

**DISTURBANCES IN
ENVIRONMENTAL QUALITY
CORRIDORS:**

**POLICY REVIEW—BACKGROUND AND
STRAWMAN DRAFT PLAN
AMENDMENT PROPOSAL**

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Prepared for the Planning Commission's Environment Committee

Fairfax County Department of Planning and Zoning

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DISTURBANCES IN ENVIRONMENTAL QUALITY CORRIDORS:
POLICY REVIEW—BACKGROUND AND
STRAWMAN DRAFT PLAN AMENDMENT PROPOSAL

On February 23, 2009, the Fairfax County Board of Supervisors requested staff, in coordination with the county's Planning Commission, Environmental Quality Advisory Council (EQAC) and stakeholders, to conduct a thorough review of the county's Environmental Quality Corridor (EQC) policy as it relates to proposals for disturbances within EQCs. The purpose of this paper is to present a background discussion regarding this issue and to present one possible policy approach to resolving the question regarding the circumstances under which such disturbances should be considered. The "strawman" recommendation is one of many possible approaches to addressing this issue and is presented as a starting point for discussion with hopes that it will facilitate the formulation of policy guidance. The strawman is based on staff's review and on discussions that were held at several meetings of the Planning Commission's Environment Committee between February and July, 2009; it presents staff's best efforts at this time at formulating a policy direction that is both: (1) sensitive to the discussions that have occurred to date; and (2) in keeping with the purpose and intent of the EQC policy. However, the strawman is not a staff recommendation and does not necessarily reflect the policy direction that will ultimately be recommended by the Planning Commission and/or EQAC. It is recognized that additional stakeholder input is needed prior to the formulation of recommendations, and it is hoped that this strawman draft will serve to focus the discussion.

BACKGROUND

The Environmental Quality Corridor system is an open space system in Fairfax County that is designed to link and preserve natural resource areas; by doing so, it also provides significant opportunities for passive recreation. In 1975, as part of the "PLUS" (Planning Land Use System) planning effort in Fairfax County, the EQC concept was incorporated into the Comprehensive Plan. The EQC policy has been refined since its introduction in 1975 but continues to be a centerpiece of Fairfax County's environmental policy.

The EQC policy can be found in Objective 9 of the Environment section of the Policy Plan volume of Fairfax County's Comprehensive Plan (see Appendix 1). It recommends protection and restoration of environmentally-sensitive lands, including 100-year floodplains, steep slopes (gradients of 15% or greater) in stream valleys, wetlands connected to stream valleys, minimum buffer areas, and upland habitats that augment the habitats and buffers provided by stream valleys. The protection of EQCs is not required by any regulation or ordinance; rather, the identification and protection of EQCs occur through negotiations with developers during the zoning process (the reviews of rezonings, special exceptions, special permits, variances, and related applications). There are certain resources that are afforded regulatory protection (e.g., Resource Protection Areas as defined by the Chesapeake Bay Preservation Ordinance, 100-year floodplains); EQCs can be broader in width, and often extend upstream from, these regulated areas.

The EQC policy provides both specific and general guidance for the identification of EQCs and the delineation of EQC boundaries. Lands may be included within the EQC system if they meet any one of the four stated purposes of the policy (See Appendix 1 for details):

- Habitat Quality;
- Connectedness;
- Aesthetics; or
- Pollution Reduction Capabilities.

The core of the EQC system is the stream valley, and the policy provides specific guidance regarding the delineation of boundaries of stream valley components of the EQC system. During the zoning process, EQC boundaries are negotiated based on this guidance. The policy, does, however, establish that EQC boundaries may be modified where an area does not meet any of the four purposes noted above—this flexibility has been applied in a limited number of cases where on-site conditions were determined to warrant some level of modification from a rigid interpretation of the policy guidance. However, such modifications have been the exception rather than the rule, and the policy guidance has been applied both rigorously and consistently over the years.

The EQC policy generally establishes an expectation that areas identified as EQCs will be protected through proffered commitments or development conditions associated with a zoning application. However, the need for consideration of certain intrusions into EQCs is recognized. Specifically, intrusions into the EQC “that serve a public purpose such as unavoidable public infrastructure easements and rights of way” are considered to be appropriate, as long as they are “minimized and occur perpendicular to the corridor’s alignment, if practical.” In practice, this guidance has been applied in the past to support the consideration, on a case-by-case basis, of disturbances in the EQC to provide for the following:

- Infrastructure lines/easements (e.g., sewer lines; water lines);
- Storm sewer outfalls;
- Public roads identified in the Comprehensive Plan;
- Road crossings where there are no reasonable alternatives to providing access to a buildable part of a site;
- Trails, particularly where identified in the Comprehensive Plan; and
- Stream stabilization or restoration efforts.

A separate policy in the Policy Plan (Environmental Objective 2, Policy d, see Appendix 1) addresses the circumstances under which proposals for the location of stormwater management facilities in EQCs should be considered favorably. Specifically, the policy establishes that “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.” The policy also suggests that, where such facilities are provided, they be designed to “minimize clearing and grading” (e.g., embankment-only

facilities) or “maximize pollutant removal while protecting, enhancing, and/or restoring the ecological integrity of the EQC.”

In 2008, the Aerospace Corporation filed a rezoning application that generated questions regarding the extent to which the EQC policy should accommodate additional disturbances where such disturbances are part of an overall package that could be considered to have, in balance, environmental benefits. Background regarding this application is provided in Appendix 2. Staff recommended denial of the application because the EQC policy did not suggest that adverse impacts in one EQC area could be justified by more comprehensive EQC restoration efforts elsewhere. Staff recognized the need for and benefits of an EQC restoration effort that was being proposed in portions of the property; staff also recognized that the applicant made a strong case that its proposal, in balance, would result in a significantly better long-term environmental condition on the site than that which would have resulted from a more traditional EQC protection approach. However, staff felt that the proposed disturbances to the EQC (in a different area from the areas covered by the proposed restoration project) were not supported by Plan policy.

On February 23, 2009, the Board of Supervisors held a public hearing on the application and approved the proposal. While recognizing staff’s perspective in regard to the policy issue, the Board felt that the environmental benefits of the proposal would outweigh the adverse environmental impacts and that the proposal therefore merited approval. Immediately after approving the application, the Board referred the policy issue regarding disturbances in EQCs to staff for review in coordination with the Planning Commission, the Environmental Quality Advisory Council and stakeholders. The Board specified that the review should ensure “that the County has a Policy that remains both functional and true to the spirit of environmental preservation and restoration.”

DISCUSSION

Since February 23, 2009, the Planning Commission’s Environment Committee, in coordination with EQAC, staff and others, has met on several occasions in order to frame the broad question regarding EQC disturbances into a series of more detailed questions that have served to set the stage for the development of this strawman draft. Questions that have been considered by the Committee have included:

- What functions can EQCs provide? Does existing Plan guidance, which establishes several purposes of the EQC system that are applied in determinations of where EQCs should be delineated, recognize these functions appropriately?
- Are there major categories of EQC disturbances that should be considered independently of one another when formulating policy guidance? For example, should different approaches be pursued for “unavoidable” disturbances as opposed to those that are more discretionary in nature?
- Should stormwater management facilities be considered as a separate category of potential impact? Is the current policy approach focusing on regional benefits and degraded EQC areas appropriate, particularly in light of the county’s watershed planning efforts?

- When evaluating proposals for disturbances to EQCs, should there be an attempt to develop a quantitative “scorecard” approach, or would it be best to focus more broadly and subjectively on benefits and adverse impacts associated with each proposal, recognizing site-specific issues and conditions? How have neighboring localities approached this question? Are there common approaches that have been applied within the region?

EQC Functions

The EQC policy is structured such that determinations regarding the presence or absence of one or more EQCs on a site should be based on whether or not the area(s) in question meet any of the purposes of the system. Specifically, habitat quality, connectedness, aesthetics and pollution reduction capabilities are identified as purposes of the EQC system. In staff’s view, the potential functions and values of EQCs are central to the policy question regarding proposals for disturbance to these areas, and there was general recognition in committee discussions that policy guidance regarding EQC disturbances should, in some way, be linked to the environmental benefits that EQCs can provide. An initial exercise that was undertaken in this discussion, therefore, was brainstorming regarding these potential functions and values. The results of this exercise are presented in Appendix 3. The following five broad categories of potential EQC functions/values were identified:

- Habitat values;
- Hydrologic values;
- Water quality values;
- Air quality and climate values; and
- Land use and other values

Note that these broad categories do not match precisely the broad EQC purposes that are identified in the Policy Plan. Also note that some of the potential EQC functions and values are not unique to EQCs but are also characteristics of forested areas in general. A challenge in developing policy guidance around potential EQC functions and values is that the existing policy framework focuses largely on functions that serve to differentiate EQCs from other areas (i.e., the stated EQC purposes are used to differentiate EQCs from other less-sensitive areas), while an assessment of EQC impacts and benefits associated with proposed disturbances can be viewed through a broader assessment of functions. This issue is discussed further in the next section of this report (“Strawman Proposals”).

Categories of EQC disturbances

As noted earlier, the EQC policy recognizes the need for consideration of certain intrusions into EQCs, and there is a long history of support for such disturbances. The policy issue that was raised by the Aerospace zoning application was not related to disturbances for sewer lines, storm sewer outfalls, or even road crossings to provide access to buildable portions of the site; rather the issue focused on the extent to which disturbances to the EQC beyond those needed for these activities could be supported. It was therefore apparent from the outset of the Environment Committee’s discussions that

policy guidance needed to consider the various circumstances under which disturbances to EQCs may be proposed. Staff identified three broad categories of disturbance: (1) disturbances that, by their nature, are unavoidable or that are otherwise supported by Plan policy; (2) disturbances associated with stormwater management; and (3) other proposed disturbances. This categorization approach was applied during discussions of the Planning Commission's Environment Committee and is retained within this document.

Stormwater management

In staff's view, the question of when stormwater management facilities should be considered in EQCs would be best addressed separately from broader discussions regarding unavoidable and other disturbances. While the Environment Committee did not debate whether stormwater management should be considered as a separate category from other proposed EQC disturbances, it did accept staff's suggestion for the purpose of its discussion.

Current Plan policy supports the consideration of stormwater management facilities in EQCs where they provide regional benefit or where the EQCs have been significantly degraded. In practice, staff has not felt that the presence of a degraded EQC alone is sufficient justification to support the consideration of one or more stormwater management facilities within EQCs--restoration efforts have typically been recommended in areas that have been degraded. However, regional stormwater management facilities have been supported in EQCs. Regional stormwater management facilities continue to have an important role in the county's stormwater management program, but they are no longer considered to be the preferred approach—they are one of many tools in the county's toolbox.

There has also been an increased focus on watershed management planning in Fairfax County. The Board of Supervisors has adopted several watershed management plans, and planning efforts are under way in all other watersheds in the county. Through the watershed management planning process, the conditions of the county's streams are being evaluated comprehensively, and site and area-specific strategies are being recommended to protect high quality resources and to restore streams that have been degraded. Through this process, environmental criteria are being applied in the evaluation of regional ponds as a stormwater management tool (as well as other strategies), and there is a potential to extend this approach generally, through Plan text, to proposals for locations of stormwater management facilities in EQCs.

Objective vs. subjective evaluation approaches, and approaches applied in neighboring localities

An initial area of focus of discussions at Planning Commission Environment Committee meetings was whether an approach to consideration of EQC disturbances should be based on a quantitative system of evaluation of impacts and benefits or if a more subjective, case-by-case approach would be preferable. Proponents of a quantitative approach noted that such an approach could be modeled on the quantitative processes that have been

established to assess the ecological quality of streams and to determine whether or not streams are perennial. Staff noted during these discussions that it does not support a quantitative approach to evaluating proposals for disturbances to EQCs and favors a more subjective approach, considering on a case-by-case basis the adverse impacts to EQC functions that would result from disturbances as well as benefits to these functions that would result from restoration and/or compensatory measures. Staff expressed a view that the development of a quantitative approach would require the establishment, on a countywide basis, of prioritizations, rankings or weightings of the various functions and values associated with EQCs; staff cautioned against attempting to do this because the determination of the relative importance of any one EQC function compared to any other such function would itself be subjective in nature and would be likely to vary considerably from one part of the county to another, and even from one site to another nearby site.

Because of differing perspectives on this issue, staff agreed to contact staff from the county's six surrounding large localities (the counties of Prince William, Loudoun, Arlington, Montgomery and Prince Georges and the City of Alexandria) to determine how they protect environmentally-sensitive areas (with a focus on streams and stream buffers) and how they address the question of proposed disturbances. At the request of an Environment Committee member, staff also contacted the Division of Chesapeake Bay Local Assistance, Virginia Department of Conservation and Recreation, to determine if the agency's staff could provide guidance on this question and/or identify other localities with approaches of note.

For each of the six area localities, staff reviewed relevant comprehensive plan policy as well as regulatory approaches to the protection of environmentally-sensitive areas. Staff also interviewed a member of staff of each locality who is involved, on a day-to-day basis, with the development and/or implementation of such policy and/or regulation. Results of this review are presented in Appendix 4. The following are of particular note:

- Approaches to the identification and protection of environmentally-sensitive areas vary widely among localities.
- Most localities rely primarily on regulatory approaches; Prince William County, Arlington County, and the City of Alexandria have designated Resource Protection Areas (RPAs) pursuant to Virginia's Chesapeake Bay Preservation Area Designation and Management Regulations. Alexandria and Arlington have extended protections beyond the state-minimum required RPA designation.
- Loudoun County's River and Stream Corridor Overlay District was overturned by the Circuit Court in 2004 due to insufficient public notice, but the county's Revised General Plan has retained guidance for this Overlay District, and it is still applied during the zoning process. Loudoun County is considering the establishment of a Chesapeake Bay ordinance with an RPA designation.
- Prince William County's comprehensive plan supports protection of some areas that are not otherwise protected as RPAs.

- Each locality focuses its reviews of proposals for disturbances on avoidance of impacts, followed by minimization of impacts and compensatory efforts.
- While quantitative aspects of proposals for disturbance are sometimes considered (e.g., acreage of impact vs. acreage of restoration; pollutant loading reductions associated with various levels of buffer area restoration), none of the localities has a quantitative focus in its evaluation of impacts and mitigation/compensation measures. There are no objective checklists, scorecards or quantitative criteria against which proposals for disturbance are judged, and each locality relies more on a subjective consideration of site-specific circumstances, applying the professional judgment of the local government staff, than on quantitative analyses.

The Division of Chesapeake Bay Local Assistance, Virginia Department of Conservation and Recreation, was not aware of other localities that have established sensitive area protection policies, such as the EQC policy, beyond their Chesapeake Bay ordinances and did not identify other localities of particular interest in regard to the disturbance issue.

STRAWMAN PROPOSALS

Staff has reviewed the adopted Comprehensive Plan text relating to the issue of disturbances in EQCs in light of the discussion provided above, and staff has crafted a “strawman” draft Plan Amendment to present one possible policy approach to this issue. Because the issue of concern is that of disturbances to EQCs and not the broader application of the EQC policy itself, staff feels that this exercise should focus on the policy as it relates to disturbances to EQCs and that there is not a need to revisit the policy in its entirety. That being said, this review does provide an opportunity to update the policy and consider revisions consistent with how the policy has been applied in practice.

In this light, when drafting the strawman proposal, staff worked with the existing policy structure and only proposed changes where it felt that: (1) existing text needs to be updated; (2) existing text does not accurately reflect how the EQC policy has been implemented in practice; or (3) existing text does not fully address the circumstances under which proposals for disturbances to EQCs should be considered. Staff did not pursue changes to policy guidance that is still current, that is being implemented effectively and that has not been identified as a policy concern.

The approach to the issue of disturbances that is suggested in the strawman draft would consider the three categories of EQC disturbances (“unavoidable” disturbances, stormwater management and other disturbances) independently. For the other disturbances, there would need to be a consideration of whether there would be a net environmental benefit associated with the proposal as well as a consideration of whether or not there is a net benefit within each of the applicable purposes of the EQC system. Therefore, staff has taken a close look at the Plan text addressing the purposes of the EQC system. The discussion below starts with an identification of issues relating to this

text and follows with an identification of issues relating to each category of EQC disturbance. After each of the sections identifying issues, a series of strawman proposals is identified. The strawman draft Plan Amendment is presented following the issue discussions and bullet-point lists of strawman proposals.

Purposes of EQCs

Issue:

The EQC policy begins with an identification of the purposes of the EQC system. Four broad categories of purposes are identified: habitat quality; connectedness; aesthetics; and pollution reduction capabilities. Any land that meets any one of these purposes can be recommended for inclusion in the EQC system. The brainstorming exercise conducted by staff and the Planning Commission's Environment Committee (see Appendix 3) identified five broad categories of potential EQC functions/values that overlap considerably with the four categories identified in the Plan. The list resulting from the brainstorming exercise is somewhat broader than the functions identified in the Policy Plan, in part because the Policy Plan list is determinative in terms of defining the extent of EQCs while the brainstorming list includes many functions that are shared by forested areas outside of EQCs.

Staff's view is that, for the purpose of determining where EQCs should be designated, the existing policy structure has worked well and there is not, therefore, a need to replace it as part of this policy review. However, staff also feels that there are functions that were identified during the brainstorming exercise that are consistent with the intent of the policy but that are not identified as being determinative in EQC designations; in staff's view, these functions should be added to the list of EQC purposes within the strawman draft. Specifically, staff feels that the broad range of hydrologic and stream buffering and protection functions of EQCs should be recognized in the draft. In addition, staff feels that the "connectedness" item should recognize conservation of biodiversity in addition to wildlife movement. Conversely, staff questions whether the inclusion of microclimate control and noise reduction are appropriate for identification as determinative factors in the designation of EQCs. In staff's view, these are clearly values of EQCs, but they are values that may be shared by all wooded areas, and in the case of noise reduction, this value would only be of note where the area in question (whether stream valley or upland) is located near a significant source of noise, where there is a noise-sensitive use that could benefit from being set back from the noise source, and then only where the vegetative cover is wide enough and dense enough to have a significant effect on noise levels. As staff is not aware of any circumstance when noise reduction or microclimate control has been a determining factor in an EQC designation, it is staff's view that these explicit references should, for the purposes of the strawman draft, be deleted from the list of determinative factors. However, staff feels that flexibility ought to be retained in the policy to provide for the ability to designate an EQC where such a designation can be justified on the basis of a non-water quality related pollutant removal capacity.

Staff also feels that the “aesthetics” heading should be broadened to reflect the passive recreational function that is recognized within this category. In staff’s view, aesthetics and passive recreational opportunities are different functions, and both ought to be recognized in the labeling of this category.

In discussing how to consider proposed disturbances in EQCs, the Planning Commission’s Environment Committee recognized that the Plan guidance regarding EQC purposes could help guide such decisions. However, there was also concern raised during the committee’s discussions that the Plan text that elaborates on the four broad categories of purposes may not be sufficient to fully capture the analyses that may need to be undertaken when evaluating proposed disturbances. There may, therefore, be benefit in providing clarification and/or examples under each of the broad headings. That being said, it should also be recognized that the list of EQC purposes is intended to inform decisions regarding where EQCs should be designated and is not intended as a comprehensive list of all potential benefits of EQCs. Indeed, EQCs have numerous additional benefits, many of which are shared by undisturbed areas outside of EQCs. These benefits are factors that can be considered in evaluations of proposals for disturbances to EQCs but should not guide EQC designation determinations.

Staff would also note that there is one additional area within this section of the policy for which wording changes may be warranted. The policy begins with the preface: “For ecological resource conservation.” While a broad interpretation could be made that all of the purposes, functions and values of EQCs are ultimately related to the protection and/or restoration of ecologically-valuable areas (including ecological resources downstream of properties subject to review), a narrower reading may generate concern that this text may be limiting when considered with all of the benefits that EQCs can and do provide. In staff’s view, this preface is not needed and can therefore be considered for deletion.

Strawman proposals:

- *Retain the structure of the text addressing EQC purposes.*
- *Retain the existing category headings, but make the following additions:*
 - *Add “and passive recreation” after “aesthetics” to more accurately reflect the clarifying text that follows; and*
 - *Add a new category titled “hydrology/stream buffering/stream protection” and list a broad range of related functions and values relating to this heading.*
- *Delete the preface to the policy that reads “For ecological resource conservation.”*
- *Augment the text that elaborates on each of the categories to more fully capture the potential functions and values relating to each of these headings. It is not the intent for this language to expand the reach of the EQC system; rather, it is the intent that this language can clarify and/or provide examples of each of these categories, thereby assisting the evaluation of proposals to disturb EQC areas.*

- *Revise the bullet titled “Pollution reduction capabilities” to remove explicit references to microclimate control and noise reduction, but to retain the broad title (as opposed to limiting it to water pollution reduction) in order to retain flexibility to designate EQCs where such a designation could be justified based on significant pollution reduction capabilities not related to water quality.*

Disturbances in EQCs

As noted earlier, proposals for disturbances to EQCs can generally be grouped into three categories: (1) disturbances that, by their nature, are unavoidable or are otherwise supported by Plan policy; (2) disturbances associated with stormwater management; and (3) other proposed disturbances.

Unavoidable Disturbances

Issue:

Current Plan policy recognizes that certain public infrastructure disturbances to EQCs are unavoidable. Perhaps the most notable example is the county’s system of sanitary sewer lines, which is generally a gravity-based system and therefore is located largely within stream valley areas. Sanitary sewer lines and connections to them have long been recognized as unavoidable disturbances. Other utility lines are also located in EQCs; where so located, connections to developable portions of properties typically need to extend through EQC areas. Storm sewer outfall pipes and/or channels from upland development areas also typically need to extend through EQCs to their points of discharge.

Current Plan policy recognizes that certain rights of way may also need to be located in EQCs. Public roads may need to be constructed across EQCs consistent with the Transportation Plan or in order to connect upland areas with each other and/or with other public roads. In addition, new rail alignments may need to cross through EQCs. The county’s stream valley trail network is located within EQCs, and new trail segments as well as connections to this trail network often must be located within EQCs.

Private roads or driveways that serve to provide access to buildable portions of sites may also need to cross through EQCs; it has been the county’s practice to provide for such access roads where there are no alternatives available outside of EQCs. In such cases, efforts are pursued to minimize the extent of EQC impacts.

The EQC policy recommends both the protection and restoration of an EQC system. Many of the county’s streams and stream valleys have been degraded, and efforts to restore these areas must occur within EQCs. While there is not currently Plan guidance that recognizes this circumstance, it has been the county’s practice, per the broad policy guidance, to support and encourage restoration efforts; the application of natural channel design strategies (creating stream channel conditions that will

accommodate anticipated hydrologic conditions) and use of native species of vegetation are stressed. Other restoration efforts, such as wetland and floodplain restoration, also support the EQC policy. There may also be opportunities to improve ecological conditions of EQCs through the removal of non-native, invasive species of vegetation.

Existing text within the EQC policy clearly recognizes the need for “unavoidable public infrastructure easements and rights of way” and supports designs that will minimize EQC impacts. However, there is currently not any explicit guidance addressing private access roads and driveways that may need to be located within EQCs in order to provide access to buildable portions of sites or adjacent properties. Further, while the EQC policy supports restoration efforts, there is no text in the policy that recognizes that such efforts, including stream stabilization, stream restoration, wetland restoration, floodplain restoration, replanting efforts and/or removal of non-native invasive species of vegetation, will need to be performed within EQCs.

Another issue relating to “unavoidable” disturbances to EQCs concerns the extent to which mitigation/compensation efforts should be pursued for such disturbances. Plan text currently recommends that any such disturbances be minimized, and more general text within the EQC policy supports restoration efforts. There is, however, no expectation that equivalent EQC restoration efforts will be pursued to offset the losses of EQC areas associated with these unavoidable disturbances. For the purpose of this strawman draft, staff is not recommending the addition of policy guidance that would establish an expectation for such offsetting measures; these disturbances must occur either to support the densities and intensities of development that are recommended in the Comprehensive Plan or to otherwise support recommended facilities (e.g., stream valley trails and connections to developed areas). However, because the EQC policy supports restoration of EQCs, and because there is typically the potential to restore portions of areas that need to be disturbed during construction, clarifying text is suggested to establish that disturbed areas should be restored to the extent possible.

Strawman proposals:

- *Retain the existing text pertaining to disturbances associated with unavoidable public infrastructure easements and rights of way and minimization of impacts. By doing so, there is not a need to add text to identify, more specifically, the uses that fall into these categories (e.g., utility lines, public roads, rail alignments, trails).*
- *Add text recognizing the need to provide for access roads to buildable portions of sites but establish that disturbances to EQCs for such roads should only be supported where there are no viable alternatives.*
- *Add text establishing that areas that are impacted by “unavoidable” disturbances should be restored to the extent possible.*
- *Add text to more broadly encourage restoration and related efforts that support the EQC policy through the improvement of ecological conditions within EQCs.*

Specifically, stream stabilization and restoration (using natural channel design methods), replanting (using native species), wetlands restoration and floodplain restoration would be recognized.

- *Add text to support the removal of non-native species of vegetation, but recognize the need for such activities only where not in conflict with county ordinances and only where they are pursued in a manner that will be least disruptive to EQCs.*

Stormwater Management

Issue:

Current Plan policy supports the consideration of stormwater management facilities in EQCs where they provide regional benefit or where the EQCs have been significantly degraded. In staff's view, this guidance is outdated and should be revised within the strawman draft to reflect more current thinking. As noted earlier, staff has not felt that the presence of a degraded EQC alone is sufficient justification to support the consideration of one or more stormwater management facilities within the EQC; typically, staff has only supported proposals for new stormwater management facilities in EQCs where they have been designed to provide regional benefits. Regional ponds are no longer considered to be the preferred approach to stormwater management; rather, they are one tool in the county's toolbox--they may be appropriate in some circumstances and inappropriate in others.

In staff's view, the review of policy regarding disturbances within EQCs provides an opportunity to update policy guidance regarding the circumstances under which stormwater management facilities should be considered for location in EQCs. The current focus on watershed management planning can be recognized in the refinement of this guidance, and the strawman draft proposes one possible approach to doing this. Specifically, the strawman draft would recognize that the provision of stormwater management facilities in EQCs would be appropriate where consistent with one or more recommendations in a Board of Supervisors-adopted watershed management plan. Other stormwater management facilities could be considered for location in EQCs but would need to be evaluated on a case-by-case basis in regard to their effectiveness in protecting downstream resources in comparison to stormwater management measures outside of the EQCs. In addition, the strawman draft would recommend that EQC functions affected by the stormwater management facility be replaced, enhanced and/or compensated for. In staff's view, this approach is supportive of state and federal permitting processes, which require evaluations of benefits and impacts for proposals to construct stormwater management facilities within wetlands or along streams and which typically require mitigation measures for impacts.

Strawman proposals:

- *Revise Plan text that suggests that any stormwater management facility that provides a regional benefit would be an appropriate activity in an EQC.*
- *Delete Plan text that suggests that the presence of a degraded EQC alone is sufficient justification to support the consideration of one or more stormwater management facilities in an EQC;*
- *Add Plan text supporting the provision of stormwater management facilities in EQCs where consistent with recommendations of a watershed management plan that has been adopted by the Board of Supervisors.*
- *Add Plan text establishing environmental criteria that would need to be satisfied to support the location of other stormwater management facilities within EQCs. Specifically, the following are recommended:*
 - *The provision of the stormwater management facility within the EQC should be more effective in protecting streams and should better support the goals of watershed management plans than would be stormwater management measures provided outside of the EQC; and*
 - *Efforts should be undertaken to replace, enhance and/or compensate for EQC functions that would be affected by the stormwater management facility.*
- *Repeat the text under Objective 2, Policy d within Objective 9, Policy a in order to more comprehensively address within the EQC policy those EQC disturbances associated with stormwater management. Alternately, the text could be provided within one of these policies and be referenced in the other.*

Other Disturbances

Issue:

While the EQC policy recognizes the ability to consider a range of disturbances categorized above as being unavoidable or related to stormwater management facilities, the policy does not suggest an ability to consider other disturbances. As noted earlier, this became a central issue of discussion during the Board of Supervisors' consideration of the Aerospace zoning application and the Board's subsequent request for this review. The Board's action on the Aerospace application highlighted that there may be circumstances when the consideration of such "other" disturbances to EQCs may be warranted. The Board's request for this policy review, though, reflected the Board's interest in ensuring that the EQC policy remain "both functional and true to the spirit of environmental preservation and restoration."

A considerable amount of discussion at the Planning Commission Environment Committee's meetings focused on policy direction that could be provided to incorporate needed flexibility into the implementation of the EQC policy without weakening the application of the policy. The committee expressed interest in the approaches that have been pursued in neighboring localities and the similarities among these localities in stressing avoidance of impacts first and the minimization of

and mitigation for impacts second. However, there was also recognition that there may be cases where these “other” disturbances could also be part of a development package that could be considered, in sum, to be supportive of the intent of the EQC policy. The committee expressed a clear desire to develop an approach that would only provide for the consideration of such disturbances under extraordinary circumstances and that would establish a stringent test for any such proposals in order to ensure that approvals of these proposals would be in furtherance of the intent of the policy.

In staff’s view, the purposes of the EQC policy as identified within the Policy Plan can serve as a useful frame of reference for the consideration of proposals for “other” EQC disturbances, as they serve to provide definition as to why the EQC areas in question were recommended for protection. By focusing on these EQC purposes, the process for consideration of proposals for disturbances can remain supportive of the intent of the EQC policy, as the stated intent is linked to these purposes. That being said, it should also be recognized, per the brainstorming exercise noted earlier, that the functions and values of EQCs extend beyond the list of EQC purposes and that it would be appropriate to consider a broader context of environmental impacts and benefits when evaluating proposals for disturbances to EQCs. In staff’s view, two questions therefore should be central to the evaluation of proposals for these “other” disturbances:

- Would there be a clear net environmental benefit from the proposal? The evaluation of the proposal could consider the full scope of EQC functions and values and even environmental functions and values associated with areas outside of the EQC.
- Would the proposal result in net benefits relating to the EQC purposes, as stated in the Plan, that are applicable to the proposal?

The strawman draft proposal incorporates these two questions as well as guidance stating that these disturbances should only be considered under extraordinary circumstances. Through this approach, a high standard will have been set for the favorable consideration of these disturbances, and it is staff’s view that this high standard will limit substantially the circumstances under which disturbances to EQCs will be proposed that are not otherwise recognized by the Plan.

Strawman proposals:

- *Add a paragraph addressing “other” disturbances to EQCs, stressing that such disturbances should only be considered in extraordinary circumstances.*
- *Establish an expectation that measures will be pursued to mitigate/compensate for these disturbances and that these measures will result in a clear net environmental benefit.*
- *Establish an expectation that there will be net benefits to most, if not all, of the EQC purposes (as stated at the beginning of the EQC policy) that are applicable to the proposed disturbances.*

STRAWMAN DRAFT PLAN AMENDMENT

MODIFY:

Fairfax County Comprehensive Plan, 2007 Edition, Policy Plan, Environment Section, page 7, as follows:

Objective 2: Prevent and reduce pollution of surface and groundwater resources. Protect and restore the ecological integrity of streams in Fairfax County.

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~~ meet one of the following conditions:

- They are consistent with recommendations of a watershed management plan that has been adopted by the Fairfax County Board of Supervisors; or
- They will:
 - Be more effective in protecting streams and better support goals of watershed management plans than stormwater management measures that otherwise would be provided outside of EQCs; and
 - Replace, enhance and/or be provided along with other efforts to compensate for any of the EQC purposes, as described in Environmental Objective 9, Policy a below, that would be affected by the facilities.

When facilities within the EQC are determined to be 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.

MODIFY:

Fairfax County Comprehensive Plan, 2007 Edition, Policy Plan, Environment Section, pages 14 through 15, as follows:

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

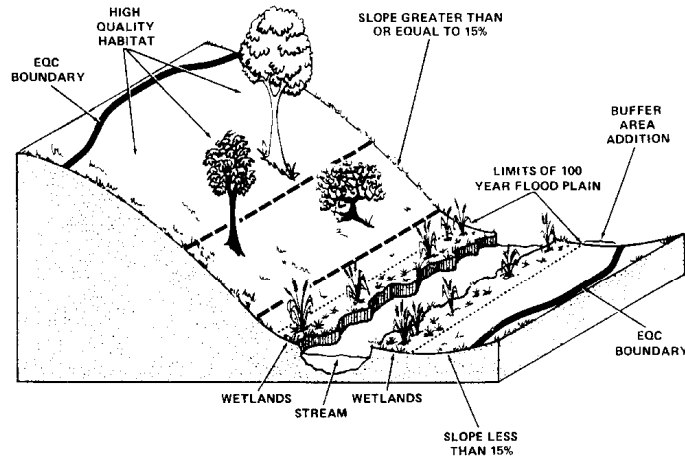
Policy a: ~~For ecological resource conservation, i~~Identify, protect and restore an Environmental Quality Corridor system (EQC). (See Figure 4.) Lands may be included within the EQC system if they can achieve any of the following purposes:

- 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. This may include: habitat for species that have been identified by state or federal agencies as being rare, threatened or endangered; rare vegetative communities; unfragmented vegetated areas that are large enough to support interior forest dwelling species; and aquatic and wetland habitats that are connected to other EQC areas.

- "Connectedness": This segment of open space could become a part of a corridor to facilitate the movement of wildlife and/or conserve biodiversity. This may include natural corridors that are wide enough to facilitate wildlife movement and/or the transfer of genetic material between core habitat areas.
- Aesthetics and Passive Recreation: This land could become part of a green belt separating land uses, providing passive recreational opportunities to people. This may include areas that would serve to provide connections between parks and/or other natural areas, support linkages to the countywide trail system, and/or separate incompatible land uses
- Hydrology/Stream Buffering/Stream Protection: The land provides, or could provide, protection to one or more streams through: the provision of shade; vegetative stabilization of stream banks; moderation of sheet flow stormwater runoff velocities and volumes; trapping of pollutants from stormwater runoff and/or flood waters; flood control through temporary storage of flood waters and dissipation of stream energy; separation of potential pollution sources from streams; accommodation of stream channel evolution/migration; and protection of steeply sloping areas near streams from denudation.
- Pollution Reduction Capabilities: Preservation of this land would result in significant pollutant reductions to nonpoint source water pollution, and/or, microclimate control, and/or reductions in noise. Water pollution, for example, may be reduced through: trapping of nutrients, sediment and/or other pollutants from runoff from adjacent areas; trapping of nutrients, sediment and/or other pollutants from flood waters; protection of highly erodible soils and/or steeply sloping areas from denudation; and/or separation of potential pollution sources from streams.

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):



A TYPICAL
ENVIRONMENTAL QUALITY CORRIDOR

Source: Fairfax County Office of Comprehensive Planning

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 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.

Modifications to the boundaries so delineated may be appropriate if the area designated does not benefit any of the EQC purposes ~~habitat quality, connectedness, or pollution reduction~~ as described above. In addition, some disturbances intrusions that serve a public purpose such as unavoidable public infrastructure easements and rights of way ~~are~~ may be appropriate. Disturbances for access roads should not be supported unless there are no viable alternatives to providing access to a buildable portion of a site or adjacent parcel. The above disturbances ~~Such intrusions~~ should be minimized and occur perpendicular to the corridor's alignment, if practical, and disturbed areas should be restored to the extent possible.

In general, stormwater management facilities should not be provided within EQCs unless they meet one of the following conditions:

- They are consistent with recommendations of a watershed management plan that has been adopted by the Fairfax County Board of Supervisors; or
- They will:
 - Be more effective in protecting streams and better support goals of watershed management plans than stormwater management measures that otherwise would be provided outside of EQCs; and
 - Replace, enhance and/or be provided along with other efforts to compensate for any of the EQC purposes, as described above, that would be affected by the facilities.

When facilities within the EQC are determined to be 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.

The following efforts within EQCs support the EQC policy and should be encouraged:

- Stream stabilization and restoration efforts where such efforts are needed to improve the ecological conditions of degraded streams. Natural channel design methods should be applied to the greatest extent possible and native species of vegetation should be used.
- Replanting efforts in EQCs that would restore or enhance the environmental values of areas that have been subject to clearing; native species of vegetation should be applied.
- Wetland and floodplain restoration efforts.
- Removal of non-native invasive species of vegetation from EQCs to the extent that such efforts would not be in conflict with county ordinances; such efforts should be pursued in a manner that is least disruptive to the EQCs.

Other disturbances to EQCs should only be considered in extraordinary circumstances and only where mitigation/compensation measures are provided that will result in a clear net environmental benefit. In addition, there should be net benefits relating to most, if not all, of the EQC purposes listed above that are applicable to the proposed disturbances.

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.

Appendix 1: Excerpts from the Policy Plan Volume of the Comprehensive Plan—Environmental Quality Corridors

Environment section, Objective 2, Policy d:

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.

Environment section, Objective 2, Policy l:

Policy l. In order to augment the EQC system, 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. To the extent feasible in consideration of overall site design, stormwater management needs and opportunities, and other Comprehensive Plan guidance, establish boundaries of these buffer areas consistent with the guidelines for designation of the stream valley component of the EQC system as set forth in Objective 9 of this section of the Policy Plan. Where applicable, pursue commitments to restoration of degraded stream channels and riparian buffer areas.

Environment section, Objective 9, with Policies a and b:

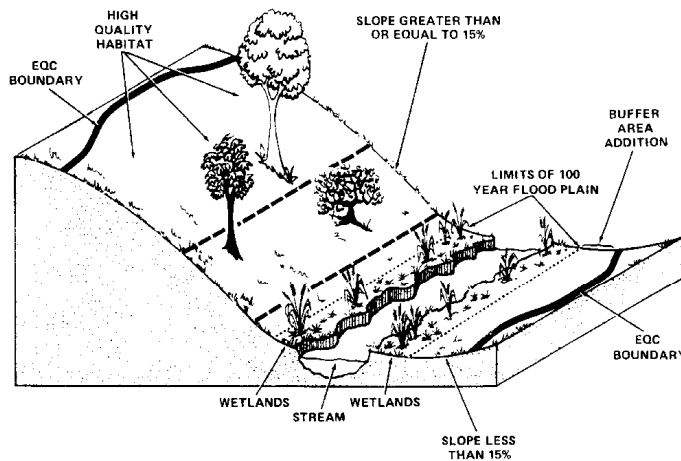
Objective 9: *Identify, protect and enhance an integrated network of ecologically valuable land and surface waters for present and future residents of Fairfax County.*

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, micro climate 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):



A TYPICAL ENVIRONMENTAL QUALITY CORRIDOR

Source: Fairfax County Office of Comprehensive Planning

- *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 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.*

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.

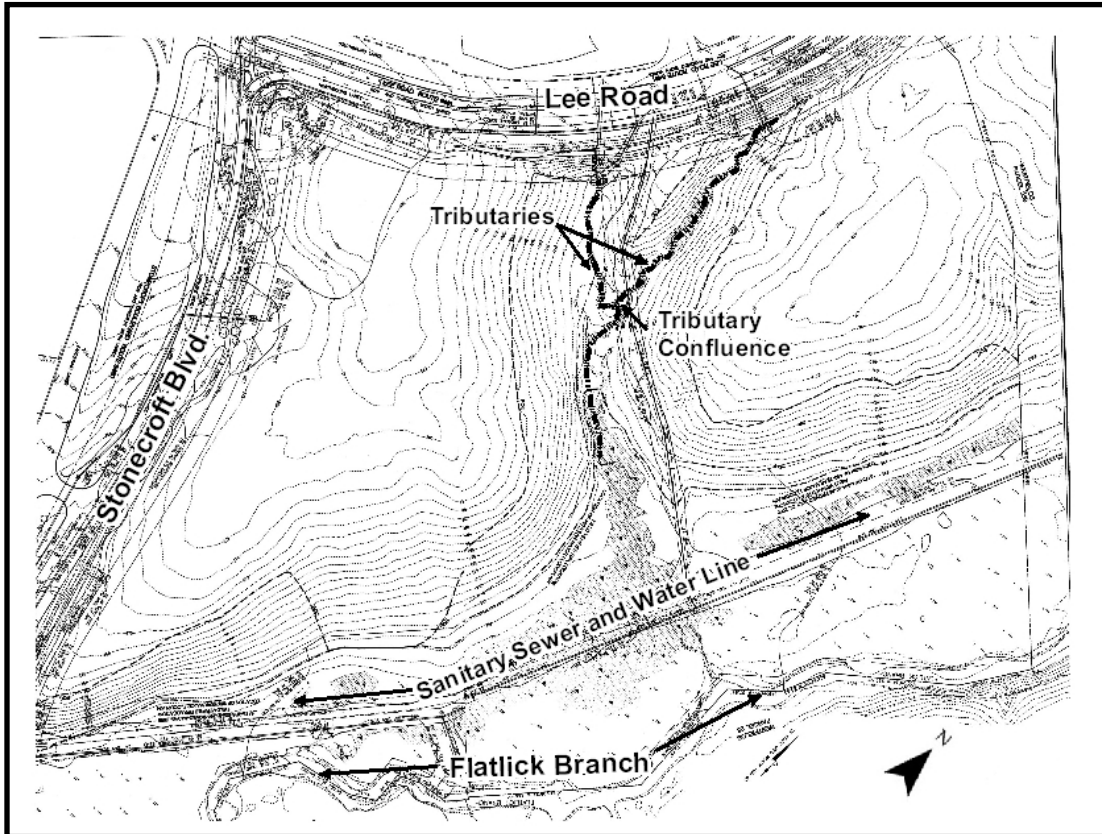
Appendix 2: Aerospace Rezoning Application and EQC Disturbances

In 2008, the Aerospace Corporation filed a rezoning application that generated questions regarding the extent to which the Environmental Quality Corridor policy should accommodate disturbances beyond those suggested in the policy where such disturbances are part of an overall package that could be considered to have, in balance, environmental benefits. The subject property (see Figure 1) contains a number of streams: Flatlick Branch, which flows roughly from north to south along the eastern property boundary; a smaller stream (hereinafter referred to as the “central stream”) that flows roughly from west to east and that bisects the property; and two smaller tributaries that feed the central stream. EQCs were identified along all of these streams. The two tributaries are experiencing considerable erosion resulting from increased volumes and peak velocities of stormwater runoff from upstream areas. This erosion continues a short distance along the central stream below the confluence of the tributaries; however, the stream is stable between that area and sewer and water line easements located parallel to and a short distance west of Flatlick Branch. Within the stable area, the stream branches into a number of distributary streams and enters a wetland area. A character of concentrated flow resumes to the east of the utility easements, and in this area, the stream is experiencing severe erosion resulting from downcutting in Flatlick Branch and a resulting headcut working its way upstream from Flatlick Branch. If not corrected, the erosion may eventually continue upstream into the easement area and into the wetland, threatening both.

Options for access to the property from Lee Road were limited as a result of the locations of a signalized intersection to the south and an entrance to a large office building to the north. It was recognized by both staff and the applicant that a point of access from Lee Road would need to cross through an EQC area associated with the tributary streams. However, instead of pursuing an approach to access that would have minimized disturbance in this area, the applicant proposed to fill the entirety of the two tributary stream valleys and to locate a visitor parking lot and visitor center/security processing facility in the filled area. The filling of this area would also provide the applicant with an opportunity to centralize the collection of stormwater runoff from much of the development, and the applicant’s stormwater management strategy incorporated underground detention facilities within this area as well as a variety of low impact development practices on the site. Because of the centralized collection of stormwater runoff in this area, disturbances elsewhere in the EQC for outfall channels could be avoided. In addition, a comprehensive stream restoration concept was proposed for the remaining portion of the central stream roughly below the existing tributary stream confluence. This restoration project would accommodate long-term, post development flows from the entirety of the upstream drainage area (including from the centralized stormwater management collection area) in a stable system, all the way down to Flatlick Branch. The concentrated flow in the stream channel would be spread as sheet flow into the existing wetland area (thereby maintaining the viability of the wetland), and the headcut erosion between Flatlick Branch and the utility easements would be resolved, thereby protecting the utility lines and wetland from potential damage. Additional stream

restoration efforts would be pursued along another area of headcut erosion on the site farther downstream.

Figure 1: Existing Conditions—Aerospace Property



In reviewing the proposal, staff expressed support for the stream restoration concept but did not support the extent of fill that was proposed for the two tributary stream valleys. The applicant made a strong case that its proposal, in balance, would result in a significantly better long-term environmental condition on the site than that which would have resulted from a more traditional EQC protection approach (i.e., minimization of clearing and grading along the headwater streams for access, utilities and storm sewer outfalls and protection of the remainder of the EQC [allowing for utilities and outfalls] without restoration efforts). However, nothing in the EQC policy anticipated the proposal to fill in the entirety of two tributary stream valleys in exchange for a comprehensive EQC restoration effort elsewhere on the site, and therefore staff recommended denial of the application.

On February 23, 2009, the Board of Supervisors held a public hearing on the application and approved the proposal. While recognizing staff's perspective in regard to the policy issue, the Board felt that the environmental benefits of the proposal would outweigh the adverse environmental impacts and that the proposal therefore merited approval. Immediately after approving the application, the Board referred the policy issue regarding disturbances in EQCs to staff for review in coordination with the Planning Commission,

the Environmental Quality Advisory Council and stakeholders. The Board specified that the review should ensure “that the County has a Policy that remains both functional and true to the spirit of environmental preservation and restoration.”

Appendix 3
Potential EQC Functions/Values—Results of a staff/Planning Commission Environment Committee brainstorming exercise
<u>Habitat Values</u>
Corridor for movement of wildlife
Conservation of biodiversity (e.g., presence of species richness and/or uniqueness within the EQC and/or intermixing of species and communities from different core habitat areas from around the EQC, thereby facilitating transfer of genetic material among these core areas)
General habitat quality (including habitat provided by narrow corridors)
Habitat for interior forest dwelling species/protection of core areas from edge species
Habitat for rare/threatened/endangered species or community type
High quality tree cover/support for tree canopy goal
High quality wetland habitat
High quality aquatic habitat
Fallen leaves/debris as a food source and cover for aquatic organisms
Presence of vernal pools (habitat for amphibians) and supporting forest habitat
<u>Hydrologic Values</u>
Flood control through temporary storage of flood waters and dissipation of stream energy
Storage of water in soil (resulting from high soil organic content, porosity and water-holding capacity)
Retention and evapotranspiration of water by vegetation
Groundwater recharge
Enhancement of base flow of streams
Retention of pervious cover
Moderation of sheet flow stormwater runoff velocities and volumes
Reduced site imperviousness (through concentration of development)
Accommodation of stream channel evolution/migration
<u>Water Quality Values</u>
Trapping of nutrients, sediment and other pollutants from runoff from adjacent areas
Trapping of nutrients, sediment and other pollutants from flood waters
Vegetative stabilization of stream banks
Shading of stream (stream temperature regulation—supports aquatic habitat)
Protection of highly erodible soils/steep slopes from denudation
Separation of potential pollution sources from streams

<u>Air Quality & Climate Values</u>
Carbon sequestration
Removal/absorption of air pollutants by trees
Temperature reduction in summer and associated air quality benefits
<u>Land Use and Other Values</u>
Aesthetic benefits
Passive recreation
Separation of incompatible land uses
Where adjacent to highways, buffering of noise-sensitive uses from noise sources
Provision of open space/greenways
Property value enhancement for adjacent areas?
Avoidance of adverse flooding impacts to structures/property
Avoidance of potential drainage complaints
Environmental Education

Stream and Buffer Area Protection and Disturbances: Alexandria, Virginia

Stream and Buffer Area Protection: Regulation and Policy

Environmental Management Ordinance--Chesapeake Bay Preservation Area Overlay District

- State minimum Resource Protection Area designation.
- Additional water quality performance criteria for intermittent streams and most nontidal wetlands: Protection of water quality functions required through the provision of a 50-foot vegetated area around these features or an equivalent combination of a smaller vegetated area and structural controls.
- Allowed and exempted uses identified.
- Exceptions allowed, but limited in extent (see below).
- In light of the extent of redevelopment that can occur in RPAs in Alexandria, Water Quality Impact Assessment reviews have a larger role than exceptions (see below).
- Additional criteria govern redevelopment in RPAs.

Floodplain Ordinance

- Restricts activities in 100-year floodplains.
- Variances and waivers can be granted by the City Council, but prohibitions on increases in 100-year water surface elevations in floodways (and ½ foot maximum increases elsewhere in the 100-year floodplain) remain.

Master Plan

- Broad support for protection of stream valleys and other environmentally-sensitive areas, but Plan does not define areas beyond those identified in the Environmental Management Ordinance and Floodplain Ordinance.

Disturbances: Policies and Practices

- Exception proposals must be reviewed by the Planning Commission; however, there have been no such proposals considered yet as they are strongly discouraged by staff.
- Some development and redevelopment proposals are reviewed administratively; there have only been a limited number of such proposals.
- Most RPA reviews focus on allowed redevelopment and water quality impact assessment reviews.
 - More detailed information required for “major” assessments (5,000 square feet or more of land disturbance in an RPA).
 - Review criteria stress minimization of impacts to RPAs, including the provision of BMPs to reduce pollutant loadings.
 - Mitigation measures (e.g., buffer area restoration) are typically sought by city staff and the Planning Commission.
 - Reviews are typically favorable where a net environmental benefit can be demonstrated.
 - Staff relies heavily on DCR/DCBLA’s Riparian Buffers Modification & Mitigation Guidance Manual to guide decisions on RPA mitigation efforts.
- While both quantitative and qualitative factors are considered during reviews, particularly as they relate to mitigation (e.g., pollutant loading reductions associated with various levels of buffer area restoration), decisions on disturbances and water quality impact assessments are ultimately based more on a consideration of site-specific circumstances and professional judgment rather than quantitative criteria.
- Both staff and the Planning Commission are vigilant in protecting RPAs—discretion and flexibility are applied cautiously.

Stream and Buffer Area Protection and Disturbances: Arlington County, Virginia

Stream and Buffer Area Protection: Regulation and Policy

Chesapeake Bay Preservation Ordinance

- State minimum Resource Protection Area designation expanded to include:
 - All natural stream channels and man made open channels depicted by the county's GIS
 - Contiguous slopes of 25% or greater located adjacent to the landward boundary of the RPA buffer
 - Contiguous slopes of 15% or greater located adjacent to the landward boundary of the RPA buffer in certain areas (currently the Potomac Palisades area).
- Allowed and exempted uses identified.
- Some RPA buffer modifications allowed.
- Exceptions allowed (see below).

Floodplain Management Ordinance

- Restricts activities in 100-year flood areas
- Waivers can be issued, largely based on health, safety and land use considerations
- Affected areas largely within RPAs; little development would be allowed in affected areas even absent this ordinance.

Comprehensive Plan

- Policies generally support stream valley preservation and improvement.
- Broader buffer area guidance beyond Chesapeake Bay Preservation Ordinance is not applied; Plan policy reinforces the ordinance (which itself is quite broad in its definition of RPA) as opposed to augmenting it with broader guidance.

Disturbances: Policies and Practices

- Some exceptions are reviewed administratively—most notably expansions to existing nonconforming structures (e.g., decks and additions)
- Other exceptions are considered by the Chesapeake Bay Ordinance Review Committee (appointed by the County Manager) at a public hearing
- Findings based on state requirements identified for the granting of exceptions.
- Only a few exception requests (10 or less) considered each year.
- Most exception requests propose only minor encroachments
- Review efforts focused on avoiding unnecessary encroachments and minimizing the extent of any encroachment needed to provide for a reasonable use of a property.
- Compensatory measures (e.g., additional plantings; LID stormwater management practices) are typically sought by the county.
- No county experience with proposals for large disturbances.
- There are no objective or quantifiable criteria incorporated into the exception review process—there is reliance on consideration of site-specific circumstances and professional judgment.

**Stream and Buffer Area Protection and Disturbances:
Loudoun County, Virginia**

Stream and Buffer Area Protection: Regulation and Policy

Zoning Ordinance

- Floodplain Overlay District limits uses within 100-year floodplains.
- Scenic Creek Valley Buffer requires building setbacks along all waterways with drainage areas greater than 640 acres (150-250 feet, with SWM/BMP reductions).
- Steep Slope Standards prohibit most land disturbing activities in areas with slopes greater than 25%; Development on slopes between 15% and 25% allowed with consideration of proposed disturbances and mitigation measures.
- Also Mountainside Development Overlay District.
- River and Stream Corridor Overlay District (RSCOD) overturned, but county is considering adoption of a Chesapeake Bay ordinance.

Revised General Plan

- RSCOD guidance still valid and still applied during the zoning process. Recommends protection of: rivers and streams draining 100 acres or more; 100-year floodplains; and 25%+ slopes starting within 50 feet of streams and floodplains to 100-foot maximum from stream or floodplain. 50-foot management buffer area (transitional—not a no-build area) included around floodplains and adjacent steep slopes. The 50-foot management buffer area is flexible and can be reduced if other RSCOD elements are not adversely impacted and performance standards are maintained. 100-foot minimum stream buffer area applied where other features are narrow.
- Uses in RSCOD policy area limited to those supporting biological integrity and health of the corridor.
- Transportation crossings, utilities, SWM facilities, public lakes and ponds, paths/trails, passive recreation and active recreation (including athletic fields) also allowed in floodplains upstream of the 640 acre drainage threshold.
- Plan supports protection of streams above the 100-acre drainage area threshold and no net loss of wetlands.

Disturbances: Policies and Practices

- Regulatory requirements not structured for consideration of trade-offs.
- Environmental Plan issues weighed along with a broader set of considerations.
- County generally successful at protecting RSCOD elements, including the minimum 100-foot stream buffer area. Most compromises focus on the 50-foot management buffer area; county has been successful at protecting stream buffer area components—staff unaware of disturbances.
- General Plan criteria for management buffer area reductions but not for disturbances to stream buffer areas (beyond list of allowed uses).
- Staff typically identifies efforts to minimize impacts to the corridor and compensatory enhancements—typically reforestation, removal of invasives, and low impact development practices.
- No net loss of wetlands pursued, stressing on-site mitigation as a preference.
- Staff will often report on acreages of proposed corridor impacts and restoration efforts, but there are only general criteria to judge the sufficiency of buffer area enhancement efforts.
- No objective checklist or quantifiable system—reliance on consideration of site-specific circumstances and professional judgment.

Stream and Buffer Area Protection and Disturbances: Montgomery County, Maryland

Stream and Buffer Area Protection: Regulation and Policy (Environmental Guidelines)

- Stream buffers recommended along all perennial and intermittent streams, with the latter defined broadly to include any stream with a defined channel or bed that flows at least once per year.
- Variable width buffer, ranging from 100-200 feet on each side of the stream, with wider widths along more sensitive systems (e.g., designated Trout Waters).
- 25% + slopes included where they begin within 200 feet of the stream.
- Entirety of 100-year floodplain included.
- Minimum 25-foot buffers required around nontidal wetlands—expansion up to 100 feet for steep/highly erodible soils; minimum 100-foot buffers around Wetlands of Special State Concern.
- Additional buffer areas can be applied to protect rare, threatened or endangered species or other species of concern.
- More stringent buffer area requirements within four defined “Special Protection Areas.”

Disturbances: Policies and Practices

- Environmental Guidelines generally limit disturbances to locationally-necessary infrastructure and bikeways/trails.
- However, temporary E&S controls in unforested areas can be considered, as can be stormwater management/best management practice facilities where location in the buffer is needed to maximize their effectiveness, subject to consideration of several case-by-case factors (e.g., conditions in the buffer area, protection of additional buffer area to compensate for disturbance).
- Flexibility to consider, on a case-by-case basis, other small disturbances where “consistent with a comprehensive approach to protecting areas that are critical to preserving or enhancing streams, wetlands, and their ecosystems.”
- Avoidance, minimization, protection of the most sensitive areas and compensation all considered.
- Avoidable disturbances to buffer areas generally not supported—trade-off proposals generally not considered.
- Where avoidable disturbances are considered, the core of the resource (i.e., the stream or wetland) is generally not compromised but the buffer width is reduced or averaged.
- Like-kind trade-offs typically sought (e.g., reforestation to compensate for clearing)
- Otherwise, professional judgment is applied in determining whether or not a developer’s proposal should be accepted.
- No formal objective checklist or quantifiable system —reliance on consideration of site-specific circumstances and professional judgment. By practice, compensation begins at two for one with equal resource value.

Stream and Buffer Area Protection and Disturbances: Prince George’s County, Maryland

Stream and Buffer Area Protection: Regulation and Policy

Subdivision Regulations

- Minimum 50-foot buffers from each bank of a perennial (or intermittent) stream.
- Planning Board discretion to expand buffers to include 100-year floodplains, adjacent slopes of 25% or greater (15% or greater where soils are highly erodible), and additional areas.
- 25-foot buffers required around nontidal wetlands.
- Regulatory changes in process to standardize approaches countywide per current practice (to clarify consistency of application inside and outside of the Patuxent River watershed).

Chesapeake Bay Critical Areas

- Minimum 100-foot buffer from mean high tide line (primary buffer).
- Slopes of 15% or more and wetlands incorporated into the buffer area as well (secondary buffer).
- Regulations being updated.

Approved General Plan

- Environmental Overlays reflecting regulated areas along rivers and streams are identified on the Plan map.
- Support for preservation, protection and enhancement of green infrastructure elements and surface and groundwater features.

Countywide Green Infrastructure Plan

- Green Infrastructure Plan identifies strategies aimed at protecting ecologically valuable areas, with policy statements supporting consideration during the development review process—focus of policy statements is largely on consideration of regulated areas.

Disturbances: Policies and Practices

- Subdivision Regulations require buffer area preservation “to the fullest extent possible” in the Patuxent River watershed; regulatory changes would apply this guidance countywide.
- “Variation request” proposals (similar to variances) currently required outside of the Patuxent River watershed.
- Plan policy calls for strict limits on development impacts to regulated areas, subject to mitigation efforts as close to the areas of impact as possible.
- Three-tiered sequence for considering impacts: (1) avoidance; (2) minimization; (3) mitigation (preferably close to the areas of impact; not pursued for minor encroachments).
- Professional judgment is used in evaluating current conditions of affected areas and whether or not the benefits of mitigation packages outweigh the loss of streams/buffers.
- No checklist or quantifiable system is currently in use—reliance on consideration of site-specific circumstances and professional judgment.

Stream and Buffer Area Protection and Disturbances: Prince William County, Virginia

Stream and Buffer Area Protection: Regulation and Policy

Chesapeake Bay Preservation Area Overlay District

- Resource Protection Areas designated per state requirements.
- Allowed and exempted uses follow state guidelines.
- Exceptions allowed (see below).

Flood Hazard Overlay District

- Focus on flood protection and not environmental considerations.
- A number of uses allowed in “flood fringe” areas.
- RPA exceptions required, through, where floodplain uses are also proposed for RPAs.

Comprehensive Plan

- Policy supports provision of minimum 50-foot buffer areas along streams that are not otherwise protected under the Chesapeake Bay program.
- Focus during zoning process is on intermittent, rather than ephemeral, streams.
- Adjacent wetlands and slopes of 25% or greater are also recommended for inclusion in buffer areas.
- Plan policy also discourages development within 100-year floodplains associated with perennial streams and adjacent steeply sloping areas (15%-25% and greater in areas with highly erodible soils, highly permeable soils or marine clay soils).

Disturbances: Policies and Practices

- Administrative RPA exceptions for specific circumstances.
- Chesapeake Bay Preservation Area Review Board approval required for other exceptions.
- Findings based on state requirements identified for the granting of exceptions.
- Key considerations in exception reviews include: condition(s) of RPA area(s) proposed for encroachment; proposed post-development condition of the RPA(s); proposed improvements to the RPA, including square footage of encroachment vs. square footage of protection and restoration
- RPA exception requests consider some quantitative criteria but are generally based on a qualitative professional judgment as to whether the proposed outcome is preferable environmentally to a strict application of the RPA requirements.
- Environmental Constraints Analyses required for zoning applications—ID sensitive environmental resources.
- Environmental factors weighed along with a broader set of considerations.
- Protection of sensitive areas is generally expected, but there is flexibility, particularly on sites that are heavily constrained, and negotiations do occur in regard to unregulated sensitive areas.
- A positive environmental balance is sought, although there are no objective or quantifiable criteria—there is reliance on consideration of site-specific circumstances and professional judgment.