

# Environment Plan

---

## INTENT

The intent of the Environment Plan is to ensure that the quality of Prince William County's natural environment is maintained and enhanced as future development occurs. With sound protection measures, such as those presented herein, Prince William County's citizens, business community, and visitors can be confident that a healthy environment coexists with a vibrant economy. In this regard, this Plan is to be used to address environmental issues, evaluate development proposals in their earliest stages, and develop ordinances and sector plans.

Prince William County is the only county on the Atlantic seaboard that extends from sea level to mountain crest. The natural environment of the County is diverse. Streams, creeks, marshes, forests, meadows, and shores provide habitat for plants and animals, as well as contribute to the economic well-being and aesthetics of the County.

One way to ensure the quality of the County's natural environment is to see that applicants for development approval address environmental issues that are important in the development of a property at the earliest planning phase. On its rezoning application, the County asks for descriptive information on "natural features deserving of protection and preservation," and the applicant is asked to include a statement on how protection and maintenance will be accomplished. The Environment Plan more clearly delineates what constitutes "natural features."

The standards and guidelines presented in this Plan are intended to supplement those reflected in the Chesapeake Bay Act and Chesapeake Bay Regulations.

All policies and action strategies in the text below are intended to be applied to the extent permitted by law. Information contained in this Plan, and other environmental information available through the County, should be provided as a public service by the operators/management of the Prince William County Worldwide Web Home Page, County cable television stations, radio stations, and print media.

The components of the Environment Plan are:

- Intent, Goal, Policies, and Action Strategies
- Appendix A - Acreage and Proportionate Extent of Soils With Severe Limitations for Development and Greater than 15 percent Slopes
- A Chesapeake Bay Resource Protection Area (RPA) Map (fold-out map)

***GOAL: Preserve, protect, and enhance the significant environmental resources and features of the County, including air quality, topography, soils, ground and surface water, biotic communities (stream corridors, forests, and wetlands), sensitive plant and animal species, and natural viewsheds.***

# Environment Plan

---

## GENERAL ENVIRONMENTAL POLICIES AND ACTION STRATEGIES

### **EN-POLICY 1: CONSIDER ENVIRONMENTAL CONCERNS AT ALL LEVELS OF LAND USE-RELATED DECISION MAKING.**

#### **ACTION STRATEGIES:**

1. Develop a methodology to account for the depreciation of renewable (such as forest, or groundwater) and nonrenewable (unique habitats) resources when evaluating the economic health of the County.
2. Update the Zoning Ordinance to require rezoning and special use permit applicants to provide the following kinds of information with their applications when such information is determined to be necessary to evaluate the application:
  - A description or generalized mapping of natural site conditions with an emphasis on significant environmental features that would be affected by the proposed development or retained upon completion of the project. The mapped information shall address the following, where applicable:
    - ◆ Chesapeake Bay Resource Protection Areas
    - ◆ Areas that have "severe limitations with regard to soil type and are greater than 15 percent slope"
    - ◆ Impervious and pervious surfaces
    - ◆ Use of natural ground surface features and drainage patterns for the purpose of managing stormwater runoff
    - ◆ Public water supply
    - ◆ Areas that will remain in a natural or undisturbed state upon completion of the project (tree-save areas)
    - ◆ Endangered or threatened plant and animal species and species of special concern
    - ◆ 100-year floodplain boundary
  - A description of mitigation efforts that will occur as part of the proposed development.
  - An impact assessment that discusses the anticipated effect of the proposed development on the environment.
  - Measures that are proposed by the applicant to mitigate the impacts of the proposed development on the environment.
3. The Planning Office will update the General Development Plan Guidelines contained in the Long-Range Land Use Plan Map, based on this Environment Plan

# Environment Plan

---

and other relevant laws and regulations. The Planning Office will use these guidelines as a checklist for systematically reviewing rezoning and special use permit applications in terms of the data provided on natural resources and make these guidelines available to the public and applicants.

4. All County offices involved in land use will coordinate with local, federal, state, and regional environmental organizations to facilitate the exchange of data and implementation of environmental protection measures.
5. County staff should study and recommend the addition to the Long-Range Land Use Plan Map of areas of highly erodible and highly permeable soils and areas of shoreline and streambank erosion. Such areas, where added, should be identified as Environmental Resource (ER) on that map.
6. Ensure that the County is cognizant of the environmental issues and impacts of development projects of adjacent jurisdictions that might affect the health, safety, and welfare of the citizens of Prince William County.
7. Encourage developers to incorporate environmental strategies for innovative approaches to stormwater management, the incorporation of natural landforms, and the preservation and restoration of landscape resources, as discussed in the Community Design Plan, into site planning.
8. Ensure that open space is maintained in the County, and that a minimum of 39 percent of the total land area in the County will be retained as open space by buildout of the Comprehensive Plan.
9. Evaluate open space requirements in the Zoning Ordinance to ensure preservation/provision of open space within all developments.

## **EN-POLICY 2: INCREASE THE ENVIRONMENTAL AWARENESS OF COUNTY RESIDENTS.**

### **ACTION STRATEGIES:**

1. Develop educational programs on important environmental issues for the business, agriculture, and residential communities. Provide developers with information on County conservation requirements.
2. The County Library System Director shall establish an Environmental Resources Library in the County Library System.
3. The Board of County Supervisors should seek grant funding from the federal and state governments to print educational materials regarding environmental resources and conservation measures.

## Environment Plan

---

4. Continue to enhance the County's recycling program, with a goal to recycle a minimum of 40 percent of the total waste stream by 2000.
5. Maintain currency of information brochures for public distribution that explain the importance of protecting and managing the County's soils. In addition, the Soil and Water Conservation District, Department of Public Works, and the Cooperative Extension should work together to develop a single environmental education publication that meets the needs of all three groups.
6. Prepare or acquire information brochures explaining proper maintenance of private sewer/septic systems and the importance of such maintenance to the owner and to the environment. Make this information available to users of these systems.
7. Develop public service announcements that provide information about timing, selection, and application of appropriate chemical applications for yards and agriculture which also emphasize that inappropriate applications can damage the environment.
8. Prepare or acquire information brochures and public service announcements on Cable TV that explain the importance of water conservation and water quality protection.
9. Prepare and distribute information on household hazardous waste.
10. Enhance the litter control program.

### CLIMATE AND AIR QUALITY POLICIES AND ACTION STRATEGIES

#### **EN-POLICY 3: IMPROVE AIR QUALITY WITHIN PRINCE WILLIAM COUNTY.**

##### **ACTION STRATEGIES:**

1. Establish procedures to monitor air quality in the County.
2. Encourage the Department of Environmental Quality (DEQ) to establish additional air quality monitoring stations in the County.
3. Seek input from the DEQ on rezoning or special use permit applications that include facilities that are likely to produce gaseous emissions or potentially harmful airborne particulates in cooperation with the Air Quality Committee at the Metropolitan Washington Council of Governments (MWCOG).
4. Where applicable, review and consider air quality impacts for public and private industries and utilities in conjunction with the rezoning and/or special use permit application process.

## Environment Plan

---

5. Encourage and pursue the development of intercounty jurisdictional agreements and contingency plans to deal with stationary and mobile sources of pollution to protect residents, and especially sensitive residents (such as the young, the elderly, and sensitive populations).
6. Determine if adequate controls are in place to prevent metals, Polychlorinated Biphenols (PCBs), and other carcinogenic materials from entering the trash stream of public and private incinerators. Thereafter, continue to monitor and ensure adequate controls are in place to maintain the safety of the environment.
7. Encourage the reduction of outgassing pollutants from point sources.
8. Conduct air quality/transportation studies along major transportation corridors and at congested intersections in order to better define the impacts and trends of automobile-generated pollution.
9. Reduce pollution impacts from automobiles by designating compact urban growth areas and by encouraging the development of mixed use projects as described in the Long-Range Land Use Plan.
10. Encourage the Virginia Department of Transportation (VDOT) and developers to preserve vegetative buffers along arterial roadways as a means of filtering and absorbing pollutants.
11. Reduce pollution from automobiles by encouraging the use of advanced technology and alternative modes of transport, including public transit, van/carpooling, bicycles, light rail, and pedestrian paths. Encourage use of alternative fuels (natural gas, electric power) for public transit and school buses.
12. Encourage utility companies to share easements where technically feasible.

### TOPOGRAPHY AND SOILS POLICIES AND ACTION STRATEGIES

#### **EN-POLICY 4: PROTECT AND MANAGE THE COUNTY'S SOILS AND NATURAL VEGETATION.**

##### **ACTION STRATEGIES:**

1. Unless the applicant can demonstrate that mitigation measures can and will be used so that there will be no adverse impacts, prohibit clearing areas that have a high potential for erosion (where soils have severe limitations-and slope is greater than 15 percent). Refer to Appendix A for a listing of soil types with severe limitations and slopes greater than 15 percent. During the rezoning and/or special use permit process, the delineation of site disturbance on a plan, the provision of a narrative description of proposed grading and stabilization methods to be used

# Environment Plan

---

and/or similar general information are encouraged as methods to demonstrate an effort to preserve sensitive slope areas. Exact details of these mitigation measures will be developed during site plan review.

2. Unless the applicant can demonstrate that mitigation measures can and will be used so that there will be no adverse impacts, preclude development or disturbance of soil on slopes of 25 percent or greater. Any measures proposed to demonstrate mitigation of earth disturbance impacts should be provided for staff analysis during the rezoning and/or special use permit process; however, the exact details of these mitigation measures will be developed during site plan review.
3. Preclude development in areas with a dominance of marine clay soils, unless the applicant can demonstrate through geotechnical studies that all potential impacts, including those to structures, can and will be mitigated. Exact details of these mitigation measures will be developed during site plan review.
4. Use native plants that are adapted to local soil and weather conditions when revegetating disturbed areas.
5. Where toxic waste soil contamination is suspected, request that a rezoning and/or special use permit applicant submit the results of soil testing as part of the application.
6. Prohibit development at toxic waste sites to the extent provided by law.
7. Request that areas that will not be cleared or will be left in their natural state be identified to the extent practical in applications for rezoning and/or special use permit applications.
8. Monitor the effectiveness of the Prince William County Erosion and Sediment Control Ordinance and upgrade as appropriate.
9. Request erosion control plans for all federal and state projects in Prince William County.
10. Minimize clearing of vegetation and disturbance of soils.

## **SURFACE AND GROUNDWATER POLICIES AND ACTION STRATEGIES**

### **EN-POLICY 5: MAINTAIN OR ENHANCE THE INTEGRITY OF SURFACE BODIES OF WATER (LAKES, PONDS, RIVERS, AND STREAMS) AND WATERSHEDS.**

# Environment Plan

---

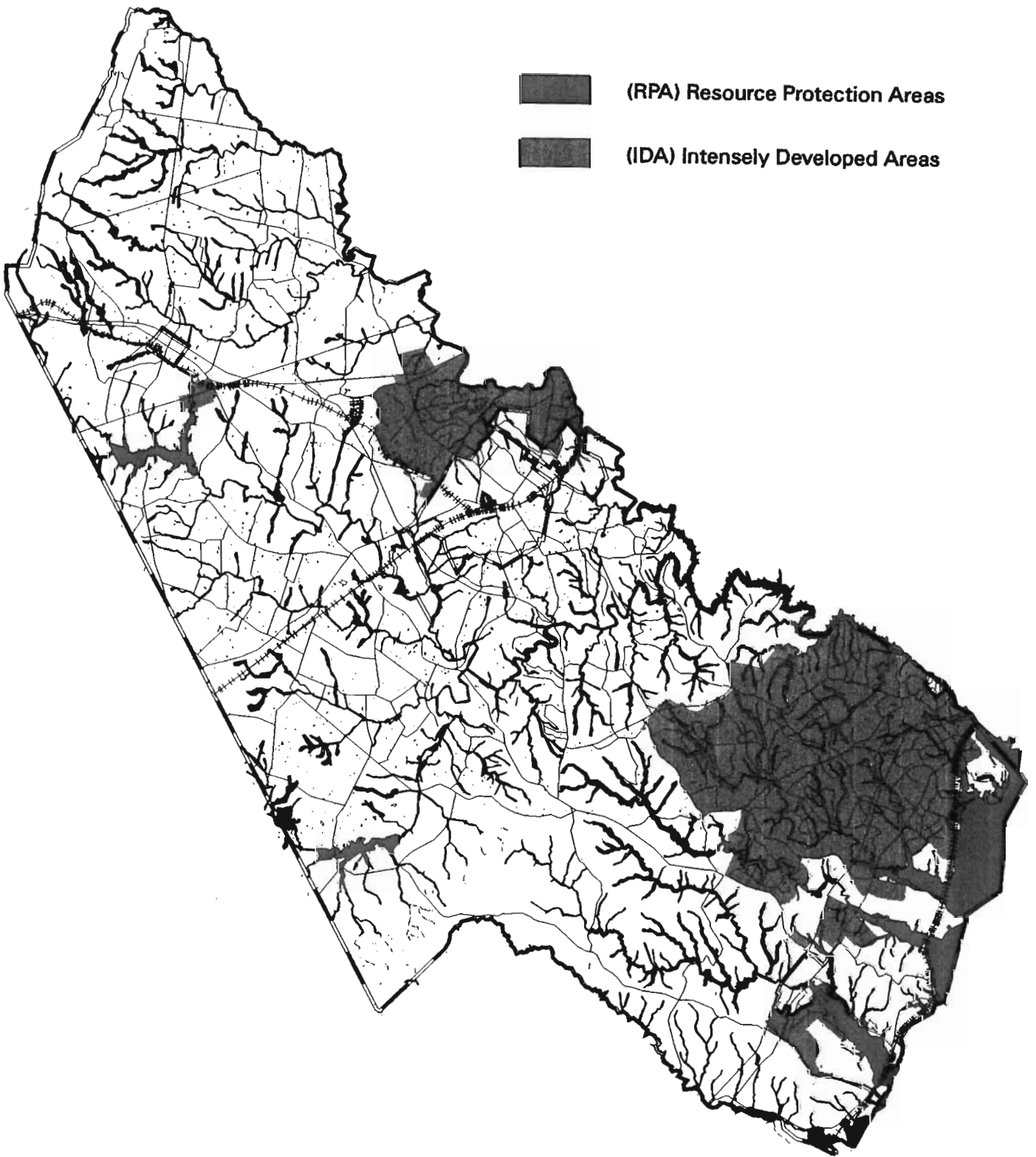
## ACTION STRATEGIES:

1. Encourage the use of no-net-gain standards to prevent nutrient loading, and sedimentation runoff to adjacent waters that result from development-related practices. Seek similar standards for agricultural practices.
2. Establish a program to monitor the effectiveness of the implementation of Chesapeake Bay Regulations.
3. Locate away from the County's water bodies those nonresidential activities that use, store, or manufacture significant quantities of toxic substances.
4. Study and recommend measures to improve contingency planning by parties who use, handle or store hazardous substances in sufficient quantities to constitute a threat to surface and groundwater quality. The measures should address identification of trigger amounts of materials and procedures for prevention of leaks or spills and for containment of leaks, spills, and water runoff from fire fighting.
5. To the extent permissible under existing laws and regulations, require industries and utilities to monitor for chemical leaks.
6. Develop, in coordination with the Community Design Plan, general design evaluation guidelines, criteria, and techniques that promote the preservation of natural landscapes, especially those that tend to be drought resistant, and apply them in the evaluation of rezoning and/or special use permit applications.
7. Encourage the County's farmers to employ best management practices, such as crop rotation, conservation tillage, strip cropping, and nutrient management.
8. Continue and promote an "Adopt-a-Stream" program.
9. Encourage leaving a natural undisturbed buffer along all waterways that are not otherwise protected under the Chesapeake Bay Act, Chesapeake Bay Regulations or similar legislation.
10. Develop and apply criteria in appropriate areas for establishing conservation overlay districts in order to protect surface and groundwater quality.
11. Where appropriate, require rezoning and special use permit applicants to describe in general detail the natural character of significant creeks, rivers, lakes, and ponds (as characterized on United States Geological Survey Maps) located on the property, as well as the 100-year floodplain and any Chesapeake Bay Resource Protection Area (RPA). Require applicants for such rezonings and/or special use permits to explain how the significant surface water bodies and related shorelines to be retained upon completion of the project will be protected during construction.

# Environment Plan

---

## Resource Protection Areas





# Environment Plan

---

12. Continue to implement a watershed management program, as set forth by the County's Public Works Department, to provide regional stormwater management and flood control facilities, where such facilities are feasible and permitted by federal and state agencies.
13. Require adherence to the following guidelines for determination of Density/Intensity of Development:

## RESIDENTIAL

Preclude the development of habitable structures within the 100-year floodplains. The allowable dwelling unit density for a property shall be calculated based on the area outside the floodplain and the Chesapeake Bay RPAs. The allowable dwelling unit density areas of the property encumbered by 100-year floodplain and Chesapeake Bay RPAs shall be based upon the maximum density permitted by the existing zoning of the property at the time of adoption of the 1998 Comprehensive Plan. Other relevant Comprehensive Plan components such as the capacity of the transportation network and zoning requirements must be addressed, as well, in determining the appropriate number of dwelling units on a property.

## NONRESIDENTIAL

On nonresidential-zoned property encumbered with areas of 100-year floodplain and Chesapeake Bay RPAs, the allowable intensity is determined based on the Floor Area Ratio (FAR) specified by the existing or proposed zoning district and the total site area. Development within the 100-year floodplain and Chesapeake Bay RPAs is to be precluded, except as otherwise permitted by law. The intensity of development is to be evaluated on the basis of other relevant environmental resource action strategies, the compatibility of the proposed uses with surrounding existing uses and other applicable portions of the Plan.

14. Create an Environmental Resource (ER) zoning district that will include the land areas, development intensities, and development restrictions discussed in AS-13, above, and in EN-Policy 1, AS-5.
15. Develop and distribute public service information to reduce nutrient loading in stormwater runoff from yards and farms.

## **EN-POLICY 6: LIMIT THE AMOUNT AND EXTENT OF IMPERVIOUS SURFACES.**

### **ACTION STRATEGIES:**

1. Encourage the minimization of the amount of impervious surfaces of development and redevelopment in order to minimize stormwater runoff through the use of appropriate sustainable design techniques and in accordance with the Community Design Plan.

# Environment Plan

---

2. Encourage the use of semipervious or pervious surfaces, where appropriate.
3. Where appropriate, require, as part of an application for a rezoning provisional use permit, and/or special use permit, that the general location of impervious surfaces be identified to the extent practical and that a statement be included indicating what the maximum amount of impervious surfaces will be upon completion of the development.
4. Continue an enforcement/monitoring program to ensure that during and after development, peak stormwater flows do not exceed predevelopment peak flows, in terms of quantity, quality, and volume.

## **EN-POLICY 7: PROMOTE THE PRESERVATION AND USE OF NATURAL GROUND SURFACE FEATURES WHICH FACILITATE THE EFFECTIVE MANAGEMENT OF STORMWATER RUNOFF.**

### **ACTION STRATEGIES:**

1. Seek and implement stormwater management standards that require all development projects to establish systems, preferably natural, for filtering the "first flush" (delivery of disproportionately large amounts of pollutants which occurs during the early stages of a storm) of urban runoff near its source.
2. Require the installation of sediment trapping devices close to the sources of soil erosion.
3. Maintain or establish areas of natural vegetation downstream of disturbed soils to help filter sediments and other pollutants.
4. On rezoning applications that include generalized development plans or special use permit applications, request the applicant to address the anticipated need for changing natural ground surface features and drainage patterns for the purpose of managing stormwater runoff.

## **EN-POLICY 8: ENSURE THE PROTECTION OF THE COUNTY'S GROUND-WATER AND AQUIFERS.**

### **ACTION STRATEGIES:**

1. Coordinate with the Health Department and State Water Control Board to assist in the identification of Critical Groundwater Areas (CGAs).
2. Develop procedures to protect or improve, if necessary, the water quality of CGAs.

## Environment Plan

---

3. Evaluate the potential for groundwater pollution (using the DRASTIC system developed by the U.S. Environmental Protection Agency [EPA] which uses methodology described in U.S. EPA Publication 600/2-87-035) when reviewing rezoning and/or special use permit applications.
4. Promote the use of secondary containment storage tanks for petroleum products and other hazardous materials.
5. Review and upgrade, as appropriate, the best management practices and soil and erosion maintenance enforcement program for all types of development.
6. Conduct a study to predict the pollution content of proposed stormwater management ponds.
7. Continue to monitor the pollution content of the sediment in existing stormwater management ponds.
8. Develop an ordinance that requires new wells be tested for toxic and radiological substances at the same time that they are being tested for bacterial contaminants.
9. Develop guidelines for the preservation of saprolite (soft, earth, clay-rich, thoroughly decomposed rock formed in place by chemical weathering of igneous or metamorphic rock) in areas where land use includes agriculture and where septic systems are used.
10. Support a 100-percent reserve requirement for all drainfields, or equivalent mechanisms for achieving the same goal, regardless of percolation rate, for all developments in the County that are not developed with public sewer.
11. Ensure that any construction in a flood hazard district (as identified by the Federal Emergency Management Act) is consistent with both the Flood Hazard Overlay District and Chesapeake Bay Preservation Area Overlay District requirements, as identified in the Zoning Ordinance and the Design and Construction Standards Manual (DCSM). Expansion of any nonconforming use or structure in a flood hazard district shall be permitted only as set forth in the Zoning Ordinance and the DCSM.
12. Promote the use of lined catchment basins or water quality inlets for stormwater runoff and/or small spills or leakages on sites where petroleum products or hazardous wastes are handled.
13. Encourage the use of appropriate vegetation in the stormwater system that will remove nutrients from the storm flow.

# Environment Plan

---

## **EN-POLICY 9: SET SEWER FORCE MAINS AND PETROLEUM AND HAZARDOUS MATERIAL LINES AWAY FROM THE WATERS' EDGE.**

### **ACTION STRATEGIES:**

1. Encourage that, except where a crossing is needed, sewer force mains and petroleum and hazardous substances lines be located outside of stream channels and other water bodies.

## **EN-POLICY 10: ENSURE THE HIGH QUALITY OF PUBLIC DRINKING WATER SOURCES SUCH AS LAKE MANASSAS AND THE OCCOQUAN RESERVOIR.**

*In addition to the policies and action strategies listed for surface and groundwater protection, the following action strategies will serve to implement this policy:*

### **ACTION STRATEGIES:**

1. Encourage the minimum density/intensity of development as reflected by the appropriate land use classification shown on the Long-Range Land Use Plan Map around the shore of the reservoirs.
2. Conduct a study to determine appropriate land use densities (i.e., dwelling units per acre) near the Occoquan Reservoir, which is the County's primary public water supply, and evaluate the option of creating an overlay district for the area.
3. Where not otherwise required as part of the Chesapeake Bay Act for designated RPAs, require a minimum 100-foot setback from shorelines of public water sources for development-related ground disturbance activities.
4. Require the use of best management practices for agricultural activities undertaken within the Lake Manassas and Occoquan Reservoir watersheds.
5. Continue to support the Occoquan Monitoring Laboratory, the Northern Virginia Planning District Commission's technical studies, and the multijurisdictional Occoquan watershed program, and obtain annual reports for presentation to the Board of County Supervisors.
6. Promote open space uses and, where practical, acquire land along the Occoquan Reservoir for special use parks that are designed to promote an appreciation of the natural environment and facilitate passive recreation (such as fishing, hiking, and nonmotorized boating).
7. In cooperation with Fairfax County, evaluate the option of restricting by ordinance, the use of internal combustion engines on the Occoquan Reservoir.

# Environment Plan

---

8. Request that the Occoquan Laboratory identify types of point/nonpoint pollution sources upstream from the reservoirs and to suggest ways that the nonpoint source pollution can be eliminated or controlled.

## **EN-POLICY 11: PRESERVE NATURAL VEGETATION, ESPECIALLY EXISTING AND MATURE TREES, AND PROVIDE FOR THE REPLACEMENT OF TREES.**

### **ACTION STRATEGIES:**

1. Maintain and update the County's Tree Replacement Ordinance.
2. Adopt a Tree Preservation Ordinance, as allowed by state law.
3. Permit clustering within a variety of residential land use categories to further environmental policies, where such clustering is in accordance with the policies and action strategies of the Long-Range Land Use Plan.
4. Continue to support and implement the Agricultural and Forestal District program in order to preserve farmland and wooded areas in the County.
5. Continue the progress toward establishing a Countywide greenway and path system through the voluntary donation of land and easements from interested property owners, as a means of environmental protection.
6. Coordinate with the Virginia Department of Forestry to implement an urban forestry program as authorized in the Virginia Code.
7. Conduct a professional study to identify the County's mature hardwood forests (such as oak/hickory) and the location of those forests deserving special protection.
8. Consider acquisition of select sites for public parks/forests and/or encourage the dedication of such sites by private property owners.
9. Evaluate the option of establishing a tree registration program.
10. Study the practicality of adopting alternative reforestation strategies.

## **EN-POLICY 12: IDENTIFY, MANAGE, AND PROTECT ALL ECOLOGICAL COMMUNITIES AND WILDLIFE, ESPECIALLY CRITICAL HABITATS, AS WELL AS ENDANGERED AND THREATENED SPECIES, AND SPECIES OF SPECIAL CONCERN, AS IDENTIFIED IN OFFICIAL FEDERAL AND STATE LISTS.**

# Environment Plan

---

## **ACTION STRATEGIES:**

1. Establish an identification and monitoring system for the County's endangered and threatened species, and species of special concern.
2. Develop and implement protection guidelines for endangered and threatened populations of plant and wildlife that occur in the County. These guidelines apply to County and privately-owned lands.
3. Where records maintained by the state Department of Natural Resources or other credible resource indicate is appropriate, require that applicants for a rezoning and/or a special use permit provide an inventory of endangered species, threatened species, and species of special concern.
4. To protect the biological diversity, processes, and functions of natural habitats, identify a network of preservation corridors to be incorporated into an overall habitat protection network.
5. Investigate the benefits of establishing a private conservancy fund for the purpose of purchasing privately held lands for preservation purposes and seeking perpetual conservation easements to preserve open space.
6. Identify areas suitable for wetlands restoration and develop procedures whereby a developer/landowner can contribute to such wetlands when no alternative to wetland preservation exists on-site.

## **NATURAL VIEWSHEDS POLICIES AND ACTION STRATEGIES**

### **EN-POLICY 13: IDENTIFY SIGNIFICANT NATURAL VIEWSHEDS IN PRINCE WILLIAM COUNTY.**

#### **ACTION STRATEGIES:**

1. Seek funding from federal, state, local, and private organizations in order to secure professional services needed to conduct a Countywide viewshed inventory.
2. Develop an incentive system for preservation of viewsheds.
3. Determine whether it is desirable to establish viewshed overlay districts in the County.

# Environment Plan

## APPENDIX A

### Acreage and Proportionate Extent of Soils With Severe Limitations for Development and Greater Than 15 Percent Slopes

Soil Type	General Location	Slope Range (%)	Localized Range (acres)	Est. Total Acreage	Percent of County
Airmont-Weaverton complex	Bull Run Mtn. Slopes	15 to 25	2 to 100	970	0.43%
Airmont-Weaverton complex	Bull Run Mtn. Slopes	25 to 50	2 to 200	1,420	0.64%
Arcola-Nestoria complex	west of Lake Jackson	15 to 25	2 to 50	2,720	1.22%
Catlett gravelly silt loam	west of Lake Jackson	15 to 25	2 to 50	460	0.21%
Lunt loam	east of I-95	15 to 25	2 to 30	1,030	0.46%
Nestoria Gravelly silt loam	west of Lake Jackson	7 to 25	2 to 20	300	0.13%
Nestoria Gravelly silt loam	west of Lake Jackson	25 to 50	2 to 20	770	0.34%
Spriggs silt loam	Spriggs Road area	15 to 25	2 to 50	980	0.44%
Spriggs silt loam	Spriggs Road area	25 to 50	2 to 100	710	0.32%
Stumptown very flaggy loam	Bull Run Mtn.	7 to 25	2 to 100	920	0.41%
Stumptown very flaggy loam	Bull Run Mtn.	25 to 50	2 to 100	1,080	0.48%
Watt channery silt loam	east half of County	15 to 25	2 to 100	290	0.13%
Watt channery silt loam	east half of County	25 to 50	2 to 15	690	0.31%
TOTAL COUNTY ACREAGES: 221,204 ac.			CLASS TOTAL =	12,340	5.52%