

5.0 Evaluation and Recommendations

Monitoring results continue to produce a broad range of trend data that will help assess how effective careful water quality review, performance goal setting, improved site planning and intensive BMP controls are in mitigating development impacts in SPA's. Although the current program seems to be working well overall, data from some SPA monitoring sites have shown temperature and sedimentation impacts accompanying new development projects. While the sediment pulses may be transitory and short term, the temperature impacts may not be. Effectiveness in mitigating impacts cannot be fully judged until more development projects have been completed and their long term effects on streams evaluated. Currently, the program is continuing to generate a comprehensive set of information on baseline conditions in the SPAs. Good information is also being generated on the effects of construction and the efficacy of BMPs produced under SPA guidelines. In the meantime, practices and procedures continue to be refined and improved in order to enhance the overall effectiveness of the program.

In the past year we have begun to get a very limited amount of BMP monitoring data on completed construction projects that can be compared to conditions prior to construction. BMP monitoring data received to date has indicated that construction impacts are observed in SPAs. Most observed impacts seem to be minor and transitory. Nonetheless, in some cases, development may be affecting water quality. Declines have been observed in the Right Fork of Paint Branch and in Piney Branch that may be attributable in part to development impacts. We will continue to monitor these areas closely and attempt to gain a better understanding of the causes for these declines. We expect that much more of the BMP monitoring data we will be receiving in 2002 will reflect post-construction conditions. This should provide much more information on the effectiveness of BMPs in maintaining water quality in SPAs. The pace of construction in Clarksburg and Piney Branch is also increasing rapidly. This will begin to generate BMP monitoring data on very large construction projects.

Some refinement of the SPA regulations (Executive Regulation 29-95, "Water Quality Review for Development in Designated Special Protection Areas") may also be in order. We have identified an aspect of the regulations that may have unintended and undesirable effects with regard to BMP monitoring data. That is the requirement that all development sites which need to submit a water quality plan must do some sort of BMP monitoring. This has been very difficult to administer in an equitable manner due to great differences in both the nature of new development projects and in the site designs. Some projects, because of the way they are laid out, are better suited to monitor BMP performance and as a result may have more monitoring requirements. In addition, BMP monitoring requirements have resulted in many relatively small projects doing some limited monitoring which may not be adequate to fully understand how BMPs are functioning and whether or not performance goals are met. Finally, the ability of a limited SPA staff to track and analyze BMP monitoring data submitted from the rapidly growing number of projects will soon be surpassed. For these reasons it is felt that modification of SPA regulations, in regard to BMP monitoring requirements, may be needed to improve this situation.

Some portions of SPAs are also targeted for stream restoration. This restoration is intended to improve stream habitat in areas already degraded by development which occurred before the

SPA program came into effect. Older developments frequently lack adequate stormwater controls, as pre-SPA requirements were less stringent. This restoration work is funded under the Department of Environmental Protection's Capital Improvement Program (CIP), or through direct mitigation efforts by developers. Restoration projects have been very beneficial throughout the County and further utilization of restoration techniques could have a great impact in some areas of the SPAs. Monitoring in the coming year will continue to evaluate the effects of these projects on the streams.

Several areas have been identified where encroachment into parklands is adversely affecting streams. Awareness of this problem has resulted in improved enforcement of conservation easements and the issuance of violations and restoration orders when necessary. In some areas encroachments have not been addressed and require further attention.

The current series of droughts is an extreme event. Monitoring in 2000 showed that the streams were adversely affected by the 1999 drought. Some areas and components have recovered faster than others. The area is also experiencing drought conditions in 2002. Further monitoring will provide information on how streams and aquatic life are affected by this climatic extreme.

The decline in the benthic macroinvertebrate community at many stations in Piney Branch is troubling. Work in the past year has indicated that nutrients may be a factor in this decline. Investigations will continue in 2002 to gain a better understanding of the situation, causes and possible remedies.

DEP also continues to refine its stream monitoring program. The approved fiscal year 2001 budget supported the installation of three stream gages to assess changes in stream base flow and storm flow conditions related to changes in watershed development. We will be installing these gages in each of the three SPAs this year.

Appendix 1: Explanation of the Special Protection Area Program

App. 1.1 Purpose of Special Protection Areas.....	121
App. 1.2 Designated Special Protection Areas.....	121
App. 1.3 Water Quality Plan Review Process.....	121
App. 1.4 Public Input.....	122
App. 1.5 Agency Review and Approval of Water Quality Plans.....	123

App. 1.1 Purpose of Special Protection Areas

Article V of the Montgomery County Code defines Special Protection Areas (SPA's) as geographic areas which may be designated by the County Council where: "...1) existing water resources or other environmental features directly relating to those water resources are of high quality or unusually sensitive; and 2) proposed land uses would threaten the quality or preservation of those resources or features in the absence of special water quality protection measures which are closely coordinated with appropriate land use controls...."

SPA program purposes specified in Article V are to:

- 1) establish coordinated procedures, performance goals, criteria, and requirements for development in SPA's that will mitigate adverse impacts on water resources during and after construction or other land disturbing activities; and,*
- 2) provide a focused, coordinated approach for water quality protection and monitoring in SPA's.*

App. 1.2 Designated Special Protection Areas

To date, the County Council has designated three areas within the County as high quality stream systems which are in need of measures beyond current standards to assure that they are protected to the greatest extent possible from the impact of master planned development activities (Figure 1). In chronological order of their designation these SPA's are: the Clarksburg Master Plan SPA; the Upper Paint Branch Watershed SPA; and the Piney Branch Watershed SPA. Once Special Protection Areas are designated all subsequently approved plans for development, except for those with a valid record plat recorded prior to October 31, 1994, are required to comply with Executive Regulation 29-95, Water Quality Review for Development in Designated Special Protection Areas.

App. 1.3 Water Quality Plan Review Process

The SPA program requires the Montgomery County agencies and M-NCPPC to work closely with project developers to pro-actively address possible impacts to the existing stream conditions and to guide the development of related concept plans for site layout, environmental buffers, forest conservation, site imperviousness, stormwater management, and sediment control earlier in the regulatory review process. Outside of SPA's, County and M-NCPPC staffs generally are able to review a project only *after* a plan is formally submitted by an applicant showing a proposed site's conceptual layout and stormwater management designs. This review typically occurs for the preliminary plan of subdivision. (Review of a proposed project's conformance to environmental protection requirements and guidelines may also occur with a site plan, special exception application, mandatory referral, or zoning application). This sequencing of plan review requires a reactive response by County and M-NCPPC staffs to approve projects in the development review process. This often necessitates major modifications to development plans when County staff or M-NCPPC staff find that environmental protection measures proposed by the applicant are inadequate.

Within SPA's, County and M-NCPPC staffs are now able to convey environmental protection goals, objectives, and concerns to the applicant of a proposed development project *before* the applicant designs the initial site layout concept for the project. The SPA program is designed to put the environmental issues up front in planning for land development within the SPA's. This proactive approach reduces the potential for negative environmental impacts by requiring the County and the M-NCPPC to provide detailed environmental information and guidance on enhanced protection measures to the applicant prior to the concept plan design stage and before the formal development review process begins. Applicants are then able to design projects which take into account current available information on stream conditions, forest conditions, types of soils, site topography, and other environmental features, to address identified environmental constraints, and to incorporate enhanced BMP's before concept plans are submitted.

Under the SPA program, most applications for new development projects in SPA's are required to submit water quality plans which will provide a more comprehensive package of information to the County than is required as part of the more typical (i.e., non-SPA) development review process.

In addition to evaluating the stream conditions, the SPA review process includes site visits, analysis of subwatershed environmental characteristics, investigation of existing environmental problems, avoidance and/or minimization of the long term impacts of the development, and implementation of BMP monitoring plans.

App. 1.4 Public Input

A water quality plan is a document submitted by a permit applicant that demonstrates how a new development project within a SPA proposes to meet certain site-specific, watershed protection goals. It is required for most development projects within SPA's. Typically, permit applicants must prepare both a preliminary and a final water quality plan.

After submission of a preliminary water quality plan, a SPA public information meeting will be held if requested in accordance with Executive Regulation 29-95. At these meetings developers present technical and site design information and methods to the public which show how the water quality plan will meet the performance goals for the SPA as specified in the SPA Conservation Plan. These meetings produce useful dialogue between the public, the County, M-NCPPC, and project developers regarding site design, environmental sensitivity, and BMP selection.

After considering input obtained at an informal public information meeting, the DPS, in coordination with DEP, acts on those aspects of the water quality plan in which the two agencies have lead agency responsibility (see Appendix 1.5 below for summary of lead agency responsibility in water quality plan review).

In addition, the Planning Board holds a public hearing for a water quality plan, as either part of, or in conjunction with a public hearing for the proposed development project itself. The Planning Board is required to review and act on those aspects of the water quality plan in which the M-NCPPC has lead agency responsibility (see also Appendix 1.5 below).

App. 1.5 Agency Review and Approval of Water Quality Plans

The SPA law requires that water quality plans for a project be approved by DPS, in coordination with DEP, and the Planning Board before the project can proceed. Each agency has lead role responsibility for different components of a water quality plan. M-NCPPC has lead agency responsibility for site imperviousness requirements and environmental guidelines, environmental buffers, and forest conservation. Lead agency responsibility for DPS covers stormwater management controls, sediment and erosion controls. DEP has lead agency responsibility for carrying out and reporting results from the SPA stream monitoring program, performance monitoring for best management practices and for preparing SPA conservation plans.

Appendix 2: Public Lands Encroachment Resolution



DEPARTMENT OF ENVIRONMENTAL PROTECTION

Douglas M. Duncan
County Executive

James A. Caldwell
Director

September 10, 2001

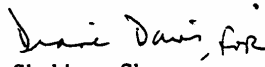
Douglas M. Duncan
County Executive
Executive Office Building
101 Monroe Street
Rockville, MD 20850

RE: Resolution on Private Landowner Encroachment in Park Property

Dear Mr. Duncan:

I am pleased to forward this Resolution adopted by a majority of the Water Quality Advisory Group members present at the September 10, 2001 regular meeting. This Resolution conveys the Group's endorsement of any efforts which can be undertaken to bolster resources within M-NCPPC to more aggressively address private landowner encroachment on Park Property, specifically in stream corridors. Please contact me at 301.309.0475 or at ssharma@enviroexperts.net with any questions or comments you may have about this important issue.

Sincerely,


Shobhana Sharma
WQAG Chair

cc: Blair Ewing, Council President
Arthur J. Holmes, Jr. Chairman, Planning Board
Members, Water Quality Advisory Group

attachment

Water Quality Advisory Group

255 Rockville Pike, Suite 120 • Rockville, Maryland 20850 • 301/217-6307, FAX 301/217-6376

**Water Quality Advisory Group
RESOLUTION**

Resolution No.: 04-2001
Title: Encroachment Issues
Introduced: 8/13/01
Adopted: 9/10/01
Authors: Group Effort
To: Montgomery County Executive, County Council, Planning Board

Subject and Background: In June 2001 the Water Quality Advisory Group (WQAG) received a briefing from the Department of Environmental Protection (DEP) on the findings and recommendations in the 2001 Annual Report on Special Protection Areas (SPA). The briefing noted that DEP was encountering problems with private landowner encroachment on parkland and conservation easements in the Paint Branch Special Protection Area. This was interfering with the county's ability to implement Capital Improvements Program (CIP) projects that protect and restore streams and help implement the objectives of the SPA program, the Anacostia Watershed Restoration Agreement, and the *Countywide Stream Protection Strategy*. The problem is particularly vexing when encountered in small and fragile headwater streams where DEP is working in partnership with the M-NCPPC and many other agencies and community groups to implement habitat improvement projects.

In August 2001 the Maryland National Capital Park and Planning Commission (M-NCPPC) briefed the WQAG on the legal remedies and staff resources they have available to address private landowner encroachment issues. The M-NCPPC legal staff representative indicated that the M-NCPPC encounters thousands of encroachment problems on its 27,000 acres of parkland. In view of the extent of the problem, the M-NCPPC has achieved varying success in resolving these problems through various public education, notification, and enforcement procedures. On conservation easements dedicated through the development review process, enforcement is apparently a low priority and largely driven by complaints, rather than by a proactive investigation and follow-up enforcement program. While the M-NCPPC continues to make significant expenditures for parkland to reserve additional stream buffer areas in Paint Branch and elsewhere, the WQAG is concerned that there are insufficient resources available to protect existing stream buffers and conservation easements from encroachment activities, which illegally interfere with their intended conservation purpose.

Action:

1. The WQAG recommends that the County Executive and Council request the Montgomery County Planning Board to place a higher priority on regularly targeting and notifying the affected property owners about their responsibilities regarding protected on-site conservation easements and adjacent stream valley parkland and on enforcement actions necessary to resolve encroachment problems.
2. Initial priority in the targeting effort should be on protecting buffer parkland and conservation easements located adjacent to fragile headwater streams where undisturbed

buffers are especially critical to water quality, habitat, and biological resources protection and propagation.

3. The M-NCPPC should use Geographic Information Systems (GIS) application capabilities to proactively investigate the incidence of encroachment on parkland and easements and establish a database for tracking and aggressive enforcement against offenders.
4. The Planning Board should be requested to report upon the incidence of encroachment and pertinent enforcement outcomes as a Program Measure to be submitted to the Office of Management and Budget as part of the annual operating budget review process and provide copies to the WQAG to keep us informed.

Shobhana Sharma
Chair Name



9/24/2001
date



January 11, 2001

Shobhana Sharma
WQAG Chair
Department of Environmental Protection
255 Rockville Pike, Suite 120
Rockville, Maryland 20850

RE: Resolution on Private Landowner Encroachment in Park Property

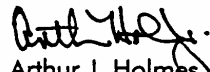
Dear Ms. Sharma:

Thank you for your letter of September 10, 2001, to County Executive Duncan expressing the Water Quality Advisory Group's (WQAG) interest in private landowner encroachment on park property. As you know, Michele Rosenfeld, Associate General Counsel, briefed the WQAG in August of 2001 on encroachment enforcement within parkland. In response to some of the concerns raised by WQAG members during that briefing, Ms. Rosenfeld recently conducted training for all Park Managers to remind them of the process in place to enforce encroachments within parkland. I expect enforcement efforts will increase as a result of that training. You also may be interested to know that the Commission will be working toward a comprehensive Geographic Information System layer to identify park lines, which may be helpful with future enforcement efforts.

Finally, to increase our current enforcement efforts to the extent you recommend would require additional staffing. As you know, the County faces serious fiscal constraints in its upcoming budget review process, and consequently I do not see that this level of effort would be funded in the face of other public needs.

If you have any questions or need additional information please contact Ms. Rosenfeld at (301) 495-4646. Thank you.

Sincerely,



Arthur J. Holmes, Jr.
Chairman

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Cc: Steven A. Silverman, President
Douglas M. Duncan, County Executive
Charles R. Loehr, Director of Park and Planning
Jeff Zyontz, Chief, County-wide Planning

Appendix 3: Glossary of Terms

BMP - Acronym for 'Best Management Practice', refers to either a structure or practice that is designed to either improve water quality or reduce the impact that storm water runoff imparts on the receiving stream. Examples include but are not limited to: 1) storm water retention ponds - purpose is to collect, hold and release storm water runoff at a reduced rate, 2) bioretention areas - an area of densely planted wetland plants that act to uptake nutrients from stormwater runoff, 3) infiltration trench - purpose is to get as much storm water runoff into the ground as possible thus reducing the volume of runoff and recharging groundwater which is important in maintaining baseflow in a nearby stream.

IBI - Acronym for 'Index of Biological Integrity' - the IBI is simply a method of comparing the biological community found in any stream to that found in reference streams. Reference streams are the "least impaired" streams within the Montgomery County region. By measuring how closely a stream compares to the reference condition, a relative assessment can be made of resource condition. The IBI rates the resource condition as excellent, good, fair, or poor. An excellent rating is equivalent or comparable to the reference condition, while a poor rating indicates a condition having little or no similarity to the reference condition. DEP has developed an interim IBI for both fish and benthic macroinvertebrates that is specific to the Montgomery County region.

Benthic Macroinvertebrates - Small creatures that spend at least part of their lives in or on the stream bottom. The name 'benthic macroinvertebrate' derives from the fact that they are bottom dwelling (benthic), large enough to see with the naked eye (macro), and without backbones (invertebrates). Benthic macroinvertebrates include not only insects but also crustaceans (crayfish), oligochaetes (worms) and mollusks (freshwater clams, snails).

Embeddedness - Refers to the extent to which rocks (gravel, cobble or boulders) are covered or sunken into the silt, sand or mud on the stream bottom. This is an important assessment in that many stream inhabitants occupy the spaces in between the rocks on the stream bottom. Thus, as embeddedness increases there are fewer spaces in between the rocks as this space is filled with sediment and therefore fewer stream inhabitants.

Riffle - That portion of a stream where water flows fast and shallow over rocky substrate. This area of a stream is where a majority of the benthic macroinvertebrates live along with several species of fish.

RELATED DOCUMENTS:

- SPA Annual Report, 2000
- SPA Annual Report, 1999
- SPA Annual Report, 1998
- Clarksburg Conservation Plan
- Piney Branch Conservation Plan
- Upper Paint Branch Conservation Plan

All of the documents cited above are available online in PDF format on our askDEP.com website. In addition, the Department of Environmental Protection maintains an extensive collection of annual, technical, and general reports, public information factsheets, and related publications. Many are available in both PDF and HTML format, and in some cases, print copies of documents are available. Please contact us for more information.



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