complete update of its 1992 inventory of trees on public property and right-of-ways. The Tree Commission will partner with City Staff to draft and implement a comprehensive Urban Canopy Management Plan to promote the importance of the urban canopy of Westminster and how the public may contribute to the “Maryland 1 Million Tree Initiative.” The Westminster Landscape Manual will be revised to include the current best management practices in urban canopy management, arboriculture, integrated pest management, water conservation, and aesthetics.

Section 4: Open Space & Natural Landscapes Conservation

The City of Westminster owns 136 acres of parkland and over 400 acres of open space are owned by local Home Owners Associations (HOAs) or are designated private open space land. Of the 136 acres of City parkland, 82 acres are public open space. This open space is land that has been set aside by developers or that the City has acquired for resource or sensitive area protection. Roughly half of this land is in turf grass, while portions are forested. In order to reduce mowing requirements, better protect natural resources, and provide wildlife habitat, Westminster encourages turf areas to be reforested or converted to wildflowers and native grasses wherever possible (Map 6.2).

Native Plantings & Natural Landscapes

As an example to developers and other property owners, the City plans to incorporate native plant species into all landscapes on City properties. Since native species have evolved in the conditions present in the Piedmont region of Maryland, they are best suited for the seasonal extremes in this area. Landscapes consisting of native species require less watering and soil amendment, survive harsh winters and droughts, and are resistant to regional pests and diseases. In June 2009, Westminster created its first Xeriscape Model Garden on Main Street to educate residents on the benefits and beauty of drought-resistant and native plant species.

Community Gardens

The City of Westminster is proud of its established community gardens that are located on public open space. Each spring, the Public Works staff prepares the garden plots for the planting season. Spaces in

the garden are offered to residents for free, on a first-come, first-served basis. Most years, all plots are claimed by the time the growing season begins, with gardeners cultivating everything from tomatoes and peppers to sweet corn and herbs. In coming years, City staff plan to improve the program by adding educational programs for gardeners and working with the local Master Gardeners Club to promote the benefits of gardening to the community. In 2010, the City will conduct a study examining City parkland and open space for opportunities to add new community garden plots.

Section 5: Recycling Programs

In order to encourage recycling, the City of Westminster has worked to create opportunities that make recycling easier and more convenient. For example, as of July 1, 2008, the City of Westminster improved residential recycling collection services by switching from dual-stream collection to single-stream. This change allows residents to mix all recyclable items (glass, cardboard, aluminum, paper) into one bin instead of having to sort each material into separate containers. The most recent Westminster recycling initiative is the creation of an electronics recycling program. In June 2009, the City of Westminster received a grant from the Maryland Department of the Environment (MDE) under the Statewide Electronics Recycling Program, to help fund the start-up of this important program.

In August 2009, Westminster established a mobile electronics waste recycling center known as the Westminster Initiative to Recycle E-waste Drop-off Center (W.I.R.E.D. Center). The W.I.R.E.D. center is used as a mobile electronics waste recycling center for the residents of Westminster. Providing residents with a location to drop off electronics waste allows the City to separate the collection of computers, video display devices, and other forms of electronic waste from the regular bulk trash, which will reduce the amount of trash entering the landfill. The W.I.R.E.D. center also provides the City the opportunity to properly recycle or dispose of the electronic waste. In order to promote this new program and to encourage residents to participate, City Staff plan to work to make the drop-off day into an event to attract positive attention and publicity. Staff would seek the support from local organizations to provide volunteers who would be able to participate in the “W.I.R.E.D.” program.

Section 6: Sustainable Westminster & Green Building Standards

The International Institute for Sustainable Development (IISD) champions sustainable development around the world through innovation, partnerships, research, and communications. The IISD defines sustainable development as environmental, economic, and social well-being for today and tomorrow. Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. The 2009 Comprehensive Plan encourages sustainable construction, energy efficient design, and the orderly development of the future of Westminster. The City of Westminster has a limited supply of water resources and, as a result, has been promoting water conservation techniques since 2002. In order to meet future water needs and to create a more sustainable City, Westminster is developing a set of “green” building standards.

The Westminster Green Building Standards will be guidelines to facilitate “green” buildings without forcing excessive costs on developers, owners, or occupants. The standards will be part of an overall “green” building program and that promotes energy efficiency, conservation of water, indoor air quality and recycling of waste in all residential buildings and structures in Westminster. The City envisions a future where new construction incorporates “green” building principles and practices into the design, construction, and operation of new buildings and neighborhoods. The Westminster Green Building Standards will serve to not only meet the City’s overall objective to conserve water, but it will also help educate the public about the State of Maryland’s environmental goals and initiatives.

Part 8: State Environmental Programs

The City of Westminster will continue to promote State and local environmental stewardship programs and partnerships in order to create a more sustainable environment for future generations.

Section 1: Greenhouse Gas Reduction Act of 2009

The Greenhouse Gas Reduction Act of 2009 requires the State to achieve a 25 percent reduction in statewide greenhouse gas (GHG) emissions from 2006 levels by 2020. It also requires the Department of Environment to develop a proposed Statewide GHG reduction plan by 2011, to solicit public comment on the proposed plan from interested stakeholders and the public, and to adopt a final plan by 2012. The bill also requires the State to demonstrate that the 25 percent reduction can be achieved in a way that has a positive impact on Maryland’s economy, protects existing manufacturing jobs and creates significant new “green” jobs in Maryland. Transitioning to a low-carbon economy is expected to have a positive net economic benefit to the State, valued at approximately \$2 billion by 2020 as the result of savings from energy efficiency and conservation programs and new “green” job opportunities in the energy, carbon technology, and related sectors of the economy. The City of Westminster will review the completed plan and incorporate it into the Westminster Energy Efficiency Plan.

Section 2: One Million Tree Initiative

The State of Maryland recognizes that forests are a strategically important natural resource for all communities. Trees protect water quality, clean our air and provide wildlife habitat. One large tree can eliminate 5,000 gallons of stormwater runoff each year, and well-placed trees can help reduce energy costs by 15 to 35 percent. Trees also enhance our quality of life, beautify neighborhoods and highways, provide sound barriers and shade, and help increase property values. The State of Maryland is partnering with businesses, communities, and citizens to help fund and plant new tree cover throughout the State. State agencies are working to plant 1 million new trees by 2011, and private citizens have been charged with joining the State’s efforts by planting 50,000 trees by 2010.

Environmental Resources & Protection Element

The 2009 Comprehensive Plan promotes efforts to protect, maintain, enhance, and, where appropriate, restore its natural environment. Westminster plans to implement more sustainable practices, including “green” building technologies in order to ensure a more sustainable future. The Environmental Resources and Protection Element presents ideas how Westminster can balance growth with protecting the environment, how to resist threats to its overall quality, and, most importantly, how to act, maintain, and enhance its positive features in the interest of residents, workers, and visitors.

Goals and Objectives

Goal R1: Protect and maintain the environmental resources in the City of Westminster

Objective 1: Maintain and enhance water quality in streams, groundwater, wetlands, and reservoirs

- a. Require buffer plantings where no vegetation exists around streams, wellheads, wetlands, and reservoirs to protect water from development
- b. Discourage disturbance to natural vegetation within stream buffers including tree removal, shrub removal, clearing, burning, or grubbing
- c. Require new development to incorporate stormwater management facilities that reduce heavy runoff, minimize pollutants entering local streams, and are consistent with protection of the designated water use as defined in COMAR 26.08.02
- d. Analyze the nutrient loadings and quality of streams to determine the need for stream restoration
- e. Adopt a water resources management ordinance

Objective 2: Maintain and enhance water quantity in groundwater aquifers and reservoirs

- a. Require wellhead buffers and reservoir buffers to protect water supplies from development
- b. Continue monitoring of the public water supply, utilizing new technology as it becomes available
- c. Require water conservation through implementation of February 2008 recommendations by Water Resources Coordinating Council (WRCC)

Objective 3: Preserve where possible and improve wildlife corridors, identified habitats of threatened and endangered species, and contiguous forested areas

- a. Preserve existing forested areas as much as practical
- b. Require reforestation or afforestation that will most benefit natural habitats
- c. Work with Carroll County Bureau of Resources Management to identify areas suitable for afforestation in watersheds affected by City development
- d. Require submission of a written Environmental Assessment for any development proposal within or adjacent to identified threatened or endangered species habitat or water resources
- e. Coordinate the protection of identified threatened and endangered species habitat with the Maryland Wildlife and Heritage Service of the Department of Natural Resources

Objective 4: Identify the location of environmental resource areas in order to improve their protection

- a. Utilize the City's GIS as a source for environmental resource mapping
- b. Continue to identify and map resources as the City annexes land and develops
- c. Coordinate with County Staff and the Department of Natural Resources to utilize existing mapping to reduce cost and provide more accurate information to each jurisdiction

Goal R2: Reduce the adverse effects of development on environmental resources

Objective 1: Adopt and implement creative, flexible, and streamlined development regulations that protect the natural environment

- a. Identify locations where a Planned Development and its associated open space could be used to protect environmental resources
- b. Streamline the rezoning process for Planned and clustered Developments
- c. Review the Planned Development Zoning to determine whether there is sufficient flexibility in the area and setback requirements for the zoning district

Objective 2: Integrate Best Management practices and appropriate mitigation measures where sensitive environmental areas cannot be avoided during the land planning and development process

- a. Revise Subdivision and Site Plan Regulations as needed to include Best Management practices and mitigation measures
- b. Encourage the use of innovative mitigation measures when sensitive environmental areas cannot be avoided
- c. Review the manual for construction of roads to consider if changes should be made to better protect environmental resources

Objective 3: Protect streams and their buffers, minimize flood hazards, provide open space, and provide protection for other environmental resource areas through creative site design

- a. Develop design guidelines that will achieve this objective
- b. Protect the City water resources and encourage the use of the City's Planned Development Zone

Objective 4: Adopt and implement innovative environmental resource design guidelines

- a. Research existing environmental resource design guidelines used by other communities before developing draft guidelines
- b. Consider the environmental resources that are located in the Growth Area Boundary on sites with annexation potential so that protection measures are considered during review of any annexation petitions

Objective 5: Assure the quality and quantity of community groundwater supplies through wellhead protection measures.

- a. Complete the actions that address the protection of water resources
- b. Extend protection measures to planned wellheads
- c. Implement recommendations in the Water Resources Element

Goal R3: Coordinate efforts with Westminster environmental partners and local organizations to protect environmental resources

Objective 1: Develop and implement a coordinated natural resource protection strategy

- a. Participate in initiatives that would achieve this objective
- b. Coordinate with the County when considering the adoption of environmental resource regulations or guidelines

Objective 2: Standardize protective measures between the jurisdictions to ensure uniform protection.

- a. Participate in initiatives that would achieve this objective
- b. Coordinate with the County when considering the adoption of environmental resource regulations or guidelines

Objective 3: Develop a uniform regulatory and streamlined review process

- a. Participate in initiatives that would achieve this objective
- b. Coordinate with the County when considering the adoption of environmental resource regulations or guidelines

Goal R4: Protect and improve the environment by promoting forest preservation, urban and community forestry, and tree planting throughout the City of Westminster

Objective 1: Develop and adopt a Westminster Urban Forestry Plan that promotes a healthy and thriving urban canopy and other desirable forms of vegetation

- a. Inventory all street trees in Westminster and keep the inventory up-to-date through an annual update
- b. Work with the Westminster Tree Commission to determine the priority areas for tree planting projects and to develop tree preservation and planting standards for the Urban Forestry Plan
- c. Develop a “Westminster Street Tree Plan” and program for each residential, commercial, and industrial neighborhood in the City to be included into the Urban Forestry Plan

- d. Require street trees in all residential, commercial, and industrial development and redevelopment be subject to the Westminster Street Tree Plan and program

Objective 2: Promote the National Arbor Day Foundation’s vision of a community where trees and forests are abundant, healthy, and sustainable, and highly valued by all people

- a. Support the Tree Commission as an organization of dedicated members who lead the way, and help individual citizens plant and care for trees to enrich the environment
- b. Provide opportunities for public education on the value of trees, including their environmental, aesthetic, and visual qualities and benefits
- c. Expand the awareness of the need for tree planting and care by increasing publicity about Arbor Day and the Westminster’s celebration of Arbor Week
- d. Ensure City street tree standards conform to Westminster Tree Commission and National Arbor Foundation’s recommendations for an officially designated Tree City

Objective 3: Encourage trees and native vegetation as necessary components in the aesthetic and environmental quality of residential, industrial, and commercial areas

- a. Require developments to retain existing significant trees and vegetation, where feasible, through regulations in the Westminster Zoning Ordinance and Landscape Manual
- b. Utilize trees and landscaping to mitigate environmental degradation and to buffer surrounding land uses impacted by residential, industrial, and commercial activities

Goal R5: Create a healthy, reliable, and sustainable future by continually increasing the effectiveness of how the City of Westminster utilizes and manages energy and water resources

Objective 1: Lead and coordinate integrated energy resource planning

- a. Develop a long-term sustainable Westminster strategy and implementation plan
- b. Develop capability to respond to energy emergencies and short-term disruptions
- c. Implement the “Water Conservation Plan” adopted by the WRCC to conserve limited water resources, minimize wastewater, and reduce stormwater runoff
- d. Update city operations and structures to incorporate energy efficiency and water conservation strategies
- e. Cooperate with Carroll County to incorporate water conservation requirements requiring the Best Practices in building code

Objective 2: Use less energy and water per capita than cities comparable in size to Westminster

- a. Follow environmentally-sensitive City maintenance and operation practices
- b. Increase awareness of conservation, efficiency, and renewable energy opportunities
- c. Garner positive media and public recognition for environmental stewardship
- d. Provide educational opportunities to promote sustainable practices
- e. Require energy and water efficiency for the growth of commercial and residential uses
- f. Participate in local, State, and regional water and energy conservation programs

Objective 3: Ensure City Park and recreational facilities are environmentally responsible, where natural resources and open space within these sites are promoted and protected

- a. Enhance the natural areas and habitats within City Parks
- b. Support and encourage nature-based programs and park improvements
- c. Create environmental education and volunteer opportunities in City Parks
- d. Expand the Westminster Community Gardens Program

Objective 4: Enhance and market Westminster's commitment to a sustainable and environmentally responsible future

- a. Encourage sustainable building practices to potential developers who specialize in "green" developments
- b. Inform decision makers and stakeholders of environmental policy, regulatory, and market changes that are likely to impact the region
- c. Attract businesses to Westminster to be a regional leader in innovation and commercialization of sustainable technologies
- d. Support the creation of the City of Westminster Environmental Advisory Board to develop a sustainable strategic plan and recommend sustainable policies and practices
- e. Implement policies and practices that position Westminster as a leader in sustainability