This handout provides excerpts from the Environment section of the Policy Plan volume of the Comprehensive Plan for Fairfax County, Virginia identifying two amendment options that could be pursued to strengthen Plan guidance relating to stream and buffer area protection and restoration in headwaters areas of watersheds.

Specifically, background text and objective and policy language addressing water quality and stream protection, Potomac River and Chesapeake Bay-related issues, and Environmental Quality Corridors (Objectives 2, 3, and 9) is included.

Amendment options are presented in bold print and are highlighted.
Water Quality

Some Fairfax County streams and lakes are characterized by poor water quality. The Department of Public Works and Environmental Services (DPWES) maintains a monitoring station at Kingstowne and monitors storm sewer outfall discharges to assess the impact of urban development on the County’s water resources. In addition, DPWES monitors ecological conditions within County streams as part of the Fairfax County Stream Protection Strategy Study and through the countywide Stream Physical Assessment program, in support of watershed management planning efforts. The Fairfax County Department of Public Works and Environmental Services also routinely monitors surface waters throughout the County for pollutants and water quality indicators such as fecal coliform bacteria, dissolved oxygen, phosphorus, and nitrate nitrogen. Fecal coliform bacteria concentrations frequently exceed state water quality standards.

The core of Fairfax County’s Environmental Quality Corridor (EQC) system is its stream valleys. Streams provide habitat for aquatic species and are an integral component of stream valley habitat systems. Streams also serve to replenish water sources that may ultimately provide drinking water and are places of natural beauty, that provide recreational and aesthetic opportunities, contributing to the quality of life in Fairfax County. Much of the County’s parkland consists of stream valley parks, and much of the County’s existing and planned trail system is located near streams. Land use and development activities have the potential to degrade the ecological quality of streams through the direct transport of pathogens and pollutants, as well as through hydrologic changes that can alter the character of flow in streams, resulting in alterations to stream morphology (e.g., stream bank erosion). The protection and restoration of the ecological quality of streams is important to the conservation of ecological resources in Fairfax County. Therefore, efforts to minimize adverse impacts of land use and development on the County’s streams should be pursued.

The Occoquan Reservoir, one of Fairfax County’s principal sources of drinking water, and many smaller impoundments in the County are highly stressed due to the impacts of urban stormwater runoff.

Point source pollution from sewage treatment plants and heavy industry is not currently a problem in the County. Care should be taken to anticipate and prevent ground and surface water contamination.

There are approximately 12,000 single family residences and businesses that are served by individual well water supplies in Fairfax County. The County's well monitoring program is limited. Little is known about the potential for hazardous materials and leaking underground storage tanks to contaminate these wells. (See Figure 2.)
Objective 2: Prevent and reduce pollution of surface and groundwater resources. Protect and restore the ecological integrity of streams in Fairfax County.

Policy a. Maintain a best management practices (BMP) program for Fairfax County and ensure that new development and redevelopment complies with the County’s best management practice (BMP) requirements.

Policy b. Update BMP requirements as newer, more effective strategies become available.

Policy c. Minimize the application of fertilizers, pesticides, and herbicides to lawns and landscaped areas through, among other tools, the development, implementation and monitoring of integrated pest, vegetation and nutrient management plans.

Policy d. Preserve the integrity and the scenic and recreational value of stream valley EQCs when locating and designing storm water detention and BMP facilities. In general, such facilities should not be provided within stream valley EQCs unless they are designed to provide regional benefit or unless the EQCs have been significantly degraded. When facilities within the EQC are appropriate, encourage the construction of facilities that minimize clearing and grading, such as embankment-only ponds, or facilities that are otherwise designed to maximize pollutant removal while protecting, enhancing, and/or restoring the ecological integrity of the EQC.

Policy e. Update erosion and sediment regulations and enforcement procedures as new technology becomes available. Minimization and phasing of clearing and grading are the preferred means of limiting erosion during construction.
Policy f. Where practical and feasible, retrofit older stormwater management facilities to perform water quality functions to better protect downstream areas from degradation.

Policy g. Monitor the performance of BMPs.

Policy h. Protect water resources by maintaining high standards for discharges from point sources.

Policy i. Monitor Fairfax County’s surface and groundwater resources.

Policy j. Regulate land use activities to protect surface and groundwater resources.

Policy k. For new development and redevelopment, apply better site design and low impact development (LID) techniques such as those described below, and pursue commitments to reduce stormwater runoff volumes and peak flows, to increase groundwater recharge, and to increase preservation of undisturbed areas. In order to minimize the impacts that new development and redevelopment projects may have on the County’s streams, some or all of the following practices should be considered where not in conflict with land use compatibility objectives:

- Minimize the amount of impervious surface created.
- Site buildings to minimize impervious cover associated with driveways and parking areas and to encourage tree preservation.
- Where feasible, convey drainage from impervious areas into pervious areas.
- Encourage cluster development when designed to maximize protection of ecologically valuable land.
- Encourage the preservation of wooded areas and steep slopes adjacent to stream valley EQC areas.

**OPTION 1:**

**GENERAL POLICY SUPPORT UNDER STREAM PROTECTION OBJECTIVE**

In order to augment the EQC system, in consideration of overall site design and stormwater management benefits, encourage protection of stream channels and associated vegetated riparian buffer areas along stream channels upstream of Resource Protection Areas (as designated pursuant to the Chesapeake Bay Preservation Ordinance) and Environmental Quality Corridors. Where applicable, pursue commitments to restoration of degraded stream channels and riparian buffer areas.
- Encourage fulfillment of tree cover requirements through tree preservation instead of replanting where existing tree cover permits. Commit to tree preservation thresholds that exceed the minimum Zoning Ordinance requirements.

- Where appropriate, use protective easements in areas outside of private residential lots as a mechanism to protect wooded areas and steep slopes.

- Encourage the use of open ditch road sections and minimize subdivision street lengths, widths, use of curb and gutter sections, and overall impervious cover within cul-de-sacs, consistent with County and State requirements.

- Encourage the use of innovative BMPs and infiltration techniques of stormwater management where site conditions are appropriate, if consistent with County requirements.

- Apply nonstructural best management practices and bioengineering practices where site conditions are appropriate, if consistent with County requirements.

- Encourage shared parking between adjacent land uses where permitted.

- Where feasible and appropriate, encourage the use of pervious parking surfaces in low-use parking areas.

- Maximize the use of infiltration landscaping within streetscapes consistent with County and State requirements.

Policy I. Support watershed management planning and consider any watershed management plans that are adopted or endorsed by the Board of Supervisors as a factor in making land use decisions.

Policy m. Optimize stormwater management and water quality controls and practices for redevelopment consistent with revitalization goals.

Policy n. Ensure that development and redevelopment sites that have been subject to contamination by toxic substances or other hazardous materials are remediated to the extent that they will not present unacceptable health or environmental risks for the specific uses proposed for these sites and that unacceptable health or environmental risks will not occur as a result of contamination associated with nearby properties.

Development proposals should implement best management practices to reduce runoff.
pollution and other impacts. Preferred practices include: those which recharge groundwater when such recharge will not degrade groundwater quality; those which preserve as much undisturbed open space as possible; and, those which contribute to ecological diversity by the creation of wetlands or other habitat enhancing BMPs, consistent with State guidelines and regulations.

Proposals that include the use or storage of hazardous materials should provide adequate containment facilities, monitoring, and spill prevention strategies to protect surface and groundwater resources consistent with State regulations. Site investigations and remedial actions, as appropriate, should be pursued to ensure that site contamination on or near properties subject to development proposals will not present unacceptable health or environmental risks.

Programs to improve water quality in the Potomac River/Estuary, and Chesapeake Bay will continue to have significant impacts on planning and development in Fairfax County. There is abundant evidence that water quality and the marine environment in the Bay are deteriorating, and that this deterioration is the result of land use activities throughout the watershed.

In order to protect the Chesapeake Bay and other waters of Virginia from degradation resulting from runoff pollution, the Commonwealth has enacted regulations requiring localities within Tidewater Virginia (including Fairfax County) to designate "Chesapeake Bay Preservation Areas", within which land uses are either restricted or water quality measures must be provided. Fairfax County has adopted a Chesapeake Bay Preservation Ordinance pursuant to these regulations.

The more restrictive type of Chesapeake Bay Preservation Area is known as the “Resource Protection Area (RPA).” With a few exceptions (e.g. water wells, recreation, infrastructure improvements, "water dependent" activities, and redevelopment), new development is prohibited in these areas. In Fairfax County, RPAs include the following features:

- water bodies with perennial flow;
- tidal wetlands;
- tidal shores;
- nontidal wetlands contiguous with and connected by surface flow to tidal wetlands or water bodies with perennial flow;
- a buffer area not less than 100 feet in width around the above features; and
- as part of the buffer area, any land within a major floodplain.

The other, less sensitive category of land in the Preservation Areas is called the "Resource Management Area (RMA)." Development is permitted in RMAs as long as it meets water quality goals and performance criteria for these areas. These goals and criteria include stormwater management standards, maintenance requirements and reserve capacity for on-site sewage disposal facilities, erosion and sediment control requirements, demonstration of attainment of wetlands permits, and conservation plans for agricultural activities. In Fairfax County, RMAs include any area that is not designated as an RPA.
A Chesapeake Bay Supplement has been prepared to address a range of issues related to water quality protection and is incorporated by this reference as part of the Comprehensive Plan. This Supplement includes a map of the County’s Chesapeake Bay Preservation Area components as well as discussions and analyses of water quality issues as they relate to pollution sources, infill development, redevelopment, shoreline erosion control, and shoreline access.

**Objective 3:** Protect the Potomac Estuary and the Chesapeake Bay from the avoidable impacts of land use activities in Fairfax County.

**Policy a.** Ensure that new development and redevelopment complies with the County's Chesapeake Bay Preservation Ordinance, as applied to Chesapeake Bay Preservation Areas adopted by the Board of Supervisors as generally depicted in Figure 5 of the Chesapeake Bay Element Supplement to the Comprehensive Plan, as may be amended by the Board of Supervisors.

**Policy b.** Support the analysis and recommendations contained in the Chesapeake Bay Supplement to the Comprehensive Plan.

**Policy c.** Where tidal shoreline erosion control measures are needed, apply techniques that are consistent with the “Guidelines for Tidal Shoreline Erosion Control Measures” in the Environment Appendix.

**Policy d.** Boating and other tidal shoreline access structures should be sited, designed, and constructed in a manner that minimizes adverse environmental impacts. Where County approval of tidal shoreline access structures is needed, the following guidelines should be consulted and considered in the decision-making process: the Chesapeake Bay Program’s document entitled “Chesapeake Bay Area Public Access Technical Assistance Report;” and the following guidelines issued by the Virginia Marine Resources Commission; “Shoreline Development BMPs,” “Wetlands Guidelines,” and “Subaqueous Guidelines.”

**Policy e.** Support efforts to mitigate or compensate for losses of wetlands near the area(s) of impact.

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**ENVIRONMENTAL RESOURCES**

The third category of environmental issues addresses the protection, preservation, and restoration of environmental resources. These issues reflect a need to conserve or restore appropriate examples of the County's rapidly disappearing natural landscape, to protect and manage its...
ecological resources, and to provide visual relief in the form of natural vegetation between adjacent and sometimes incompatible land uses.

The County continues to lose open space, much of which has been cumulatively significant for environmental resources. "Open space" land, as distinguished from developed land, includes parks, conservation areas, private open space, and vacant land. The quantity of land included within these categories has diminished by more than 30 percent from 1975 to 1995, and is now less than 77,000 acres. Although not all open space land is ecologically significant or appropriate for preservation, the data indicate a loss of some of Fairfax County's environmental resources, and a fragmentation of remaining ecologically significant land. Large tracts of natural land are especially scarce in the more urban inner part of the County. However, several areas of low density development and some ecologically significant areas remain.

Low density zoning is a valuable conservation tool. However, as a single measure it is not an adequate means to conserve our resources. As currently prescribed in the Zoning Ordinance, neither conventional, nor cluster subdivision regulations are preserving the quality of the landscape that these low density zoning districts were enacted to protect.

It is desirable to conserve a portion of the County's land in a condition that is as close to a predevelopment state as is practical. A conserved network of different habitats can accommodate the needs of many scarce or sensitive plant and animal species. Natural open space also provides scenic variety within the County, and an attractive setting for and buffer between urban land uses. In addition, natural vegetation and stream valleys have some capacity to reduce air, water and noise pollution.

**Objective 9:** Identify, protect and enhance an integrated network of ecologically valuable land and surface waters for present and future residents of Fairfax County.

**Policy a:** For ecological resource conservation, identify, protect and restore an Environmental Quality Corridor system (EQC). (See Figure 4.) Lands may be included within the EQC system if they can achieve any of the following purposes:

- **Habitat Quality:** The land has a desirable or scarce habitat type, or one could be readily restored, or the land hosts a species of special interest.

- **"Connectedness":** This segment of open space could become a part of a corridor to facilitate the movement of wildlife.

- **Aesthetics:** This land could become part of a green belt separating land uses, providing passive recreational opportunities to people.
- Pollution Reduction Capabilities: Preservation of this land would result in significant reductions to nonpoint source water pollution, and/or, microclimate control, and/or reductions in noise.

The core of the EQC system will be the County's stream valleys. Additions to the stream valleys should be selected to augment the habitats and buffers provided by the stream valleys, and to add representative elements of the landscapes that are not represented within stream valleys. The stream valley component of the EQC system shall include the following elements (See Figure 4):

- All 100 year flood plains as defined by the Zoning Ordinance;
- All areas of 15% or greater slopes adjacent to the flood plain, or if no flood plain is present, 15% or greater slopes that begin within 50 feet of the stream channel;
- All wetlands connected to the stream valleys; and
- All the land within a corridor defined by a boundary line which is 50 feet plus 4 additional feet for each % slope measured perpendicular to the stream bank. The % slope used in the calculation will be the average slope measured within 110 feet of a stream channel or, if a flood plain is present, between the flood plain boundary and a point fifty feet up slope.

Stream and buffer area protection/restoration
from the flood plain. This measurement should be taken at fifty foot intervals beginning at the downstream boundary of any stream valley on or adjacent to a property under evaluation.

**OPTION 2: EQC POLICY EXPANSION**

In consideration of overall site design and stormwater management benefits, designation, protection, and, where applicable, restoration of EQCs along stream channels within headwaters areas of streams (upstream of RPAs and 100-year floodplains) should be encouraged.

Modifications to the boundaries so delineated may be appropriate if the area designated does not benefit habitat quality, connectedness, aesthetics, or pollution reduction as described above. In addition, some intrusions that serve a public purpose such as unavoidable public infrastructure easements and rights of way are appropriate. Such intrusions should be minimized and occur perpendicular to the corridor's alignment, if practical.

Preservation should be achieved through dedication to the Fairfax County Park Authority, if such dedication is in the public interest. Otherwise, EQC land should remain in private ownership in separate undeveloped lots with appropriate commitments for preservation. The use of protective easements as a means of preservation should be considered.

When preservation of EQC land is achieved through the development process it is appropriate to transfer some of the density that would otherwise have been permitted on the EQC land to the non-EQC portion of the property to provide an incentive for the preservation of the EQC and to achieve the other objectives of the Plan. The amount of density transferred should not create an effective density of development that is out of character with the density normally anticipated from the land use recommendations of the Plan. For example, town homes should not normally be built adjacent to an EQC in an area planned for two to three dwelling units per acre. Likewise, an increase in the effective density on the non EQC portion of a site should not be so intense as to threaten the viability of the habitat or pollution reduction capabilities that have been preserved on the EQC portion of the site.

Policy b. To provide an incentive for the preservation of EQCs while protecting the integrity of the EQC system, allow a transfer of some of the density from the EQC portion of developing sites to the less sensitive areas of these sites. The increase in effective density on the non-EQC portion of a site should be no more than an amount which is directly proportional to the percentage of the site that is preserved. Overall site yield will decrease as site constraints increase. Maximum density should be determined according to a simple mathematical expression based upon the ratio of EQC land to total land. This policy is in addition to other plan policies which impact density and does not supersede other land use compatibility policies.