



2014 Annual Report on the Environment

Environmental Quality Advisory Council

Summary Report

A Fairfax County, Virginia
Publication
November 2014



A detailed version of this report is available in the attached CD and is available online at: www.fairfaxcounty.gov/eqac



To request this information in an alternate format, call the Department of Planning and Zoning: (703) 324-1380 TTY 711



The cover consists of pictures taken in Fairfax County. From top left clockwise: Red Fox, White-Tailed Deer, male Cardinal, American Toad, Mourning Dove, Grey Squirrel, Red-Shouldered Hawk, Great Blue Heron, Raccoon, Hoverfly, Robin Eggs, Garter Snake, Blue Dasher Dragonfly, female Cardinal, Bald-Faced Hornet.

Photos by Jack Baker. Cover design by Matthew Baker, Student Member, Environmental Quality Advisory Council.

ANNUAL REPORT
on the
ENVIRONMENT
2014



SUMMARY REPORT

Fairfax County, Virginia

Environmental Quality Advisory Council

November 2014

Printed on recycled paper

**A detailed version of this report is provided in the attached CD
and is available on-line at www.fairfaxcounty.gov/eqac**

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Introduction

This year's Annual Report on the Environment has been prepared by the Environmental Quality Advisory Council. Staff support for the coordination and printing of the report has been provided by the Planning Division of the Department of Planning and Zoning.

The Annual Report on the Environment, which is an update on the state of the county's environment, serves a threefold purpose. First, it is intended to assist the Board of Supervisors in evaluating ongoing environmental programs and to provide the basis for proposing new programs. Second, the document aids public agencies in coordinating programs to jointly address environmental issues. Third, the report is intended to inform residents and others who are concerned with environmental issues.

This year's report in two formats: (1) a detailed report; and (2) a summary report providing highlights of recent activities, key issues and comments and recommendations associated with each of the major topical areas covered in the larger report. Both report formats are provided electronically, but only the summary document is being made available in hard copy.

The report includes chapters on major environmental topics including: climate change and energy; land use and transportation; air quality; water resources; solid waste; hazardous materials; ecological resources; wildlife management; and noise, light, and visual pollution. Also included are: EQAC's "Scorecard" of progress made on previous recommendations; contacts for reporting potential environmental crimes/violations; an overview of stewardship/volunteer opportunities; and a "spotlight" on three environmental initiatives of Fairfax County Public Schools--High performance and sustainable schools; Get2Green Environmental Education and Action; and collaboration between FCPS and the county's Stormwater Planning Division on stormwater management plans for school properties. EQAC commends FCPS for working towards improved environmental performance in these areas. In addition, the detailed report includes appendices addressing: state legislation relating to the environment; resolutions and positions taken by EQAC over the past year; the county's Environmental Excellence Awards; and acronyms and abbreviations used in this report. Finally, new to this year's report are the following: a summary of EQAC activities since the last report was published; and an appendix highlighting the county's Environmental Improvement Program and EIP project selection process.

Within each chapter of the detailed report are: a discussion of environmental issues; a summary of relevant data; and a discussion of applicable government programs. Most of the chapters include information regarding stewardship opportunities and conclude with recommendations that identify additional actions that EQAC feels are necessary to address environmental issues. References are generally presented only in the detailed report format. Recommendations are again presented in two formats: items addressing ongoing considerations and continued support for existing programs are noted as "comments." Comments may also provide information to support items in the "recommendations" section. Items addressing new considerations, significant refinements of previous recommendations or issues that EQAC otherwise wishes to stress are presented as "recommendations." EQAC requests that county staff provide its perspectives on items presented as "recommendations."

This report covers activities affecting the environment in 2013; however, in some cases, key activities from 2014 are also included.

While the Environmental Quality Advisory Council has prepared and is responsible for this report, contributions were made by numerous organizations and individuals. Many of the summaries provided within this report were taken verbatim from materials provided by these sources. EQAC therefore extends its appreciation to the following:

Alice Ferguson Foundation
Audubon Naturalist Society
Clean Air Partners
Clean Fairfax
Coalition for Smarter Growth
Fairfax County Airports Advisory Committee
Fairfax County Deer Management Committee
Fairfax County Department of Cable and Consumer Services
Fairfax County Department of Code Compliance
Fairfax County Department of Information Technology
Fairfax County Department of Neighborhood and Community Services
Fairfax County Department of Planning and Zoning
Fairfax County Department of Public Works and Environmental Services
Fairfax County Department of Transportation
Fairfax County Department of Vehicle Services
Fairfax County Executive's Office
Fairfax County Environmental Coordinator
Fairfax County Facilities Management Department
Fairfax County Fire and Rescue Department
Fairfax County Health Department
Fairfax County Office of Community Revitalization
Fairfax County Park Authority
Fairfax County Police Department, Division of Animal Services
Fairfax County Public Schools
Fairfax County Restoration Project
Fairfax County Wetlands Board
Fairfax County Wildlife Biologist
Fairfax Joint Local Emergency Planning Committee
Fairfax Master Naturalists
Fairfax ReLeaf
Fairfax Water
Federal Aviation Administration
Illuminating Engineering Society of North America
International Dark-Sky Association
Interstate Commission on the Potomac River Basin
Metropolitan Washington Airports Authority
Metropolitan Washington Council of Governments
Northern Virginia Conservation Trust
Northern Virginia Regional Commission
Northern Virginia Soil and Water Conservation District
NOVA Parks (Northern Virginia Regional Park Authority)
Occoquan Watershed Monitoring Laboratory
Potomac Conservancy
Reston Association
United States Fish and Wildlife Service
United States Geological Survey
United States National Museum of Natural History
Upper Occoquan Service Authority
Virginia Department of Environmental Quality
Virginia Department of Forestry
Virginia Department of Game and Inland Fisheries
Virginia Department of Transportation
Virginia Division of Legislative Services
Virginia Outdoor Lighting Taskforce
Virginia Outdoors Foundation

Finally, EQAC wishes to acknowledge the efforts of the county’s interagency Environmental Coordinating Committee, which coordinated the staff responses to the recommendations within EQAC’s 2013 *Annual Report on the Environment*, as well as the ongoing efforts of the interagency Energy Efficiency and Conservation Coordinating Committee.



County of Fairfax, Virginia

To protect and enrich the quality of life for the people, neighborhoods and diverse communities of Fairfax County

Board of Supervisors
County of Fairfax
12000 Government Center Parkway
Fairfax, VA 22035

November 18, 2014

The Environmental Quality Advisory Council is pleased to present the 2014 Annual Report on the Environment. In this report, we discuss various environmental issues in Fairfax County and make recommendations as to what actions the county should take to resolve identified problems. This report covers 2013, but also includes significant actions from 2014 that could impact EQAC's comments and recommendations. We recognize that the report does not capture all ongoing actions; if we tried to accomplish this, the report would never be finished and would be even longer. The report consists of nine chapters – each chapter addressing a different aspect of the environment. The chapters are arranged to reflect the order of topics listed in the Board of Supervisors' Environmental Agenda. We have again have created two versions of the report; one a printed summary version, and two, an electronic complete version with all data included, available both on-line and in the CD attached to this report. We have again highlighted environmental stewardship opportunities within the report chapters and have retained a summary of these opportunities. We have also added to the detailed report an appendix on the Environmental Improvement Program funding, explaining the program, what the funds are used for and what the selection process is for the funds. In addition, we have added a section to both versions of the report summarizing EQAC's activities over the past year.

EQAC thanks the board for its continued strong support of environmental programs. We understand that budget constraints continue to impact all programs within the county.

EQAC's priority recommendations this year focus on three areas.

The first is the need for continuing long-term financial support to sustain three environmental programs that will only be effective and lasting if funded through multiple years. This includes: an **increase in the Stormwater Service District rate by one-quarter penny** that would again result in more funding for modest watershed improvement programs and a somewhat more realistic infrastructure replacement timeline; **continued funding of Environmental Improvement Program projects**, most of which will be cost effective and result in significant cost reduction; and

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increased funding for natural resource management and stewardship in the Fairfax County Park Authority.

The second recommendation is to develop and implement programs that are important to address climate change. First, an energy strategy is needed to support all sectors of Fairfax County from the county itself to the commercial and residential sectors. Second, planning is needed to avoid impacts of climate change, such as the rise in sea level that threatens those parts of Fairfax County that border the Potomac and the creeks that feed the Potomac.

Lastly, we would note that the county has moved to single stream recycling where all recyclable material is collected in a single bin. This has had some benefits; however, it has reduced the quality and value of collected recyclable materials. **To increase the value and environmental benefit of recycled materials, the county should investigate ways to improve the quality of recyclables collected at residential and commercial properties.** Removing glass from residential collection systems could significantly improve the quality of paper and plastic recycled. As such, alternative methods of glass recycling should be considered in addition to other ways to improve the quality of recyclables collected.

As we do each year, EQAC would like to commend the outstanding efforts of the following groups whose actions improve and safeguard the environment in Fairfax County. The Northern Virginia Soil and Water Conservation District continues its work to provide excellent education programs, to consult with the county on innovative stream restoration work, to have a large and successful stream monitoring program and to be available to residents and developers alike for site work consultation. The Northern Virginia Conservation Trust continues to obtain easements on privately owned environmentally sensitive land. Fairfax ReLeaf continues to promote tree preservation and tree replacement programs. The Park Authority Natural Resources staff continues to provide exemplary service due to a small group of dedicated individuals, working with a very small budget, who are slowly enhancing environmental efforts in the county's parks. The members of EQAC thank all these groups, and all others who work to preserve and enhance the environment of the county.

Once again, EQAC would like to thank and commend the county staff for its continued outstanding work. We thank staff especially for providing the data for this report and for a continued willingness to meet with EQAC to discuss various issues. We commend the county's Environmental Coordinating Committee, which is chaired by Deputy County Executive David Molchany, for its continued efforts at managing environmental action within the county. We appreciate the ECC's willingness to meet with EQAC twice each year and to discuss issues of environmental significance.

As I do every year it gives me great pleasure as the representative of EQAC to thank and acknowledge the work of two individuals. Every year we do this and every year

Board of Supervisors
Continued

the members of council continue to be impressed with the work and input of these two people.

First, we need to truly thank Noel Kaplan of the Environment and Development Review Branch, Department of Planning and Zoning. Noel provides county staff support to EQAC. Noel sets up and tapes every EQAC meeting, follows up on actions generated from the meetings and coordinates the inputs and publication of the Annual Report. Although the members of EQAC write the Annual Report, it is Noel who makes publication of the document possible. Again EQAC cannot thank him enough for his hard work and long hours in our support.

Second, we thank Kambiz Agazi, Environmental Coordinator, Office of the County Executive, who also attends all of our meetings and provides helpful advice and suggestions. His insight and his overview of county environmental activities are invaluable to our work. EQAC thanks him for his assistance and valuable contributions.

Finally, as I did last year, I would like to personally recognize my fellow EQAC members. They represent a diversity of views that allows for knowledgeable discussions and results in thoughtful recommendations. They spend extensive time investigating issues, write excellent resolutions and produce comprehensive chapters on subjects they have carefully researched. They are to be commended for their efforts.

EQAC asks that you continue to support the environmental programs you have established. These programs are important if we are to maintain the high quality of life we have in Fairfax County and the high standards we have set for ourselves. We note that for Fairfax County residents, quality of life is not just about good schools and jobs but also about having a clean and healthy environment in which to live and recreate.

The members of EQAC thank the Board of Supervisors for its leadership and look forward to continue working with you to achieve the goals of the Environmental Agenda and protecting and enhancing Fairfax County's quality of life in the coming years.

Respectfully submitted,

A handwritten signature in cursive script that reads "Stella M. Koch".

Stella M. Koch, Chairman

SUMMARY OF EQAC ACITIVITIES, NOVEMBER 2013 THROUGH OCTOBER 2014

Between November 1, 2013 and October 31, 2014, EQAC held 11 meetings, including one public hearing, a joint meeting with the Fairfax County Park Authority Board and two joint meetings with the Fairfax County Environmental Coordinating Committee. During this period, EQAC issued six resolutions and positions (see Appendix B of the detailed version of this report). On November 19, 2013, EQAC presented its 2013 Annual Report on the Environment to the Board of Supervisors. On September 23, 2014, EQAC presented the 2014 Environmental Excellence Awards (see Appendix C of the detailed version of this report).

Key agenda items from EQAC's meetings were as follows:

November 13, 2013

- The FY 2015 Fairfax County budget process.
- The Countywide Dialogue on Transportation.
- The draft stormwater management ordinance.
- Consideration of correspondence to the Board of Supervisors regarding transportation priorities.

December 11, 2013

- Funding of monitoring efforts by the Occoquan Watershed Monitoring Laboratory: Discussion with Dr. Thomas J. Grizzard, Director, OWML
- Green building policy as it applies to hotels: Discussion with representatives from Cityline Partners and Hilton Worldwide
- Annual Report on the Environment: Discussion of the report preparation process and possible changes

January 13, 2014

- EQAC's annual public hearing
- Establishment of a nominating committee for EQAC officers for 2014.
- The annual report preparation process and possible changes.

March 12, 2014

- Joint meeting with Fairfax County’s Environmental Coordinating Committee
 - The FY 2015 Advertised Budget Plan
 - The Chairman’s Private Sector Energy Task Force—update on follow-up actions/Energy Alliance
 - Energy Action Fairfax: Update
 - Discussion of a proposed stream relocation project in Great Falls
- Election of officers for 2014
- Review of issues identified at the 2014 annual public hearing
- The annual report preparation process and possible changes

April 9, 2014

- Discussion of the Wildlife Biologist Office
- Discussion of the March 2014 draft Fairfax County Sustainability Initiatives document
- Identification of agenda items for a joint meeting with the Fairfax County Park Authority Board
- The annual report preparation process and possible changes

May 14, 2014

- The potential for hydraulic fracturing within the George Washington National Forest, and consideration of a related EQAC resolution
- 2014 Annual Report on the Environment
- Discussion of the adopted FY 2015 budget
- Student member committee report

June 11, 2014

- Stormwater update
- Funding of Environmental Improvement Program projects
- Follow-up discussion regarding hydraulic fracturing within the George Washington National Forest
- Identification of future agenda items, including the July joint meeting with the Environmental Coordinating Committee

July 9, 2014

- Joint meeting with Fairfax County's Environmental Coordinating Committee
 - Funding of long-term, ongoing projects through the Environmental Improvement Program
 - The Wildlife Management Specialist position
 - Activities of the county's Animal Shelter
 - Briefing on the proposed revision to the Noise Ordinance
 - Status of development of energy goals by the county's Energy Efficiency and Conservation Coordinating Committee
 - Staff responses to EQAC Annual Report recommendations
- Follow-up discussion regarding hydraulic fracturing within the George Washington National Forest
- Legislative proposals for the 2015 General Assembly
- Development of EQAC comments regarding the proposed Noise Ordinance revision
- Update on the green building policy revision
- Update on the review of the MITRE electric vehicle charging infrastructure report
- 2014 Annual Report on the Environment

August 13, 2014

- Update of the Solid Waste Management Plan, including a discussion of construction/demolition debris waste
- EQAC recommendations regarding the proposed revision to the Noise Ordinance
- Legislative proposals for the 2015 General Assembly
- Environmental Excellence Awards
- 2014 Annual Report on the Environment

September 10, 2014

- 2014 Annual Report on the Environment

October 8, 2014

- Joint meeting with the Fairfax County Park Authority Board
- 2014 Annual Report on the Environment

Approved minutes of EQAC meetings are available from EQAC's website, at <http://www.fairfaxcounty.gov/dpz/eqac/minutes>.

EQAC resolutions and positions were as follows:

November 2013:	EQAC comments on the Countywide Dialogue on Transportation
March 2014:	Testimony on the FY 2015 Fairfax County budget
June 2014:	Funding of Environmental Improvement Program projects
July 2014:	EQAC position on the potential for hydraulic fracturing in the George Washington National Forest
July 2014:	Legislative proposal regarding disposable bags
August 2014:	EQAC position on Noise Ordinance modification proposal

Details are available in Appendix B of the detailed version of this report as well as EQAC's website, at http://www.fairfaxcounty.gov/dpz/eqac/resolutions/dpz_eqac_resolutions.htm.

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SCORECARD
Progress Report on 2013 Recommendations

1. CLIMATE CHANGE AND ENERGY

Climate Change & Energy Recommendation	Action taken by Agency or Department	EQAC Comments	Completed
<p>1. While the county has promoted the incorporation of energy efficient certification, such as LEED at the Silver level or higher, EQAC recommends that the Board of Supervisors also promote periodic (e.g., bi-annual) evaluation of the GHG footprints for buildings and facilities. Such a step would be a natural follow up action to education and outreach that has been started in 2012 for residential energy use and that is envisioned for the commercial sector. While EQAC is encouraged that plans are being developed that would address this recommendation, additional work will be needed before this recommendation can be fulfilled. We are hopeful that the work of the Energy Manager will help with the implementation of this recommendation.</p>	<p>The staff response noted the Energy Action Fairfax pilot, outreach on energy issues that include social media and the Energy Dashboard, which has been under consideration for the Fairfax County Government Center and the use of real-time energy monitoring for several county buildings.</p>	<p>The county is to be commended for the progress made to date. However, the Energy Dashboard has not yet been highlighted for the public. If this information is made public, it may serve as an incentive to homeowners and private sector businesses to track their energy.</p>	<p>No.</p>

Climate Change & Energy Recommendation	Action taken by Agency or Department	EQAC Comments	Completed
<p>2. EQAC recommends that Fairfax County continue to fund a program to serve as follow-on to the Energy Action Fairfax. The EAF program completed a small number of outreach events and audits and developed a website and educational videos. The program educated county residents on energy conservation and greenhouse gas emission reductions. EQAC feels that it would be beneficial if the program was to continue. Given the significant efforts and expenditures made by the county to get this program started, it would be most cost-efficient to continue the program at this time rather than stop it and then try to re-start it at some future date.</p>	<p>The pilot program funded with the Energy Efficiency and Conservation Block Grant has expired. Recognizing the need for the EAF program, the county is seeking short and long term objectives to replace the pilot. As part of this work, the county is pursuing a green certification program for the commercial sector, which will recognize ENERGY STAR[®], LEED[®] and other certifications.</p>	<p>EQAC commends the county for recognizing the importance of this work and pursuing both short and long term.</p>	<p>No.</p>
<p>3. Given the importance of the work of the private sector, the EQAC strongly supports the continuation of work started by the Chair’s Energy Task Force be continued through the Energy Alliance.</p>	<p>County and board staff members have re-connected with members of the former Private Sector Energy Task Force to promote formation of the Energy Alliance, which would undertake implementation of the Task Force’s recommendations.</p>	<p>EQAC appreciates that both board and county staffs are working to facilitate the formation of the Energy Alliance.</p>	<p>No.</p>

II. LAND USE AND TRANSPORTATION

Land Use & Transportation Recommendations	Action taken by Agency or Department	EQAC Comments	Completed
<p>I.a. The new Fairfax Forward planning process is the right step forward to update our planning practices. With Fairfax Forward being such a new process for the county, EQAC recommends that:</p> <p>(i) Fairfax Forward be identified as the preferred long term process to update with Comprehensive Plan and completely replace the APR process.</p> <p>(ii) All the processes necessary to sustain Fairfax Forward be established now, rather than waiting for the current Work Program to be completed. This includes:</p> <ul style="list-style-type: none"> • The mechanisms to continuously update and improve the Fairfax Forward program. • The process for identifying and prioritizing future work programs. • The means of engaging the public and encouraging meaningful public participation in the program. 	<p>The Board of Supervisors adopted Fairfax Forward on July 9, 2013 and directed staff to evaluate the efficiency, effectiveness, accessibility and impact for two years.</p> <p>Processes to maintain the long term sustainability are developed and monitoring is underway as part of the two-year evaluation.</p>	<p>EQAC is satisfied that Fairfax Forward has become the accepted process for updating the Comprehensive Plan and that the county has a thoughtful process in place for improvement and evaluation.</p>	<p>Yes.</p>

<p>Land Use & Transportation Recommendations</p>	<p>Action taken by Agency or Department</p>	<p>EQAC Comments</p>	<p>Completed</p>
<p>1.b. EQAC recommends that the county work to integrate social media into the planning process and other outreach efforts. This allows community participation through the Internet technologies and is more cost effective and far reaching than traditional media and outreach. The concept of a virtual town-hall meeting with community participation and instant feedback is now possible. Social media is very powerful for encouraging and educating people about alternative transportation options.</p>	<p>The Department of Planning and Zoning appreciates EQAC advocacy for social media. DPZ already uses social platforms, such as Facebook, Twitter, Flickr and YouTube to engage the public.</p> <p>Public participation tools are adopted on a countywide basis and follow countywide policy.</p> <p>A dedicated social media staff person may be recommended in the future.</p>	<p>EQAC will continue to encourage the county to leverage new social media technology. This is especially useful for land use and transportation issues that affect a large portion of county residents.</p>	<p>Ongoing.</p>
<p>1.c. EQAC recommends that the county leverage the geographic information system in comprehensive planning, that GIS technology be incorporated directly into the planning process and that the use of modeling be expanded to help understand future conditions and scenarios.</p>	<p>DPZ notes several strides made in 2013 to utilize GIS for comprehensive planning. Several tools have been developed for outreach efforts and more tools are being considered.</p>	<p>The county is doing a good job utilizing data sources and GIS layers into useful tools. EQAC encourages the adoption of modeling tools to run scenarios and experiments.</p>	<p>Ongoing.</p>

<p>Land Use & Transportation Recommendations</p>	<p>Action taken by Agency or Department</p>	<p>EQAC Comments</p>	<p>Completed</p>
<p>1.d. EQAC recommends that the county continue to refine and formalize the process for revitalization, especially in mixed-use centers. There are several success stories across the county, such as Merrifield, that have been through a sustained transformation and have a wealth of lessons learned. Topics such as transportation modeling, land consolidation, public/private partnerships, mixed use development and transit connectivity apply across the county. Capturing these techniques into processes to reapply will increase the success of the new revitalization efforts. EQAC supports an evaluation of revitalization incentives and better understanding of incentive effectiveness.</p>	<p>The Office of Community Revitalization completed a year-long assessment of revitalization incentives for the board. There is a multi-agency effort underway to develop a work plan to implement those recommendations.</p>	<p>The incentive study is an excellent review of opportunities to improve development through incentives.</p> <p>This recommendation encourages the county to use the wealth of experience gained from successful revitalization projects to build a quantitative model of the incentive efficacy. While every project is different, there are many lessons to be shared.</p>	<p>Ongoing through the OCR Incentives Work Program.</p>

Land Use & Transportation Recommendations	Action taken by Agency or Department	EQAC Comments	Completed
<p>1.e. This year EQAC submitted a resolution urging that urban design standards be applied to mixed-use centers; EQAC reiterates this recommendation. The urban standards are driving the potential in Tysons Corner and can apply equally well to all transit areas, as well as Suburban Centers and Community Business Centers. Urban standards are designed to improve the environment, quality of life, balance and safety of a well-planned mixed-use place.</p>	<p>The county and the Virginia Department of Transportation are working to develop multi-modal system plans for Suburban, Community Business, and Transit Station areas.</p>	<p>Multi-modal system plans are an important and necessary improvement of the transportation planning process. We encourage urban standards to be leveraged to build better places.</p>	<p>In process.</p>
<p>2.a. EQAC recommends that nonresidential data be comprehensively integrated into a GIS based life-cycle system. Residential data are effectively captured and available for many applications via the Integrated Parcel Lifecycle System. Nonresidential data exist in disparate systems, such as zoning and site planning, but have not been fully brought into the lifecycle planning process and cannot be used for applications such as forecasting or plan revisions.</p>	<p>This recommendation is in the process of being addressed by the Department of Planning and Zoning and will require collaboration with the Department of Information Technology, the Department of Neighborhood and Community Services and the Department of Public Works and Environmental Services. Staff is continuing to bring systems together to refine its forecasting methodology.</p>	<p>EQAC appreciates the complexity of migrating legacy and new systems together. We refined this recommendation to be more precise for 2014.</p>	<p>Ongoing.</p>

<p>Land Use & Transportation Recommendations</p>	<p>Action taken by Agency or Department</p>	<p>EQAC Comments</p>	<p>Completed</p>
<p>2.b. EQAC continues to recommend that the Comprehensive Plan be reflected and modeled in the GIS. Applications such as the internal Comprehensive Plan Potential and the Comprehensive Plan Amendment applications (used to gather data for the State of the Plan report) are very useful for understanding the real time status of the Comprehensive Plan. These applications should be available to the public on the Comprehensive Plan website.</p>	<p>In December 2013, the Plan Amendment Database layer was added to the GIS. Staff will discuss the benefits of incorporating the quantification of land use density change into GIS in the future. A subset of changes is available via Fairfax Forward.</p> <p>In 2013, DPZ added the Comprehensive Plan base map to the GIS. In 2014, it will be added to the public portal. This will show the Comprehensive Plan map, but note that Area Plans have more details to complement the Comprehensive Plan.</p>	<p>This response highlights the reality that the county is transitioning from a paper-based planning process to a digital one. Great strides are being made and there are more opportunities. The goal of this recommendation remains.</p>	<p>Ongoing.</p>
<p>2.c. EQAC recommends that the county acquire new data sources and incorporate them into the business process. Planimetric data have proven to be both cost effective and transformative. The county has an opportunity to acquire multi-spectral imagery which also has the potential to greatly enhance our knowledge of the county for answering questions such as tree species identification and tree canopy density.</p>	<p>The county has acquired highly accurate raster land cover data from multi-spectral satellite imagery. This was used to model canopy coverage effects on stormwater runoff.</p> <p>The Department of Information Technology/GIS also acquired LIDAR for 30% of the county. This has potential utility for many areas.</p>	<p>EQAC appreciates the proactive focus of GIS to acquire new data and incorporate it into county business processes.</p>	<p>Yes.</p>

<p>Land Use & Transportation Recommendations</p>	<p>Action taken by Agency or Department</p>	<p>EQAC Comments</p>	<p>Completed</p>
<p>3. This year the General Assembly passed legislation raising additional revenue for transportation. As the county enters a community dialogue to prioritize the allocation of these funds, EQAC recommends that the county provide priority for non-motorized/multi-modal transportation options. . . . Proper implementation of the non-motorized/multi-modal master plan needs to include:</p> <ul style="list-style-type: none"> • Implementation of the bicycle master plan. . . . • Expanded bicycle parking guidelines modeled on successful programs such as the new secure bicycle parking facilities at Silver Line stations and other county park-and-ride/transit facilities. • Funding for implementation of both capital and non-capital elements of the county’s bicycle master plan. • Implementation of an outreach and education program for encouraging/promoting bicycling as a transportation mode. . . . • Engagement of the private sector. . . . 	<p>Much of the new funding must be used for regional transportation projects and projects that can demonstrate congestion relief. However, the new funding has enabled Fairfax County to undertake a more comprehensive review of all transportation needs in the county.</p> <p>As a result of outreach efforts, of the \$1.4 billion approved over the next six years, approximately \$200 million was approved for bicycle and pedestrian projects.</p> <p>Specific recommendations are underway as part of a long term effort. Funding for capital improvement is included in the transportation plan. Non-capital elements require annual funding approval of the board.</p>	<p>EQAC appreciates the renewed focus and dedication of resources to pedestrian and bicycle transportation.</p> <p>These modes of transportation will require outreach and education as the public adopts new means to move about. Our foremost concern is public safety, especially as vehicles and bicycles share the same multi-modal system.</p>	<p>Ongoing.</p>

III. AIR QUALITY

There were no recommendations in the 2013 Annual Report

IV. WATER RESOURCES

Water Resources Recommendations	Action taken by Agency or Department	EQAC Comments	Completed
<p>1. EQAC recommends that Fairfax County continue to adequately fund and implement its ongoing stormwater program, which includes dam maintenance, infrastructure replacement, water resource monitoring and management, watershed restoration and educational stewardship programs. . . .</p> <p>EQAC recommends that the Stormwater Service District rate be increased in FY 2015 by at least one-quarter penny, from a rate of 2.0 cents per \$100 assessed real estate value to 2.25 cents per \$100. . . . This would, once again, result in more funding for modest watershed improvement programs and a somewhat more realistic infrastructure replacement timeline. We realize that there will likely be a need for additional increases for water quality projects to meet future permit conditions, and for infrastructure reinvestment, as the system is continually growing and aging.</p>	<p>The adopted FY 2015 county budget included this recommendation.</p>	<p>EQAC commends the board for including this in budget.</p>	<p>Yes.</p>

Water Resources Recommendations	Action taken by Agency or Department	EQAC Comments	Completed
<p>2. Fairfax County is preparing a Stormwater Management Ordinance in response to state regulations requiring localities to adopt ordinances and take over reviews and inspections for Virginia Stormwater Management Program general permits relating to stormwater runoff from construction sites effective July 1, 2014. EQAC has recommended that this new Stormwater Management Ordinance maximize stream protection and lessen no current protection, in order not to have an adverse impact on the environment.</p>	<p>The state-required adequate outfall and nutrient removal standards in the ordinance are more stringent than the county's earlier requirements. Only in a few instances do the state's required design standards for water control facilities have lower standards for the PFM. Where the county had the option to retain its level of environmental protection in design standards, that level has been maintained with one significant exception. The single family infill exception lowered regulation requirements.</p>	<p>With the exception of the requirements for single family infill requirements the county did not lessen protection for county streams.</p>	<p>Yes.</p>

V. SOLID WASTE

Solid Waste Resources Recommendations	Action taken by Agency or Department	EQAC Comments	Completed
<p>1. EQAC recommends investigation of furthering composting efforts to collect food waste and properly eliminate it from the waste stream by routing it into a process whereby composted material would produce a useful product.</p>	<p>As part of the research conducted during the negotiations with Covanta, a request for expressions of interest was published to gauge the state of alternative technologies for handling wastes beyond landfill or incineration. The RFEI resulted in five proposals and two subsequent ones that offered to develop pilot projects for the county that gasify, compost or pelletize waste. None offered a viable alternative to the contract with Covanta to handle the bulk of the county's waste stream. Moreover, the alternatives required a site, guaranteed waste stream and other support from the county. In the final analysis, county staff will continue to explore other options for diverting portions of the county's waste stream such as organics. The county is in the process of evaluating the development of a pilot-scale organic material processing facility at one of its operational locations. This evaluation will be done in conjunction with the required revision to the county's solid waste management plan, due to the Virginia Department of Environmental Quality in June 2015. The county envisions a pilot-scale project using yard waste as the organic material to be processed.</p>	<p>EQAC recommends the continued investigation of alternative waste stream reduction including food waste composting. Regional cooperation should be considered.</p>	<p>No.</p>

VI. HAZARDOUS MATERIALS

There were no recommendations in the 2013 Annual Report

VII. ECOLOGICAL RESOURCES

Ecological Resources Recommendations	Action taken by Agency or Department	EQAC Comments	Completed
<p>1. The Fairfax County Park Authority approved a Natural Resource Management Plan in 2004. Substantial staff and monetary resources will be needed to implement [a revised NRMP]. For the 2004 plan, FCPA staff estimated that full implementation would require approximately \$8 million per year and dozens of staff positions. This included about \$3.5 million to focus on general natural resource management and \$4.5 million for a non-native invasive plant control program. A more phased approach to funding would have allowed FCPA to begin to manage 10 percent of parklands and set up the program to be phased in over time. Phase 1 with this approach would have required \$650,000 and six positions. It is anticipated that similar needs will be identified for the new plan. EQAC strongly feels that a Natural Resource Management Plan needs to be implemented. Therefore, EQAC recommends that the Board of Supervisors provide sufficient funding to implement an initial phase for natural resource management efforts and that the Fairfax County Park Authority Board apply this funding accordingly. EQAC recognizes that in today's budget climate, such increased funding may be difficult to achieve. However, EQAC recommends some increase in funding by the Board of Supervisors. And, once the county's budget problems are eased, EQAC further recommends that the Board of Supervisors increase funding as a high priority. Ultimately, this increased funding should support the full implementation of the Natural Resource Management Plan.</p>	<p>The Fairfax County Park Authority adopted a revised Natural Resources Management Plan on January 22, 2014. The needs of staff and monetary resources are estimated to be about the same as under the 2004 plan. While full funding to implement the plan is not in place, FCPA has secured some funding through sources such as the Environmental Improvement Program (for the Invasive Management Area Program), bonds, proffers and telecommunications fee funds. FCPA is currently conducting a Needs Assessment to determine how resources can be best used to meet community needs. Part of that assessment will be the development of a cost basis for doing work to restore and manage natural capital so that FCPA can better prepare estimates to seek funding and complete resource management activities.</p>	<p>The revision and adoption of the Natural Resource Management Plan is a step in the right direction. However, having a plan is the first step. Funding and staff are needed to implement the plan and these are lacking. While FCPA has secured some funding for some limited efforts, a significant shortfall exists. EQAC continues in its recommendation that funding and staff be made available. The first step should be to fund Phase 1 with \$650,000 and six new staff positions.</p>	<p>No.</p>

VIII-1. IMPACTS OF DEER IN FAIRFAX COUNTY

Deer Management Recommendations	Action taken by Agency or Department	EQAC Comments	Completed
1. Managed hunts should be continued as they have become both cost-effective and efficient in reducing excesses in the deer herd.	The Fairfax County Deer Management Program will continue to utilize all available deer management tools for population control. Public managed hunts will continue to be used at selected parks to implement sustainable hunting pressures.	The numbers of hunts and the success rates have been what could be reasonably expected given the level of staffing availability.	Yes.
2. The sharpshooter events should be continued because they are both humane and cost-effective.	Sharpshooting operations will continue to be used at night to implement sustainable hunting pressures at selected parks.	The number of sharpshooter events and the success rates has been what could be reasonably expected given the level of staffing availability.	Yes.
3. The newly begun archery program should be continued as a means of controlling deer depredation of vegetation on residential properties where firearms cannot be used.	The Archery Program will continue to be used at selected parks to implement sustainable hunting pressures.	The archery program has been very successful in addressing one of the key needs of homeowners to control the environmental destruction caused by deer in residential neighborhoods.	Yes, within the limits of staff availability. Expanded effort would be desirable.

VIII-2. IMPACTS OF GEESE IN FAIRFAX COUNTY

Geese Management Recommendations	Action taken by Agency or Department	EQAC Comments	Completed
<p>1. EQAC strongly recommends that the goose management program be continued, particularly the public outreach and training activities so that a cadre of volunteers can be created to provide the labor to do the actual egg-oiling that is the principal control measure. In addition, the shotgun hunt pilot test conducted by the Park Authority should be expanded into an established program.</p>	<p>Community outreach and a public education program to train volunteers to “addle” (oil) eggs will continue to be used as management tools to control the resident Canada geese population at selected sites.</p> <p>To date it appears that the majority of the egg oiling activity remains concentrated on public lands. In order to be effective at reducing local resident goose populations, efforts will need to be greatly expanded on both public and private lands county and region wide, particularly by land managers and volunteers working on properties which contain large amounts of managed turf and/or water features.</p> <p>Egg oiling efforts should be combined with habitat modification to reduce the amount of suitable habitat for resident geese; behavior modification to discourage use of lands by resident geese; and goose population control (hunting) to better manage resident goose populations.</p>	<p>With the increases in the resident goose population, it is desirable to increase the staffing for this program as soon as the budget situation permits.</p>	<p>Yes, within the limits of staff availability.</p>

VIII-3. COYOTES IN FAIRFAX COUNTY

There were no recommendations in the 2013 Annual Report

VIII-4. WILDLIFE BORNE DISEASES OF CONCERN IN FAIRFAX COUNTY

There were no recommendations in the 2013 Annual Report

IX-1. NOISE

Noise Recommendation	Action taken by Agency or Department	EQAC Comments	Completed
<p>1. The noise monitor at Great Falls Elementary, which primarily served Reagan National Airport, has been decommissioned with no plans for a replacement as there are currently few complaints about noise at that site. EQAC recommends that MWAA’s decision to decommission this monitoring station be referred to the county’s Airports Advisory Committee for review and recommendation. EQAC further recommends that the Airports Advisory Committee be asked whether it may be appropriate to consider if this monitoring station should be relocated elsewhere in the county, recognizing MWAA staff’s perspective as to why such an effort may not be appropriate.</p>	<p>Staff communicated EQAC’s recommendation to the Airports Advisory Committee, and the committee discussed this matter at its October 8, 2013 meeting. At that meeting, the committee agreed to review and make recommendations about the noise monitor, and it voted to recommend that the Board of Supervisors request to MWAA that the decommissioned monitoring station be placed in the area with the most noise complaints that is currently not being served by a monitor. The committee agreed that it would ask MWAA for the past five years of complaint data in order to identify a potential site for this monitoring station.</p>	<p>EQAC approves of the decision made by the Airports Advisory Committee to recommend that the board request to MWAA that the monitor be installed in the area with the most noise complaints currently not served by a monitor. EQAC is tracking the progress of the AAC.</p>	<p>In progress.</p>

Noise Recommendation	Action taken by Agency or Department	EQAC Comments	Completed
<p>2. EQAC supports efforts by the Metropolitan Washington Airports Authority to report, on its website, results from the new noise monitoring system for Washington Dulles International and Ronald Reagan Washington National Airports. EQAC recommends, however, that the Board of Supervisors request to MWAA that these results be reported on a quarterly basis and that the data be posted more promptly, ideally within three months.</p>	<p>EQAC's recommendation has been communicated to MWAA's Airport Noise Office. Staff from that office has indicated that: (1) MWAA will be considering the posting of monitoring results on a quarterly basis; and (2) MWAA's public portal was to be upgraded in early 2014 and that it is possible that this upgrade will accomplish EQAC's preference for more frequent posting of noise monitoring data.</p>	<p>EQAC notes that the MWAA public portal upgrade completed in 2014 did not include reporting of monitoring results on a quarterly basis. As MWAA is currently considering replacing the current exterior noise monitoring technology, EQAC will track MWAA's process and determine whether to continue to recommend more frequent reporting.</p>	<p>In progress.</p>

IX-2. LIGHT POLLUTION

There were no recommendations in the 2013 Annual Report

IX-3. VISUAL POLLUTION

There were no recommendations in the 2013 Annual Report



Spotlight on Fairfax County Public Schools

Fairfax County Public Schools is the largest school district in Virginia (the 10th largest in U.S.) and has an enrollment of over 187,994 students for the 2014-2015 school year. Over 14 percent of Virginia’s K-12 students are enrolled in FCPS.

In this Spotlight, EQAC wants to provide recognition and highlighting for three areas where FCPS is working towards improved environmental performance. These areas are:

- High Performance and Sustainable Schools.
- Get2Green Environmental Education and Action.
- Collaboration between FCPS and the county’s stormwater program.

High Performance and Sustainable Schools (Facilities and Transportation) – A high performance school implements design, construction and implementation strategies intended to create a learning environment which is: healthy; thermally, visually and acoustically comfortable; efficient in its use of energy, water and materials; easy to maintain and operate; environmentally responsible; a learning tool; safe and secure; and a community resource. Benefits of a high performance school include: heightened student performance; increased daily attendance; better student and teacher health; improved teacher satisfaction; improved indoor air quality; and reduced environmental impact.

FCPS uses the Collaborative for High Performance Schools, (see <http://www.chps.net/dev/Drupal/node>), specifically the Virginia-CHPS Criteria, as its standard for sustainable design and benchmarking. CHPS offers resources for different phases and types of projects, including planning, designing, operating, specifying for, commissioning or maintaining a school. In addition, it offers a “Best Practices Manual” to help schools, districts and practitioners to achieve: high performance design, construction and operations; assessment tools for new construction, major modernizations and relocatable classrooms; and recognition programs.

FCPS policy is for all 2013 bond (and beyond) projects to be CHPS-designed under the VA-CHPS Criteria. FCPS’s Office of Design and Construction Services led the efforts to create the VA-CHPS Criteria that are now available to all school districts in Virginia. Before being approved and adopted by CHPS, the VA-CHPS Criteria had to comply with the CHPS National Core Criteria and be approved by the CHPS Technical Committee. In addition, it underwent two public reviews before being approved by the CHPS Board of Directors. FCPS did not provide information for this report to identify the extent to which its schools are currently meeting these criteria.

The Office of Facility Management Energy Management Section prepares an annual greenhouse gas inventory for all of FCPS (annual reports from 2008 to 2013 are available at <http://www.fcps.edu/fts/facmanagement/greenhousegas/index.shtml>).

FCPS has contracted with Cenergistic, Inc., to implement an energy conservation program. Work started February 1, 2014, and Cenergistic engineers and experts will be working throughout the district to implement conservation procedures in all facilities. Ten energy specialists will be conducting energy audits to ensure that students and teachers are comfortable during class time and scheduled activities and that energy is used only as necessary. Energy specialists are responsible for helping to motivate everyone in the school district to use energy wisely, keep classrooms comfortable and practice smart energy strategies—ensuring that the energy management program is implemented district-wide.

Get2Green Environmental Education and Action – FCPS Get2Green (see <http://www.fcps.edu/is/science/get2green/>) is in its fourth year. It was started as a means to help attain the School Board goal to graduate environmental stewards. Get2Green is providing technical support for schools to participate in environment-related projects or to become Eco-schools, providing professional development for teachers and principals and building relationships around environmental stewardship that will help pyramids develop successful, student driven programs. Get2Green staff collaborates closely with service learning and STEAM (Science, Technology, Engineering, Art and Math) resource personnel since most of the projects students are engaged in or incorporate all these important components. Efforts are under way to develop problem-based learning models with the environment as the underlying concept.

FCPS has formally partnered with the National Wildlife Federation Eco-Schools USA program to assist with these endeavors. The Eco-Schools USA program is based upon student-driven action teams that work on issues such as schoolyard wildlife habitat, recycling, composting, energy conservation and other environment and health related topics. In an effort to promote environmental action among students, FCPS sees the Eco-Schools USA program as a framework to facilitate this at any school. Eco-Schools USA provides sample action materials, curriculum and background information on its website and personnel are available to lend expertise to FCPS teacher trainings and meetings.

To date, FCPS has over 130 schools that are involved in some type of environmental project area. Additional metrics include: schoolyard habitats (80+ schools); edible gardens (50+ schools); staff training (2,000); and Blackboard Get2Green Community Members (600). As of August 2014, FCPS had five Green Flag Eco Schools, the highest honor in the Eco School process. They are Lanier Middle School, Churchill Road ES, Centreville ES, Lake Anne ES and Flint Hill ES.

Get2Green collaborates with a wide variety of internal FCPS departments to assist schools in their “greening” efforts, as well as a group of Get2Green principals that meets quarterly. Get2Green is collaborating with Cenergistic in the district’s efforts to conserve energy. The school district works with many external partners across the county and region to bring expertise and resources to the schools. Get2Green is also working on efforts to improve communication both internally and externally and started a new Facebook page (Get2Green) in spring 2014.

Get2Green in Fairfax County is part of a regional and national movement to make schools healthier environments for students and staff. The Virginia Resource Use Education Council is

developing a policy on environmental education and proposing a state-wide environmental education organization. Further, Virginia is participating in the U.S. Department of Education's Green Ribbon Schools program. This year Virginia is hosting the Green Schools National Conference in Virginia Beach in March 2015.

Recycling efforts have been under way at Fairfax County schools for several years. The district's waste hauler, Potomac Disposal Services, provides a consultant to assist schools in setting up recycling efforts. All schools are getting new outdoor recycling stations installed by Facilities and Maintenance and Get2Green will be encouraging their use.

During the 2013-14 school year, FCPS ran a Business Case Competition among high school business and eco team students to develop a marketing plan to better inform students and staff about how to recycle and the benefits of recycling. Students will roll out this plan and monitor its success during the 2014-15 school year. Ernst and Young is partnering with FCPS on this effort. Stuart HS took first place in the competition with Langley HS in second place and Thomas Jefferson HSST in third. Oakton, Centreville and Herndon HS were also involved.

Collaboration between Fairfax County Public Schools and the County's Stormwater Planning Division on Stormwater Management Plans--In November 2012, staff from FCPS and from the county's Department of Public Works and Environmental Services provided a briefing to EQAC regarding the identification of opportunities to enhance stormwater management efforts (beyond code requirements) on school properties through FCPS and DPWES collaboration. These efforts have targeted events of two inches or less of rainfall, which is 98% of all rainfall events. There was an identification of opportunities to implement stormwater management measures during school renovation/construction processes (the Capital Improvement Program for schools), and funding of enhancements through the Stormwater Service District revenue.

All FCPS bond projects entering design since the 2013 ARE have involved the county's Stormwater Planning Division early on to assess whether there are opportunities for advancing stormwater management efforts. Most projects are incorporating extra stormwater management efforts through this collaboration, though in a few isolated cases it was determined that the installation of stormwater enhancements was not practical or cost effective based on the schedule or scope of that capital project. FCPS provided a list of schools where advanced/extra stormwater management activities are being installed at FCPS facilities, and the nature of those improvements. This table is included at the end of this section, on the next page. A broader list that also identifies joint projects that are being planned is provided in the detailed Water Resources chapter of this report.

In addition, extra stormwater management efforts are being implemented at three school projects under design and are being evaluated for 14 additional projects that are in design.

EQAC notes that it would be beneficial if the advanced stormwater management activities that are installed at FCPS facilities would include visible signage that describes the nature of the improvement. Such signage could help students and others at the schools to increase their appreciation of the efforts and be useful as an educational tool.

Location		Plan Status	Facility Descriptions
Langley	High	Under Construction	Underground storage / filtration
Marshall	High	Under Construction	Cistern - Irrigation system
Mt Vernon	High	In Construction	Added storage to Turf
Ravensworth	Elementary	Under Construction	Bio-Retention, Amended Soils
Sunrise Valley	Elementary	Under Construction	Pervious Pavement, Vegetative Swale, Underground Detention / Infiltration Trench
Terraset	Elementary	Under Construction	Pervious Pavement, Filterras, Permeable Pavers, Underground Detention

Environmental Stewardship/Volunteer Opportunities in Fairfax County

Environmental Quality is a team effort. We need partnerships with government, commercial and volunteer organizations to strive to improve our environment as is described throughout this annual report. We give details of stewardship efforts and best practices supporting government and non-government resources and broader environmental needs. This section is provided to highlight a group of governmental and non-governmental opportunities that individuals or organizations might consider supporting with their time and focus. Many of these organizations rely on volunteer resources to be effective, and greater participation may allow the organizations to expand the scope of their current work. EQAC does not assert that these are the only organizations making a valuable contribution to our environment, and we hope, in future reports, to expand the list of activities that are identified--this is the second year that we have provided this section and we hope to make it more valuable to the county leadership and to environmentally-conscious members of the community in the future. Some government organizations are listed if they either organize environmental activities or provide a good source for members of the community who want to contribute their time to improving environmental quality.

1. NOVA PARKS (NORTHERN VIRGINIA REGIONAL PARK AUTHORITY)

For the environmentally-conscious park enthusiast, we recommend contacting NOVA Parks (the Northern Virginia Regional Park Authority), <http://www.NVRPA.org/>. NOVA Parks continues to have a roving park naturalist regularly visit the high-attendance parks such as pools, campgrounds and golf courses, bringing live wildlife and other exhibits and providing programming about nature and the environment. The naturalist also attends events and functions such as the Dominion W&OD Trail Mix, the Walter Mess 5K race and the Friends of the W&OD 10K race.

In 2012, the Northern Virginia Regional Park Foundation gave grants through its Nature Nuts Program to 11 Fairfax County public schools for children to attend environmental education camps at Hemlock Overlook Regional Park. Adventure Links at Hemlock Overlook Regional Park in Clifton offers a variety of outdoor and environmental education, team development programs for public and private schools, religious and community groups, sports teams, corporations, professional organizations and local, state and federal government and military agencies. Also in 2012, Meadowlark partnered with the Volgenau Foundation to provide teacher training and student field trips to Meadowlark Botanical Gardens and Potomac Overlook Regional Park. These trips focus on the natural history of the Potomac River basin, conserving native plants and animals.

NOVA Parks partners with REI's adventure school, introducing people to the outdoors at Pohick Bay, Hemlock Overlook and Fountainhead Regional Parks. NOVA Parks' naturalists hold regular educational canoe and kayak trips at Pohick

Bay, and the roving naturalist conducts environmental programs at Meadowlark Botanical Gardens as well as at Bull Run and Pohick Bay Regional Park campgrounds. Potomac Overlook Regional Park and W&OD Trail staff hosted booths at various county fairs to give environmental information to the public.

Occoquan Regional Park hosted two clean up events on the Occoquan River and added five new recycling bins at its picnic shelters and boat ramp. Fountainhead and Bull Run Marina were host sites for the Friend of the Occoquan clean-up days, removing dozens of bags of trash from the reservoir area. At Sandy Run Regional Park, rowing crew teams took part in water clean-up days, removing trash from the Occoquan Reservoir around Sandy Run. New trash cans were installed at Fountainhead and the W&OD Trail to prevent tipping and foraging by wildlife.

Environmental stewardship opportunities for volunteers are available at Meadowlark Botanical Gardens, Potomac Overlook Regional Park, Upton Hill Regional Park, Pohick Bay Regional Park and various other parks on occasion. NOVA Parks implemented a program that allows youth to access its fee-based park facilities through volunteer service. It has a wide variety of community partnerships in place that encourage groups to take advantage of the regional parks for environmental and historic education and service projects.

2. FAIRFAX COUNTY PARK AUTHORITY

The Fairfax County Park Authority offers a number of opportunities for volunteers, and EQAC encourages county residents to take advantage of these opportunities. Information about these opportunities is available at <http://www.fairfaxcounty.gov/parks/volunteer/>.

More information about FCPA and its programs is available at: <http://www.fairfaxcounty.gov/parks/resources>.

Many of the stewardship activities that occur on parkland could not take place without the efforts of many volunteers and partners. Groups and individuals participate in a wide range of volunteer opportunities in environmental stewardship on parkland, from becoming a permanent volunteer for the Park Authority to one-off events. In FY 2013, volunteers contributed over 26,000 hours to natural resource stewardship activities on parkland.

Specifically, volunteers engage in programming, leading walks and tours, writing fliers or brochures, answering the phone when a resident calls with an environmental question and/or hands-on resource management. FCPA partners with local agencies and nonprofits in two different annual stream clean-up events, although many individuals and friends groups participate in more regular clean-ups along certain sections of stream throughout the year. FCPA also has habitat restoration events, including invasive plant removal and native species planting that attract day participants and more committed volunteers, e.g. the IMA Volunteer Leaders. Wildlife monitors work on birds and salamanders and everything in

between, often in coordination with a long-term wildlife monitoring program such as the Virginia Bluebird Society. The Fairfax Master Naturalists have taken on some of these projects or created new opportunities to contribute hundreds of hours to Park Authority sites. FCPA continues to offer many of its environmental stewardship opportunities for youth to get involved in their local parks to include as permanent volunteers, as students for their community service hours and scouts for Eagle and Gold Award projects. FCPA encourages its volunteers, be they individuals, groups, students or scouts, to propose ideas of how they can help steward the parks.

3. NORTHERN VIRGINIA SOIL AND WATER CONSERVATION DISTRICT

The Northern Virginia Soil and Water Conservation District supports numerous opportunities throughout the year to participate in stream cleanups, storm drain labeling, volunteer water quality monitoring and tree planting projects. Interested parties can send an e-mail to NVSWCD at <https://www.fairfaxcounty.gov/contact/mailform.aspx?ref=9990> or call 703-324-1460. It is also a good resource for advice to homeowners on problems with ponds, eroding streams, drainage, problem soils and other natural resource concerns. More information about managing land for a healthier watershed is available from the NVSWCD publications "You and Your Land, a Homeowner's Guide for the Potomac River Watershed" (<http://www.fairfaxcounty.gov/nvswcd/youyourland/>) and the "Water Quality Stewardship Guide" (<http://www.fairfaxcounty.gov/nvswcd/waterqualitybk.htm>). NVSWCD can assess the problems and advise on possible solutions.

4. FAIRFAX COUNTY DEPARTMENT OF PUBLIC WORKS AND ENVIRONMENTAL SERVICES

There are numerous opportunities throughout the year to participate in stream cleanups, storm drain labeling, volunteer water quality monitoring and tree planting projects. Interested parties can send an e-mail to NVSWCD at <https://www.fairfaxcounty.gov/contact/mailform.aspx?ref=9990> or call 703-324-1460. Additionally, DPWES-Stormwater Management provides links to information about these popular volunteer programs on its website at <http://www.fairfaxcounty.gov/dpwes/stormwater/>. For a list of common household hazardous materials and how to dispose of them, go to <http://www.fairfaxcounty.gov/dpwes/trash/disphhw.htm>.

5. ENERGY ACTION FAIRFAX PILOT PROGRAM

Fairfax County has implemented the Energy Action Fairfax pilot program to provide ways for residents to learn about their energy consumption and how to reduce it through improved energy efficiency. The program has been narrowly focused and aimed at homeowners in Fairfax County, particularly those occupying single-family homes and townhouses. The program's direct outreach has included presentations at homeowner association meetings, small "audit parties" within selected communities

and the distribution of informative brochures at events and fairs. The program also generated stories for local media and created a multi-faceted presence on the county website (www.fairfaxcounty.gov/energyactionfairfax/) that includes tips sheets, checklists and short how-to videos. Groups or individuals may want to contact Energy Action Fairfax to discuss ways to support their educational efforts within a specific community.

6. THE NORTHERN VIRGINIA CLEAN WATER PARTNERS EFFORTS TO MANAGE PET WASTE

Examples of activity of this group include its Dog Blog and Facebook pages for dog owners. During 2012, the blog and Facebook pages had more than 88,000 views, up from about 24,000 views in 2011. Based on the success of the 2010 and 2011 contests, the organization held the Third Annual Dog Blog Essay Contest. Eleven nonprofit organizations submitted an entry into the “Bark Your Piece” contest, which resulted in 10,360 votes. The three winning organizations received \$5,000 in grants to use toward veterinary care, spaying and neutering, dog food and pet owner education. Find out more about this organization at its website at <http://www.onlyrain.org>.

7. CLEAN FAIRFAX

Clean Fairfax Council, now known as Clean Fairfax, is a private, nonprofit (501(c)(3)) corporation dedicated to educating residents, students and businesses in Fairfax County about litter prevention and recycling. Clean Fairfax focuses on environmental education provided to students and adults throughout the county. Clean Fairfax continues efforts of updating the educational and interactive programs for students, community service opportunities for students (i.e., support at the council’s office or organizing clean ups), classroom presentations and presentations to homeowner associations and other groups.

A key effort of the council is the sponsorship of spring and fall cleanups. These cleanups rely on volunteers who desire to clean up a certain area of the county. The council asks volunteers to plan their cleanup by selecting a site, gathering volunteers and setting a date and time. Clean Fairfax supplies all the necessary tools provided (gloves, trash bags, recycling bags, vests and safety tips) for a successful cleanup. A follow-up form is available on the Clean Fairfax website to track progress, tally volunteer hours and trash pickup tonnage. Last year, Clean Fairfax worked with over 2,310 volunteers at 90 assisted clean ups, picking up over 7,800 bags of trash, on and around Fairfax County’s roads, parks and side streets. Clean Fairfax also organizes periodic clean-up projects around the Government Center, with Fairfax County employees and area businesses.

Clean Fairfax continues to organize and lead the Earth Day/Arbor Day event, now called SpringFest Fairfax, in partnership with the Department of Public Works and Environmental Services, the Fairfax County Park Authority and Workhouse Arts.

Now in its second year at The Workhouse, over 5,000 children and families attended this all day, Virginia Green certified event which included environmental education and entertainment, local food vendors, urban forestry workshops and open studio artist exhibitions. Other major continuing projects include: outreach on reducing residents' reliance on plastic grocery bags; cigarette butt litter education and reduction through a unique partnership with northern Virginia auto dealerships; promotion of the use of rain barrels; advising and mentoring environmental clubs in the school system; encouragement of small scale, backyard composting, grass-cycling, rain and pollinator gardens and other sustainable practices; and encouragement of community gardens and micro farms at schools and churches.

Clean Fairfax reaches Fairfax County residents by e-newsletters, Facebook and Twitter as well as an environmental blog updated twice weekly at www.cleanfairfax.org.

There are many other programs offered by Clean Fairfax, including programs beyond litter prevention and control. For more information, please visit the website at www.cleanfairfax.org or the SpringFest Fairfax website at www.springfestfairfax.org

8. ALICE FERGUSON FOUNDATION

The nonprofit Alice Ferguson Foundation was established in 1954. While chartered in Maryland, it has implemented programs throughout the Potomac River watershed, with benefits to the main stem of the river as well as tributaries in Washington, D.C., Maryland, Pennsylvania, West Virginia and Virginia. As stated on its website, the foundation's mission is "to provide experiences that encourage connections between people, the natural environment, farming and the cultural heritage of the Potomac River Watershed, which lead to personal environmental responsibility."

In April 2014, the foundation held its 26th annual Potomac River Watershed Cleanup. While not all data is currently available from these cleanups, preliminary reports show that over 11,375 volunteers removed almost 220 tons trash and debris from the region at 318 cleanup sites throughout Washington, D.C., Maryland, Virginia, West Virginia and Pennsylvania. The trash collected during the cleanup included 938 tires, 205,200 beverage containers, 35,500 plastic bags and 18,600 cigarette butts.

Other programs implemented by the foundation include:

- **Trash Free Potomac Watershed Initiative:** This is a program to reduce trash, increase recycling and provide education regarding trash issues in the watershed.
- **Potomac Watershed Trash Summit:** The foundation convenes this meeting annually to provide a venue for key stakeholders to collaborate on strategies to eliminate trash from waterways, communities, streets and public lands, including regional public policy, model best management practices, business actions and public education.

- **Enforcement:** In April 2014, the foundation worked in partnership with the Metropolitan Washington Council of Governments and nine local jurisdictions in a campaign to reduce littering and illegal dumping through enforcement of local laws. This effort provided a focus on litter-related crimes and raised awareness of the harmful effects trash has on communities and the environment.

There are numerous other programs and initiatives that are implemented by the foundation; the reader is encouraged to visit the foundation's website at www.fergusonfoundation.org.

9. CLEAN AIR PARTNERS

Residents of Fairfax County have many opportunities to contribute to improvements in air quality. While some of the Metropolitan Washington area ozone problem originates outside of the area and is beyond the control of Virginia, Maryland and the District of Columbia, there are many aspects of our daily lives that can affect the quality of our air. A significant contributor to air quality issues is vehicle miles traveled. As discussed above, Virginians drive many millions of miles each year. Reducing the amount of driving, as well as the use of other combustion devices, especially during times where ground-level ozone is of concern (e.g., on hot days with lots of sun and little or no wind), can help to improve air quality. Examples of actions that can be taken include: carpooling; taking mass transit; reducing or postponing lawn-mowing, paving and outdoor painting; limiting vehicle idling; bringing a lunch to work; avoiding drive-thru windows; and refueling after dark.

The following are tips provided on the Clean Air Partners website (www.cleanairpartners.net):

Small Changes Make A Big Difference

Begin the day right. Check [today's air quality forecast](#) and modify your plans if unhealthy air quality is predicted. Protect yourself and others in your care, by taking the appropriate actions. Making small changes in your lifestyle at home, at work, and on the road can make a big difference.

At Home:

- *Postpone mowing and trimming or use electric garden equipment.*
- *Postpone painting or use water-based paint instead of oil-based paint.*
- *Replace your charcoal grill with a propane gas grill.*
- *Choose ENERGY STAR™ appliances and lighting.*
- *Cut back on heating and air conditioning when you can and turn off lights and appliances when not in use.*
- *Clean heating filters each month.*

At Work:

Employers have a unique opportunity to make a difference. They can promote programs that help employees make positive lifestyle changes. For example, employers can encourage staff to use public transportation or carpool. Employers also can give employees the option of working from home. Encourage employees to sign up for [AirAlerts](http://www.cleanairpartners.net/airalert.cfm), a free service that delivers air quality information straight to their inbox <http://www.cleanairpartners.net/airalert.cfm>.

On the Road:

- *Keep driving to a minimum.*
- *Fill up your gas tank during evening hours. Avoid spilling gas and “topping off” the tank. Replace gas tank cap tightly.*
- *Have your car tuned regularly by replacing the oil and air filter, and keep tires properly inflated and aligned.*
- *Carpool or use public transportation when possible.*
- *Combine your errands into one trip.*
- *Avoid revving or idling your engine.*
- *Avoid long drive-through lines; instead, park your car and go in.*
- *Looking for a new vehicle? Consider purchasing a fuel-efficient model or a hybrid that runs on an electric motor and gasoline engine.*

<u>HOW TO REPORT ENVIRONMENTAL CRIMES OR CONCERNS IN FAIRFAX COUNTY</u>	
<u>TTY 711 for all phone numbers</u>	
Type of Incident	Phone Number
<p><u>RELEASE OF HAZARDOUS MATERIALS INTO THE ENVIRONMENT—ACTIVE RELEASE, DANGEROUS, OR UNKNOWN</u></p> <p>If the dumping of any substance into a stream, into a manhole, into a storm drain or onto the ground is witnessed, assumptions regarding the contents of the materials should not be made. 911 should be called immediately. When calling 911, be prepared to provide specific information regarding the location and nature of the incident. The local office of the U.S. Environmental Protection Agency (703-235-1113) can be called in addition to (but not instead of) 911.</p>	911
<p><u>RELEASE OF HAZARDOUS MATERIALS INTO THE ENVIRONMENT—NO IMMEDIATE DANGER</u></p> <p>If a known discharge of hazardous materials has occurred in the past and no lives or property are in immediate danger; this should be reported to the Fairfax County Fire and Rescue Department’s Hazardous Materials and Investigative Services Section at this number (includes Towns of Clifton, Herndon and Vienna). If there is any question about whether a release may still be active or whether there may be any immediate danger, 911 should be called.</p>	<p>703-246-4386 (working hours)</p> <p>703-691-2131 (after hours)</p>
<p><u>RELEASE OF ANY MATERIAL INTO THE ENVIRONMENT</u></p> <p>Any release of materials into the environment, whether hazardous or not, should be reported to the Northern Regional Office of the Virginia Department of Environmental Quality at the above number. If the release is an active one, call 911.</p>	<p>703-583-3800</p> <p>OR</p> <p>911</p>
<p><u>LAND CLEARING; TREE REMOVAL; DUMPING OF FILL</u></p> <p>To report the suspected illegal removal of trees, clearing of land, digging or dumping of fill dirt, contact the Department of Code Compliance, or visit www.fairfaxcounty.gov/code.</p>	703-324-1300
<p><u>SOIL EROSION</u> To report soil erosion from private properties or construction sites, contact the Department of Code Compliance, or visit www.fairfaxcounty.gov/code.</p>	703-324-1300

Type of Incident	<u>Phone Number</u>
<p><u>GENERATION OF DUST FROM CONSTRUCTION, GRADING OR LAND CLEARING</u> Contact the Department of Code Compliance, or visit www.fairfaxcounty.gov/code.</p>	<p>703-324-1300</p>
<p><u>CONSTRUCTION NOISE</u> To report construction noise outside between 9 p.m. and 7 a.m. or before 9 a.m. on Sundays and federal holidays, contact the Department of Code Compliance, or visit www.fairfaxcounty.gov/code.</p>	<p>703-324-1300</p>
<p><u>NOISE IN A RESIDENTIAL AREA</u> To make a complaint about nuisance noises (e.g. barking dogs or loud music) in residential areas only, call the Fairfax County Police non-emergency number.</p>	<p>703-691-2131</p>
<p><u>TRASH COLLECTION BETWEEN 9:00 P.M. AND 6:00 A.M.</u> Call the Department of Public Works and Environmental Services. If possible, provide descriptive information about the truck, such as color, truck number, and license plate number.</p>	<p>703-324-5230</p>
<p><u>SIGNS ON ROADS AND MEDIANS</u> If a sign on a road or median poses a safety hazard, call the Virginia Department of Transportation to have it removed. Fairfax County performs monthly collections of illegal roadway signs on certain designated roads. More information at www.fairfaxcounty.gov/code/signs.</p>	<p>1-800-367-7623</p>
<p><u>SIGNS ON PRIVATE PROPERTY</u> There are restrictions for signs on private property. For more information contact the Department of Code Compliance, or visit www.fairfaxcounty.gov/code.</p>	<p><u>703-324-1300</u></p>
<p><u>POORLY MAINTAINED HOMES</u> To report problems including broken windows and gutters, junk or debris in yards and tall, uncut grass, contact the Department of Code Compliance, or visit www.fairfaxcounty.gov/code.</p>	<p>703-324-1300</p>
<p><u>OUTDOOR LIGHTING CONCERNS</u> To report problems with glare, overlighting or other issues, contact the Department of Code Compliance, or visit www.fairfaxcounty.gov/code.</p>	<p>703-324-1300</p>

Type of Incident	<u>Phone Number</u>
<p><u>AIR POLLUTANTS</u> Air pollutants are emitted by stationary sources, such as power plants, gasoline service stations, and dry cleaners, as well as by mobile and area sources, such as from automobiles, trucks and other highway activities. This phone number is for the Virginia Department of Environmental Quality Northern Regional Office.</p>	<p>703-583-3800 After hours, call 1-800-468-8892</p>
<p><u>NO RECYCLING IN SCHOOLS</u> Section IX of the Fairfax County School Board’s Policy 8542 states that “Schools and centers will have mandatory recycling programs for paper products, cans, and bottles. Construction waste materials will be separated and recycled.” To report schools that are not recycling in accordance with this policy, contact the Fairfax County Public Schools Office of Facilities Management, Plant Operations Section. More information is available at: http://www.fcps.edu/fts/facmanagement/recycle.shtml</p>	<p>703-764-2459</p>
<p><u>HEALTH HAZARDS</u> For information and guidance on a suspected environmental hazard that may pose a public health risk, call the Health Department’s Division of Environmental Health. These hazards include unsanitary storage or disposal of waste; unburied dead animals; medical waste; insect infestations; and mosquito breeding sites.</p>	<p>703-246-2444</p>

I. Climate Change and Energy

Background

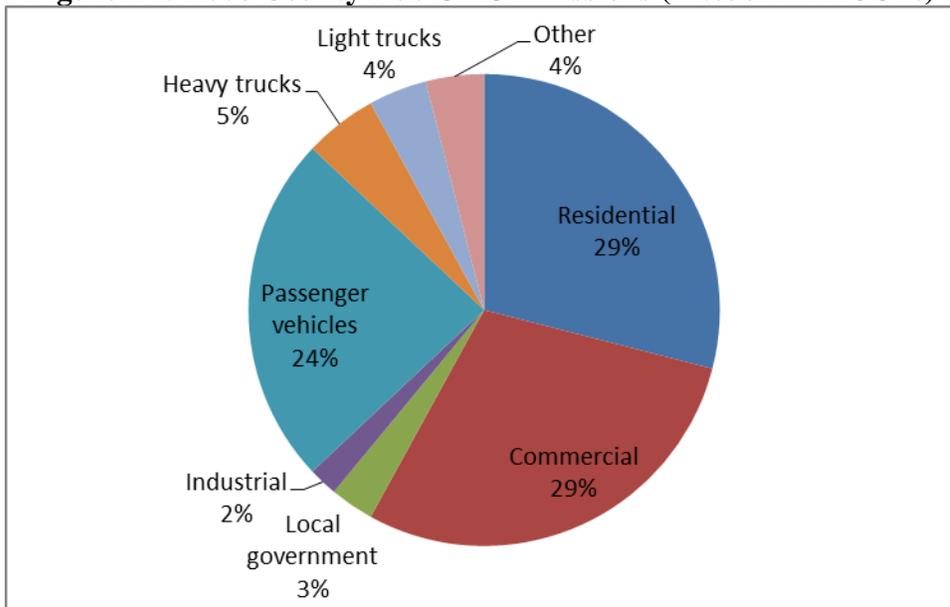
This chapter outlines work that is under way in Fairfax County to reduce greenhouse gas emissions and improve energy efficiency.

Is there evidence of climate change for Fairfax County? In recent years we have seen warmer temperatures and more poison ivy, which has been attributed to slightly warmer temperatures. As a result of the rise in sea level in Fairfax County, the county has redrawn the floodplain boundaries on maps to meet Federal Emergency Management Agency floodplain designations, resulting in more home structures now being located in floodplains. The Governor's Commission on Climate Change estimated that there will be a sea level rise between 1 and 1.6 feet by 2050 and between 2.3 and 5.2 feet by the year 2100. Similar impacts are being predicted around the world. National and international responses to climate change are expected, and while there are few national mandates to address climate change, Fairfax County is fortunate that it is actively pursuing opportunities to inventory and reduce GHG emissions.

Fairfax County Greenhouse Gas Emissions Inventory

The Fairfax County GHG emissions inventory followed accepted practices for the conduct of such inventories. As Figure I-1 shows, the main sources of GHG emissions are electricity generation (both residential and commercial) and mobile sources.

Figure I-1. 2006 Countywide GHG Emissions (11.838 MMTCO_{2e})¹



Source: *Community Greenhouse Gas Inventory for Fairfax County, Virginia, Report of Findings: 2006-2010*, Fairfax County, Virginia (advance copy).

While Figure I-1 groups GHG emissions into a few groups of emission sources, there are many different sources of GHG emissions and many opportunities for reducing GHG emissions.

Activities that Fairfax County Residents can Undertake to Reduce GHG Emissions

The Fairfax County GHG inventory serves as a guide for both actions that EQAC feels are fundamental to any GHG emissions reduction effort (e.g., monitoring energy use in buildings and undertaking renovations to be energy efficient) and other actions. Some efforts, such as saving energy, reducing vehicle miles, carpooling or maybe riding a bike to work will involve changes in lifestyle that can be better for the planet and good exercise.

Fairfax County Operations GHG Emissions and Actions to Reduce these Emissions

The Fairfax County government has undertaken extensive efforts to both characterize GHG emissions associated with county operations and to target opportunities for increased energy efficiency. While county savings from these efforts are to be commended, the success of Fairfax County government in characterizing emissions and improving the efficiency of operations serves as a model for both businesses and residents in the county. In order to improve energy efficiency and reduce GHG emissions, the county has and continues to undertake work in county facilities, vehicle services, green buildings, parks, waste management and transportation.

Education and Outreach

Fairfax County applied for and obtained a grant from the Department of Energy; this grant was used to create Energy Action Fairfax. The Energy Action Fairfax program is aimed at homeowners in Fairfax County, particularly those occupying single-family homes and townhouses. This program filled an important need for residents to be provided with valuable information as to how they can reduce their energy consumption, reduce their carbon footprints and sometimes save money in the process. EQAC commends this effort and recommends the continuation of education and outreach through a follow-on program (see the Recommendations section of this chapter).

Development of an Energy Strategy

Given that greenhouse gas emissions from anthropogenic sources are the primary source of climate change, reducing the release of greenhouse gases is critical to reducing climate change. An Energy Strategy to address all sectors of the county from Fairfax County government to the residential and commercial sectors is important to reducing the emissions of GHG.

Waste Management and Energy Efficiency

Planning for Climate Change

Climate change is happening now. Even if greenhouse gas emissions were reduced tomorrow, the impact of greenhouse gases will continue, so planning to mitigate for the impact of climate change will be more cost-effective than repairing the damage that results from climate change. For this reason, many government agencies from local government to the federal government,

especially those adjacent to coastal waters, are developing plans to minimize the impacts of climate change. Such planning can include a variety of actions such as restricting development in low lying areas.

Comments

1. The Facilities Management Department cost avoidance from fiscal year 2001 to fiscal year 2010 is in excess of \$7 million, or an average annual energy reduction of one percent. For example, one energy project performed by part-time efforts of one staff member resulted in a cost avoidance of approximately \$83,000 annually at the Government Center complex (variable frequency drives, lighting retrofits and lighting software upgrades). More could be accomplished with dedicated staffing. EQAC commends the county for its past efforts and looks forward to working with the county in the future on its climate change program.
2. EQAC commends the county for assembling an inventory of greenhouse gas emissions for Fairfax County facilities and for designing a GHG reporting program for county that allows for GHG emissions to be easily combined with reporting of other jurisdictions.
3. EQAC commends the county for recognizing the importance of reducing the community's GHG emissions and for soliciting bids for a county-wide education and outreach program that would cut GHG emissions. EQAC believes that this effort has been productive and encourages the county to continue this work.
4. EQAC commends the county for participation in regional efforts to reduce GHG emissions and improve energy efficiency. Certain GHG programs, such as transportation related programs, district energy and reporting of carbon footprints require intergovernmental cooperation.
5. EQAC commends Fairfax County for the work that has taken place to support residential education and outreach. This is a good beginning but it will need continued support. The residential sector is a big part of Fairfax County and there are potential significant efficiencies to be realized by the County. This should continue to be an area of emphasis.

Recommendations

1. While EQAC is very encouraged to hear that a process has been established through which funding can be provided for a variety of environmental initiatives through the county's Environmental Improvement Program, including education programs (including social media) and other programs to promote energy efficiency, EQAC is concerned that the EIP activities were eliminated as part of budget negotiations for the FY 2015 budget. EQAC appreciates the Board of Supervisors' restoration of funding for EIP projects through the FY 2014 carryover process, but the FY 2015 budget decision suggests that future funding of EIP projects may be uncertain. EQAC recognizes that these programs hold promise for efficiencies that might not be identified by other means. It is EQAC's view that, if Fairfax County is going to continue to compete with neighboring jurisdictions for progressive companies to enhance our workforce, Fairfax County must be a leader in energy efficiency, outreach and education and environmental stewardship in general. EQAC recommends that

the county executive and the Board of Supervisors support and fund those projects that are recommended by staff. Moreover, EQAC recommends that funding for the EIP be structured so that it is not as vulnerable to future actions like the one that would have eliminated it for FY 2015.

2. EQAC recommends that the Board of Supervisors direct county staff to evaluate alternatives for the county to further reduce greenhouse gas emissions from either incineration of waste or placement of waste in landfills. The long-term goal should provide for expanding the recycling of all waste streams, including composting of compostable waste. The expansion of waste streams recycled should be considered as the county develops a strategic plan for the management of county waste. Specific recommendations related to the support of recycling are included in the Solid Waste chapter.
3. The work of the Private Sector Energy Task Force was intended to help Fairfax County position itself as a leader in the area of energy efficiency, sustainability and “green” technology. The Private Sector Energy Task Force was a good beginning, but the work recommended by the task force is languishing and needs to be reinvigorated. As an example, EQAC recommends that Fairfax County place a priority on supporting education and recognition for companies that adopt energy efficient approaches as part of their business practices.
4. Fairfax County should undertake an effort to identify all the impacts of climate change that might reasonably be expected to impact the county. This information will help to: 1) better plan for potential impacts; and 2) initiate mitigation or adaptation efforts where appropriate.
5. Fairfax County has made significant strides in monitoring energy use, identifying opportunities for reducing energy use, and reporting this information to the county government. Just as this information has been useful to the county, it would also be helpful for businesses and residents to see the benefits of monitoring energy use. EQAC recommends that monitoring information that shows the benefits of monitoring be made available to the public and private sectors.

References

Fairfax County. 2012. Community Greenhouse Gas Inventory for Fairfax County, Virginia.

II. Land Use and Transportation

Background

EQAC encourages the integration of land use and transportation as an important tool to enhance environmental quality. This chapter examines the trends and decision-making processes for land use and transportation that have evolved over time as the county becomes more populated, developed and prosperous within a finite and impacted environmental footprint. As detailed in this chapter, the county has very little vacant land left. With the approach of “build-out,” the focus of land use across the county is shifting from new development to revitalization and redevelopment. The desire to maximize land utilization or productivity puts a strain on all types of land, from residential to commercial to parkland.

In May 2012, the county issued a report entitled *State of the Plan—An Evaluation of Comprehensive Plan Activities Between 2000-2010*. This report describes changes that have been happening to the Comprehensive Plan over the past 10 years. As changes are made to the Plan, the key metric available for growth is the ***Plan potential***. This tracks the amount of space that can be built across the county. Since the county is close to build-out, with only 6.1% vacant space available, the Plan potential increases through redevelopment that allows bigger and taller developments. In the residential sense, this means more multi-family complexes. In the nonresidential space, it means higher office buildings with multiple uses. After reviewing the 284 plan amendments, the following themes arose:

1. *Encouragement of Intensity and Land Use Flexibility in Mixed Use Centers.*
2. *Protection of Low Density Residential Neighborhoods.*
3. *Avoid Re-Planning Industrial Areas.*
4. *Expansion of Medical Facilities.*
5. *Revision of Policy Plan Regarding Acquisition of Land for Public Parks.*
6. *Environmental Policy Issues in Area Planning Process.*

The themes and trends clearly show that Fairfax County can continue to grow and accommodate new population and businesses into the future. As we grow, though, important values are reflected in how and where that growth occurs. The most valuable areas for growth are mixed-use centers. At the same time, we are focused on protecting residential neighborhoods. Parks and environmental themes reflect the value that the residents place on these resources. Among the important environmental initiatives over the past 10 years were the implementation of the county watershed management plan and the augmentation and clarification of the Environmental Quality Corridor policy to preserve ecologically sensitive habitats.

The Department of Planning and Zoning has the lead responsibility for land use planning in the county. Over the past several years, there has been a concerted effort to improve

how the county plans for development and redevelopment. By 2013, it was realized that the ARE process was not sufficient for a growing county facing build-out and transitioning from development to redevelopment and revitalization. EQAC was one of the advocates for a more comprehensive and consistent process. Fairfax Forward is the new process that focuses and aligns resources on priority projects. This approach is working well and includes checkpoints to monitor and improve the process over time.

Transportation Focus

Concurrent with land use build-out, transportation systems across the county and metropolitan region are becoming increasingly congested. During rush hour, most highways in the county receive a failing grade for peak hour level of service. Over the past 15 years, highway construction in the Washington area outpaced population growth, yet congestion has still increased. Discussions of transportation and the environment typically start with automobiles and the negative environmental impacts of cars. As congestion and density increase, however, single occupancy cars cannot be packed densely enough to move everyone about effectively. This is happening in Fairfax County, where the transportation discussions are increasingly focused on multi-modal and public transit options that provide a better balance of options suited for particular needs.

The transition towards multi-modal and public transit options brings many environmental improvements. They include: reducing air pollution caused by automobiles and traffic congestion; reducing water pollution caused by roadway and parking lot runoff and construction; reducing noise pollution caused by on-road vehicles; reducing energy consumption required to operate motorized vehicles; and the healthy sensation of personal mobility.

In 2013, a new transportation funding plan was approved in Virginia. This action increased funding for transportation from an additional \$392 million in FY 2014 to \$817 million in 2018, for a total of almost \$3.3 billion. In addition, regional funding has been provided for Northern Virginia (\$1.6 billion over five years) and Hampton Roads (\$1.1 billion over five years). In Northern Virginia, 30 percent of funds go to localities and 70 percent of funds are for regional projects approved by the Northern Virginia Transportation Authority. Funds can be used for road construction, projects that reduce congestion and public transportation projects that expand capacity.

Since 1999, there has been a procession of large transportation projects (the “mega projects”) across the county. The Wilson Bridge replacement was the first mega project, followed by the I-95/I-495/I-395 “mixing bowl,” then the combination of the Silver Line Metrorail extension and the I-495 Express Lanes. The mega-transportation projects are expensive, designed for a long time and impact many constituents. The agencies responsible for building the mega projects have delivered them on time and budget with the promised improvements in both capacity and safety.

These mega projects, however, need to be balanced with regular maintenance of the existing infrastructure. An important policy identified by the Coalition for Smarter Growth is “fix-it-first,” to ensure that all state maintenance needs are met and to direct funding to fixing problems on existing roads and transit prior to funding new construction.¹ This policy highlights the competition among transportation funding priorities. Projects that were once new require ongoing maintenance. New projects need to be judged by their ability to enhance the existing network and to maximize their potential to support comprehensive plans for growing into the future.

The U.S. Census tracks the modes used by people to get to work each day. The 2012 data shows that of the 606,954 workers, 16 years and over, who live in Fairfax County:²

- 71.6 percent drove alone to work in a car, truck or van. (SOV)
- 10.2 percent of those workers commuted via carpool or vanpool. (HOV)
- 9.1 percent used public transportation (excluding taxicabs).
- 1.8 percent walked to work.
- 1.6 percent used other means (including biking).
- 5.8 percent worked at home. (This number may not fully represent the true number of teleworkers in Fairfax County.)

Across all modes, the mean travel time to work is 31.7 minutes. The Metropolitan Washington Council of Governments has noted:³

“Nearly three-quarters of Fairfax County resident workers commute to work by driving alone, compared to 68 percent of the Washington region’s workers. Seven percent of Fairfax County’s resident workers use public transportation, compared to 11 percent of the Washington region’s workers. Thirteen percent of resident workers of both Fairfax County and the Washington region use car pooling as a means of transportation to their jobs.

Of the 350,714 owner-occupied housing units in Fairfax County, 4% (14,207 housing units) do not have vehicles. For renter-occupied housing units, approximately 9% do not have vehicles.”

There are clearly opportunities to leverage multi-modal options across the county. This requires, however, the integration of land use decisions with transportation projects. As can be seen in Tysons and in other mixed-use centers across the county, focused efforts are aligning resources to create vibrant places for people to live, work and have a high quality of life. The Comprehensive Plan needs to be updated holistically. Multi-modal transportation options need to be designed that include a street grid, public transit--especially Metro, safe pedestrian access, connected bike paths and connector shuttles.

¹ <http://www.smartergrowth.net/news-parent/press-releases/joint-statement-in-support-of-a-fix-it-first-jobs-first-sustainable-stimulus/>

² Source: 2012 American Community Survey 1-year estimate. Area: Fairfax County.

³ Source: January 2006 publication “Fairfax County and the Washington Region: A Look at Economic and Demographic Characteristics” (p.5):

These options need to be managed through transportation demand management programs and encouraged through outreach and education so they achieve their potential.

The Board of Supervisors highlighted the effects of growth and congestion in its vision paper: *Environmental Excellence for Fairfax County, A 20-Year Vision*. By modernizing the planning process and leveraging new development patterns and transportation alternatives, the county can continue to make progress towards those 20-year goals.

Technology to Understand the County

Fairfax County is a recognized leader in using technology to better understand, explain and predict changes. The centerpiece of the technology is its Geographic Information System managed by GIS & Mapping Services, which is a branch of Fairfax County's Department of Information Technology. It is tasked with developing, maintaining, coordinating and distributing GIS/mapping data and technology to Fairfax County government agencies and residents. GIS provides a capability to "see" the county through maps, imagery and other geospatial data and helps analysts discover relationships between and among sets of computer-readable, geographically referenced data. To complement the GIS, the county has assembled a comprehensive digital inventory of the 395 square miles within our borders. These investments in information technology and GIS are paying dividends in increased staff productivity using more and better data.

Two applications that are very useful for constituents are:

The **Virtual Fairfax** 3-D application is an example of the power of digital technology: (<http://www.fairfaxcounty.gov/gis/virtualfairfax/>). Besides being fascinating to fly through our neighborhoods, it is very practical for boards and commissions to visualize proposed changes and make more informed decisions and recommendations.

My Neighborhood lets users know what features and facilities are available in and around their neighborhoods. A new My Neighborhood Report is under development and is anticipated to be released later in 2014.

(<http://www.fairfaxcounty.gov/gisapps/myneighborhood/default.aspx>)

Over the past several years, EQAC has advocated for an enhanced IT capability for managing and monitoring land use. Our original recommendations in this area focused on updating the 1970s mainframe-based Urban Development Information System. In 2005, the Integrated Parcel Lifecycle System debuted--IPLS combines parcel based information from various county agencies with the GIS. Many agencies work on parcels for a particular period, but IPLS allows that full lifecycle to be captured across agencies. Layering these data on the GIS allows for a visualization of how land in the county is used and how it changes over time.

Through work with the county's Department of Information Technology, EQAC has become more familiar with capabilities and possibilities for using GIS. There are three attributes that must be in place for the technology to be effective:

- The GIS and IPLS capability—these are the technical systems that gather, move, manipulate and display information based on geographic location.
- Data is an expensive component that needs to be constantly updated as the county changes. There are many types of data available to represent physical attributes. The county has an opportunity to add multi-spectral imagery this year, which opens up a new potential for understanding land use. EQAC recommends that the county continue to invest in data acquisition.
- Models and applications that can use the data to prepare for future scenarios and advanced visualization tools to help with decision making. The Visual Fairfax 3-D application is an example that leverages the GIS and data to help make informed decisions.

Surveys of staff across business lines have indicated that the GIS tools and capabilities allow the county to do business much more efficiently and accurately than before.

Transportation Demand Management

Transportation Demand Management is an important approach to maximize the effectiveness of the overall transportation network. The Mobility Lab⁴ describes TDM as *“a program of information, encouragement and incentives provided by local or regional organizations to help people know about and use all their transportation options to optimize all modes in the system – and to counterbalance the incentives to drive that are so prevalent in subsidies of parking and roads.”* The Mobility Lab goes further to explain that *“TDM should guide everything we do in designing our transportation and physical infrastructure so that alternatives to driving are naturally encouraged and our systems are better balanced. TDM thus underlies most of the important new initiatives of today: transit-oriented development, complete streets, walkable activity centers, livability and sustainability initiatives, and integrated corridor management, to name a few examples.”*

Fairfax County has been practicing TDM for many years, starting with early work encouraging telework and workforce flexibility, to new programs that tie TDM to development and county employees, residents and businesses to make better transportation choices.

The county has integrated TDM strategies into the land development process and has standardized this program. TDM proffers promote alternatives to single occupant vehicle trips. These proffers contain commitments to provide TDM services, goals for percentage trip reduction and remedies or penalties for non-attainment of proffered goals. In FY 2014, TDM proffers were received for new developments in Reston, Fairfax, Tysons Corner, Merrifield and Huntington.

⁴ <http://mobilitylab.org/about-us/what-is-tdm/>

The combined transportation demand management programs and outreach efforts of the FCDOT Transportation Services Group, along with programs sponsored by the Metropolitan Washington Council of Governments Commuter Connections program, have allowed the county in fiscal year 2014 to continue to reach tens of thousands of people who live or work in Fairfax County with messages about environmentally friendly transportation options. Transportation Demand Management programs have been implemented by 547 Fairfax County employers. Of those programs, 259 are at level three or four, which means the employers have implemented benefits or programs that help to reduce single-occupant vehicles. The Commuter Friendly Communities Program partnered with over 233 multi-family complexes, area developers and civic organizations to promote telecommuting, mass transit, carpools, vanpools, biking and walking instead of drive-alone commuting.

Fairfax County encourages employees to take public transportation to work through the Commuter Benefits Program. In 2014, there were 227 employees participating in the program. The county has a long history with telework. In 2014, there were 1,872 eligible county employees who teleworked at least one day a week.⁵ The county's active partnership in regional efforts to expand telework keeps it current on best practices and identifies the county as a resource for businesses on teleworking.

Recent Activities

The summary below provides a brief update on programs that span land use and transportation activities.

Dulles Rail Project

In 2014 the county saw the opening of the first phase of the Silver Line Metro from East Falls Church through Tysons Corner to Reston. The second phase is under construction, with projected opening in 2018. With the Silver Line opening, the Fairfax Connector coverage had to be modified to complement the faster Metro service available in the northwest corner of the county. Coordination of Metro and bus service was important to maximize the opportunity for all residents to use the new service.

Non-motorized and Public Transportation

Fairfax County's Pedestrian Program was started in 2002, following a spike in pedestrian fatalities. Through FY 2020, the board has designated over \$313 million in federal, state and county funding to construct high-priority bicycle and pedestrian improvement projects throughout the county. These include projects on major roadways, in activity centers, providing access to Metro stations and completing neighborhood missing links. From FY 2008 through FY 2014, the county has completed construction on 108 sites/segments, with nine additional sites/segments under construction and another 63 under design.⁶

⁵ Provided July 2014 by Sharon Kay Hackett Organizational Development and Training Division

⁶ Provided 2014 by Kris Morley-Nikfar, Fairfax County Department of Transportation

The county's Comprehensive Bicycle Program is managed through the Department of Transportation. The program's primary goal is to make bicycling a viable transportation mode and to make Fairfax County bicycle-friendly and safe. The Bicycle Master Plan and the bicycle parking guidelines are both important. Funding for implementation of both capital and non-capital elements of the county's bicycle master plan is required. . The county should consider implementation of "Bike Fairfax!"--a program for encouraging/promoting bicycling as a transportation mode with related education and outreach.

VDOT continues to ensure that biking remains an integral component of Virginia's multimodal transportation system; it is a local sponsor of Bike to Work Day events promoted by the Washington Area Bicyclist Association and Commuter Connections.

VDOT administers the Safe Routes to School Program, a federally funded program to promote safe walking and bicycling to school by students, including those with disabilities.

A comprehensive inventory and study of all bus stops in Fairfax County identified undesirable bus stop conditions for priority action. The board identified \$2.5 million from the general fund and \$7.75 million in the 2007 Transportation Bond for improvements to the priority stops identified in the study. A total of 320 sites have been completed since the bus stop improvement program began. There are currently 100 sites in project development, 50 in design/land acquisition and 25 under construction.

VDOT administers the Transportation Alternatives Program (formerly the Transportation Enhancement Program) for qualifying activities. For FY 2015, the Commonwealth Transportation Board allocated funds to Fairfax County as follows:

- \$400,000 for construction of a bikeway from the Fairfax County Parkway to the Franconia-Springfield Metrorail station.
- \$353,057 for construction of a segment of the Cross County Trail to traverse the Lorton Arts Foundation and connect Occoquan Regional Park and the Laurel Hill Greenway
- \$400,000 for construction of a sidewalk along Old Courthouse Road from Creek Crossing Road to Westbriar Elementary School.

Revitalization Projects

The Comprehensive Plan recognizes that reinvestment in communities is necessary to maintain their vitality. The Fairfax County Office of Community Revitalization facilitates strategic redevelopment and investment opportunities in older commercial activity centers and across the county. In general, recent revitalization plans support compact, walkable, mixed-use centers, which reduce the need for automobiles, increase access to transit and support other modes of transportation like bicycling and walking. Revitalization projects span the county, from McLean to Springfield and the Richmond Highway corridor. Some recent project summaries include:

Tysons Urban Center

By 2050, the 2,100 acre Tysons Urban Center will be transformed into a walkable, sustainable, urban center that will be home to up to 100,000 residents and 200,000 jobs. Tysons is envisioned to become a 24-hour urban center where people live, work and play; where people are engaged with their surroundings; and where people want to be. The redevelopment of Tysons is being pursued in a manner that should reduce greenhouse gas emissions in accordance with the Cool Counties Climate Stabilization Initiative adopted by the Fairfax County Board of Supervisors. Tysons has a unique opportunity to become a leader in environmental stewardship through protecting and improving the existing man-made and natural environments. Improvement through enhanced stormwater management and promotion of green buildings and a green network of parks and open spaces will all contribute to this stewardship.

Baileys Crossroads/ Seven Corners

The Bailey's Crossroads/Seven Corners revitalization district includes two Community Business Centers – Bailey's Crossroads and Seven Corners. Each serves as a gateway from neighboring jurisdictions to Fairfax County. The concept for Baileys Crossroads encourages a transition from a predominately retail environment to one that balances retail, office, residential, civic uses and open space. It also supports redevelopment of a "Town Center" to take advantage of the proposed transit stops for the Pike Transit streetcar that will run from the Pentagon to Skyline. The Seven Corners task force identified areas that have the potential for redevelopment and sites where change was unlikely or undesirable; developed redevelopment concepts and design alternatives to the Seven Corners interchange; and developed the design and desired character of major roadways.

Green Buildings and Electric Cars

The county is becoming a leader in building green buildings and has adopted Comprehensive Plan policy that includes broad support for green building practices and establishes linkages between the incorporation of green building/energy conservation practices and the attainment of certain Comprehensive Plan options, planned uses and densities/intensities of development, particularly in the county's growth centers.

EQAC commends the county for its commitment to green buildings and the Sustainable Development Policy for Capital Projects that requires building to achieve LEED certification. As of June 2014, the county had a total of 35 green building projects, 16 of which attained certification (14 under the LEED program and two under the Green Globes program). The other 19 projects, all of which have a goal of LEED Silver, are in design or are under construction. In addition, the county managed the LEED Gold Virginia Department of Transportation Administration Building. We are also encouraged to see eight complete projects exceeding the sustainability goal—these were awarded LEED Gold certification. We hope that the county will further its leadership with some projects striving for Platinum certification.

Electric vehicles offer an alternative to traditional gasoline vehicles. In August 2011, the MITRE Corporation, per a proffered commitment to sustainability-related work for the benefit of Fairfax County, completed a report titled “Electric Vehicle Charging Infrastructure Recommendations to Fairfax County.” The MITRE report was transmitted to the Board of Supervisors. The report included several recommendations, with a particular focus on electric vehicle charging-related opportunities associated with redevelopment in Tysons Corner. It recommends that the county encourage developers to build the infrastructure to support electric vehicle charging, then phase in the actual devices and parking reservations as the technology becomes accepted.

Comments and Ongoing Concerns

1. Progress on Major and Mega Projects

The county continues to see progress on mega projects. These include the I-495 Express Lanes and Beltway widening and the Dulles Corridor Rail Project. EQAC has made recommendations in the past expressing concern about the complexity and interaction of these efforts and the impact on localities. To date they have kept on schedule and will provide new options for transportation across the county. We remain concerned that all mitigations promised for these projects be completed to restore the environment to pre-construction conditions and replace the canopy that was removed during construction.

EQAC encourages continued funding for studies on improving transportation and multi-modal options within and between urban centers, especially along the Richmond Highway corridor.

2. Improve Transit Utilization

EQAC encourages the county to continue working to improve transit utilization through a systematic plan that includes multiple options within a community. For example, the Virginia Railway Express Burke Centre EZ Bus provides a convenient alternative to commuting to the Burke Centre VRE station. This can be combined with pedestrian improvements, more connector bus options and biking trails that together provide a diverse transportation plan.

3. Affordable Housing

EQAC commends the Board of Supervisors for adopting “The Housing Blueprint: A Housing Strategy for FY 2011 and Beyond.” There are many land use and transportation efforts under way with significant relevance to the county’s housing goals. EQAC suggests that the county:

- a. Continue to expand options for affordable housing by investing and partnering appropriately in locations that will need increased affordable options as the economy rebounds.

- b. Identify vacant offices and homes in locales with good transit options and coordinate with the real estate industry to aid in marketing those properties, thereby supporting new tenants with quality of life perquisites, improved commuting options and better residential/commercial or mixed use utilization.
- c. Coordinate with agencies and businesses to inform prospective/new workers of opportunities for desirable commutes and local housing amenities.

4. Comprehensive Planning

EQAC fully supports changes that have been made to the Comprehensive Plan update process and the retrospective analysis of changes that have been realized by the Plan over the past 37 years. The 2012 review of the Plan “*State of the Plan, An Evaluation of Comprehensive Plan Activities between 2000-2010*” (published in 2012) should continue to be updated every 10 years.

EQAC also endorses efforts to focus on revitalization through the Office of Community Revitalization (established in 2007) and the Fairfax Forward project that succeeds the APR Retrospective as a new, holistic and integrated approach to plan future development. These changes address the complexities of build-out and redevelopment and bring together the best information and tools to make wiser and more effective decisions.

We are encouraged to see Fairfax Forward as the long term process to update the Comprehensive Plan and completely replace the APR process. We also commend the Fairfax Forward team for providing a wealth of information to the public on the county Web page.

Recommendations

1. Continue to Innovate with Social Media

EQAC commends the county for embracing new technology and leveraging the Web to share and interact with public. We recommend that the county continue to integrate social media into the planning process and other outreach efforts. This allows community participation through the Internet technologies and is more cost effective and far reaching than traditional media and outreach. The concept of a virtual town-hall meeting with community participation and instant feedback is now possible. Social media is very powerful for encouraging and educating people about alternative transportation options.

2. Urban Design Standards

Urban standards are designed to improve the environment, quality of life, balance and safety of a well-planned mixed-use place. These new standards are driving the potential in Tysons Corner and can apply equally well to all transit areas, as well as suburban centers and community business centers. EQAC recommends that the county allow a wide range of urban design standards, including green spaces, to be adopted and applied to all mixed-use centers.

3. Data and Modeling

EQAC is an advocate of the county GIS and the Integrated Parcel Lifecycle System. These applications have proven their value in understanding the county and providing quantitative information to a variety of users.

- a. EQAC recommends that nonresidential development data be comprehensively integrated into the county's Integrated Parcel Lifecycle System and used for forecasting, as demonstrated by residential data that have been harnessed in IPLS for that purpose. Currently, nonresidential data on proposed development projects are captured in disparate systems for zoning and site plan applications, but have not been fully brought into IPLS, and, therefore, cannot be used for forecasting.
- b. EQAC continues to recommend that the Comprehensive Plan be reflected and modeled in the GIS. Applications such as the internal Comprehensive Plan Potential and the Comprehensive Plan Amendment applications (used to gather data for the State of the Plan report) are very useful for understanding the real time status of the Comprehensive Plan. These applications should be available to the public on the Comprehensive Plan website.
- c. EQAC recommends that the county acquire new data sources and incorporate them into the business process. Planimetric data have proven to be both cost effective and transformative. Multi-spectral imagery has the potential to enhance our knowledge of the county by answering questions such as tree species identification and tree canopy density.

4. Transportation

EQAC recommends that the county provide priority for non-motorized/multi-modal transportation options. The county has been developing a comprehensive bicycle master plan that is ready for implementation. This complements requirements for pedestrian facilities in mixed-use centers. Proper implementation of the non-motorized/multi-modal master plan needs to include:

- Implementation of the bicycle master plan. Bicycle paths provide healthy and effective options to move about the county and between connected destinations.
- Expanded bicycle parking guidelines modeled on successful programs such as the new secure bicycle parking facilities at Silver Line stations and other county park-and-ride/transit facilities.
- Funding for implementation of both capital and non-capital elements of the county's bicycle master plan.
- Implementation of an outreach and education program for encouraging/promoting bicycling as a transportation mode. This could be called "Bike Fairfax!"
- Engagement of the private sector. One example of this can be seen in New York City, where CitiBank underwrites 100 percent of the cost of a bikeshare program. This could work today in several suburban and transit centers.

III. Air Quality

Background

Through a federal-state-regional-local partnership, the quality of our air is monitored for specific contaminants and actions are taken against those who cause the contamination level to exceed allowed limits. Fairfax County's major responsibility involves participation and coordination with regional organizations on plans intended to reduce air pollution and improve air quality. More recently, the county has also taken a leadership role beyond the limits of its traditional air quality partnership; it has helped formulate and has subsequently adopted a program to reduce gases that may be the cause of global climate change. With regard to traditional air quality matters, Fairfax County has demonstrated a continuing commitment to being an active partner in improving the region's air quality.

Recent Activities

Budget Impacts

Due to the overall budget constraints in the county over the past several years, the Board of Supervisors made significant reductions in the budget for the Health Department, which ended the county's Air Quality Monitoring Program. In June of 2010, the Health Department stopped conducting air quality monitoring activities and the Virginia Department of Environmental Quality assumed full responsibility for air quality monitoring in Fairfax County. The county continues to participate on a limited basis in regional air quality planning activities. The reader is referred to previous EQAC reports (for example, in the 2013 Annual Report on the Environment) for further information related to its position and efforts related to the air quality monitoring stations.

Stage II Gasoline Vapor Recovery Systems

DEQ has followed up an EPA rulemaking concerning the widespread use of onboard refueling vapor recovery systems. The rule waived the statutory requirement that serious, severe and extreme ozone nonattainment areas adopt and implement programs requiring Stage II vapor recovery systems on gasoline dispensing facilities. Virginia previously adopted Stage II requirements in the Northern Virginia area. Following up on this rule, DEQ submitted a State Implementation Plan (or "master plan") revision to EPA on March 18, 2014, removing the Stage II program from the non-regulatory state implementation plan for Northern Virginia. EPA subsequently sent a notice to EPA on May 15, 2014 noting that the submittal is administratively and technically complete and that EPA was preparing a direct final rulemaking notice. Concurrently, DEQ is working to remove these requirements from the Virginia regulations. This effort regarding the regulations should be completed in early 2015.

Update on National Ambient Air Quality Standards for Major Criteria Pollutants

There are several activities ongoing or completed by EPA to update NAAQS for major criteria pollutants such as ozone, fine particulate matter (referred to as PM_{2.5}, or particulate matter less than 2.5 microns in diameter), Nitrogen Dioxide, Sulfur dioxide and lead, some or all of which may have impacts on Fairfax County.

Atmospheric Ozone

In March 2008, EPA tightened the eight-hour ozone NAAQS from 0.08 ppm to 0.075 ppm for both primary and secondary ozone standards, but the standard was challenged by a coalition of environmental and health advocacy groups. On January 6, 2010, EPA made a proposal to strengthen the eight-hour “primary” ozone standard, designed to protect public health, to a level within the range of 0.060-0.070 ppm. EPA also proposed to strengthen the seasonal “secondary” standard, designed to protect sensitive vegetation and ecosystems, including forests, parks, wildlife refuges and wilderness areas, to a level within the range of 7-15 ppm-hours (cumulative peak-weighted index). On September 2, 2011, EPA announced the withdrawal of the proposed rule due to presidential mandate.

Air Quality Status in Northern Virginia

Air pollutants are emitted by stationary sources, such as power plants, gasoline service stations and dry cleaners, as well as by mobile and area sources, such as automobiles, trucks and other highway activities. EPA tracks the emission of air pollutants from stationary sources, including sources in Fairfax County. Some of these emissions are discharged through smoke stacks and some emerge from the source without treatment. All are regulated under law. Virginia DEQ’s air compliance program conducts inspections of facilities within Fairfax County and records information on violations in the state’s database.

Update on County and Regional Air Quality Data

Ground-level Ozone

Ground-level ozone is a precursor to smog and can cause breathing problems for those sensitive to smog, especially those with asthma (some use the term smog as a colloquial name for ground level ozone).

On May 21, 2012, EPA published final designations for areas under the 2008 Ozone NAAQS. The Metropolitan Washington, D.C. area was designated as being in nonattainment for this standard, with a classification of marginal. The area must comply with the 2008 Ozone NAAQS by December 31, 2015.

Monitors in the metropolitan region recorded data on four days during the 2013 ozone season (down from 21 days in 2012) when ozone values were above the 0.075 ppm standard. Various studies have shown that, during certain meteorological episodes,

pollution from outside the Washington metropolitan area can cause ozone exceedances in the area. The design value for 2013 (2011-2013) is 81 ppb, slightly below the 1997 ozone standard of 85 ppb and above the current standard of 75 ppb. Further information about ozone measurements is provided in the long version of this report, available on the EQAC website.

Since the region's design value is above the 2008 ozone standard, the Metropolitan Washington Air Quality Committee Technical Advisory Committee is preparing a Reasonable Further Progress plan in preparation for the possibility that the region does not meet the 2015 attainment deadline for the 2008 standard. In July 2014, DEQ was to have submitted a SIP revision supplying the 2011 base year inventory to EPA, as required by the CAA.

Fine Particulate Matter

The National Capital Region has to meet goals for fine particulate matter, called PM_{2.5}, equal to an annual standard of 15 ug/m³ for 1997 and 12 ug/m³ for 2012 and a 24 hour standard of 65 ug/m³ for 1997 and 25 ug/m³ for 2012. Fine particulate air monitoring has shown improvements over the past several years. Additional improvements are expected due to the installation of upwind control devices.

In May 2013, the Metropolitan Washington Air Quality Committee approved a Redesignation Request and Maintenance Plan for PM_{2.5}. The commonwealth submitted the request and maintenance plan to EPA Region 3 in June 2013. The area will officially remain a nonattainment area for the 1997 PM_{2.5} NAAQS until EPA approves the plan. The redesignation request and maintenance plan are needed to ensure that the progress the region has made in meeting and far exceeding the NAAQS is recognized with an attainment/maintenance designation.

On May 13, 2014, EPA approved the mobile budgets in the Maintenance Plan for PM_{2.5}.

Emissions from Motor Vehicles

One of the key issues related to ozone nonattainment and other air quality concerns is the use of motorized vehicles and their emissions. There is extensive use of motor vehicles in Fairfax County, including a significant number that do not pass the required emissions testing. The Virginia Department of Transportation provided information about the daily vehicle miles traveled in Fairfax County, showing that slightly less than 27 million vehicle miles were traveled daily in 2013, a slight decrease from the number for 2012.

The Fairfax County Department of Transportation provided the following information (based on the *2011 American Community Survey 1-year estimate, area: Fairfax County, with revised estimates for Fairfax County for 2012 as provided on the Survey's website and as refined for this report by the Fairfax County Department of Transportation*) for the 606,954 workers, 16 years and over, who live in Fairfax County:

- 71.6 percent drove alone to work in a car, truck or van.
- 10.2 percent of those workers commuted via carpool or vanpool.
- 9.1 percent used public transportation (excluding taxicabs).
- 1.8 percent walked to work.
- 1.6 percent used other means.
- 5.8 percent worked at home (this number may not fully represent the true number of teleworkers in Fairfax County).

There are several changes to the motor vehicle inspection and maintenance program in northern Virginia that have occurred since 2013 and are about to be implemented. The major change will be an expansion of the “Clean Screen” program whereby the cleanest vehicles, as determined by remote sensing observations, will have the option of purchasing a Clean Screen pass or getting a regular test at an emissions inspection station. It is anticipated that there will be no negative impact on the overall effectiveness of the emissions inspection program as a result of this change. Moreover, there will be an increase in the number of very high emitters identified that must retest and get repairs. Other changes include new emissions testing equipment and a faster internet-based communication system, which should improve customer convenience. There has been no adverse impact on the IM program due to state budget cuts since the program is funded through registration fees.

An additional new development for 2014 is that DEQ has partnered with the Fairfax County Department of Vehicle Services to provide \$128,000 for the retrofit of school buses with diesel particulate filters. This work will evaluate whether such retrofitted filters will operate adequately in Fairfax, considering duty schedule and climate. If the evaluation is favorable, the Department of Vehicle Services will use the grant money to install controls on eight or more buses. These controls will reduce emissions of particulate matter by approximately 90 percent, carbon monoxide by approximately 75 percent and hydrocarbons by approximately 30 percent.

The following information was provided in 2014 by the Fairfax County Department of Vehicle Services:

- DVS continues to replace retiring hybrid vehicles with new hybrids. Primarily, new Ford Fusion Hybrids are replacing 2004 Toyota Priuses. Budget constraints continue to limit the agency’s ability to expand the number of hybrids in the fleet. While DVS continues to explore a variety of alternative fuel options, none has yet emerged as a clearly preferred means of achieving county objectives.
- DVS and FCPS are undertaking a new exhaust retrofit project on a small number of school buses. Few such opportunities remain as new diesel-powered vehicles meet the stringent emissions standards that were implemented between 2007 and 2010. The current project will incorporate diesel particulate filters on approximately eight model year 2006 buses using funds available from the Virginia Department of Environmental Quality.

Diesel emergency generators serving county buildings historically have been installed with a small, dedicated fuel tank of typically 100-2,000 gallons capacity (newer ones

sometimes much larger), enough to power the building for up to a few days. Fuel has a shelf-life, however, and if a generator is not needed for several months the fuel must either be burned down (by running the generator) or receive a remediation treatment. In extreme cases it must be pumped out and discarded. For buildings with a county fuel site, DVS has begun a practice of plumbing the building emergency generator to the vehicle fuel site diesel tank. As the time comes to replace either an emergency generator tank or a vehicle fuel site tank, DVS (owner of the vehicle fuel tanks) and the Facilities Management Department (owner of the emergency generator fuel tanks) evaluate the site for the possibility of fueling the generator from the vehicle service tank. In this way, the emergency generator fuel supply is much more plentiful than it is with the original, small tank. Furthermore, since the vehicle service tanks have a relatively rapid turnover, no fuel is lost due to over-aging or to an artificial fuel turnover through otherwise unnecessary use of the generator.

Alternatives to Use of Motor Vehicles

Fairfax County's bicycle program was established by the Board of Supervisors in late 2006 and the responsibilities for program implementation were assigned to the Department of Transportation. Please see the Land Use and Transportation section of this summary report, as well as the Land Use and Transportation chapter of the detailed report, for information about these efforts. Efforts to make alternative transportation modes (biking and walking) safer and more attractive are critically important to addressing the air quality issues in the Washington metropolitan area and should be commended. For example, these types of initiatives can serve to reduce the county's status as being in nonattainment for ozone.

Public Agency Responsibilities

Although compliance with National Ambient Air Quality Standards and resulting air quality management responsibilities is a function of federal law, in Fairfax County and in other major metropolitan areas in Virginia, these responsibilities have been split between the Commonwealth of Virginia and the regional lead planning organization as defined by Section 174 of the Clean Air Act. Fairfax County holds a seat on, and the county staff is required to support, the lead planning organization for the metropolitan Washington area, the Metropolitan Washington Air Quality Committee. Members of MWAQC and all lead planning organizations are appointed by the governors of affected jurisdictions to represent areas included in air quality planning requirements. MWAQC works with state departments of transportation and transit providers in identifying transportation needs and priorities. The Transportation Planning Board makes transportation investment decisions for the metropolitan area and, by default, for the individual regions encompassed within MWAQC.

MWAQC FY 2015 Work Program

MWAQC and the states will continue to work towards meeting the 2008 ozone NAAQS by 2015. Control measures will be evaluated on their ability to cost-effectively reduce

ozone precursors NO_x and VOC. For control programs that may provide co-benefits by reducing SO₂ or PM_{2.5} emissions, those reductions may also be quantified. The core work program will also provide technical support for local government air quality initiatives. Coordinating air quality planning with state and local Clean Energy programs will continue to be a focus.

Stewardship Opportunities

Residents of Fairfax County have many opportunities to contribute to improvements in air quality. While some of the Metropolitan Washington area ozone problem originates outside of the area and is beyond the control of Virginia, Maryland and the District of Columbia, there are many aspects of our daily lives that can affect the quality of our air. A significant contributor to air quality issues is vehicle miles traveled. As discussed above, Virginians drive many millions of miles each year. Reducing the amount of driving, as well as the use of other combustion devices, especially during times where ground-level ozone is of concern (e.g., on hot days with lots of sun and little or no wind), can help to improve air quality. Examples of actions that can be taken include: carpooling; taking mass transit; reducing or postponing lawn-mowing; paving and outdoor painting; limiting vehicle idling; bringing a lunch to work; avoiding drive-thru windows; and refueling after dark.

The following are tips provided on the Clean Air Partners website (www.cleanairpartners.net):

Small Changes Make A Big Difference

Begin the day right. Check [today's air quality forecast](#) and modify your plans if unhealthy air quality is predicted. Protect yourself and others in your care, by taking the appropriate actions. Making small changes in your lifestyle at home, at work, and on the road can make a big difference.

At Home:

- *Postpone mowing and trimming or use electric garden equipment.*
- *Postpone painting or use water-based paint instead of oil-based paint.*
- *Replace your charcoal grill with a propane gas grill.*
- *Choose ENERGY STAR™ appliances and lighting.*
- *Cut back on heating and air conditioning when you can and turn off lights and appliances when not in use.*
- *Clean heating filters each month.*

At Work:

Employers have a unique opportunity to make a difference. They can promote programs that help employees make positive lifestyle changes. For example, employers can encourage staff to use public transportation or carpool. Employers also can give

employees the option of working from home. Encourage employees to sign up for [AirAlerts](http://www.cleanairpartners.net/airalert.cfm), a free service that delivers air quality information straight to their inbox <http://www.cleanairpartners.net/airalert.cfm>.

On the Road:

- *Keep driving to a minimum.*
- *Fill up your gas tank during evening hours. Avoid spilling gas and “topping off” the tank. Replace gas tank cap tightly.*
- *Have your car tuned regularly by replacing the oil and air filter, and keep tires properly inflated and aligned.*
- *Carpool or use public transportation when possible.*
- *Combine your errands into one trip.*
- *Avoid revving or idling your engine.*
- *Avoid long drive-through lines; instead, park your car and go in.*
- *Looking for a new vehicle? Consider purchasing a fuel-efficient model or a hybrid that runs on an electric motor and gasoline engine.*

Comments

1. EQAC performed extensive follow up with DEQ and others about Fairfax County’s plans to cease the operation of the four ozone air quality monitors and has expressed concerns about the elimination of those ozone monitors. In April 2010, EQAC provided a recommendation that the Fairfax County Board of Supervisors provide comments to DEQ regarding its Annual Air Monitoring Network review. Specifically, EQAC recommended that the Board of Supervisors request that DEQ include one or more of the existing Fairfax County ozone monitors in its future monitoring plans. Given the historically higher level of ozone concentrations at the Mount Vernon station, as compared to the other county-run stations, EQAC recommended that the Board of Supervisors request that DEQ include the Mount Vernon station in the regional monitoring plans. The board referred this issue to its Legislative Committee, which discussed the matter in September 2010; EQAC’s recommendation was not provided to DEQ. EQAC plans to continue to follow this issue over the course of the next several years as additional data become available. The reader is referred to previous EQAC reports (for example, in the 2013 ARE) for further information related to its position and efforts related to the air quality monitoring stations.
2. EQAC appreciates that Health Department staff from the Division of Environmental Health will continue to perform limited air quality planning duties. This includes participation in and attendance at Metropolitan Washington Council of Governments’ Air Quality Committee meetings and meetings of the Technical Advisory Committee and subcommittees. In addition, Health Department staff will: collaborate with other local, regional and national air quality organizations, such as Clean Air Partners; provide support to address board matters related to air quality and the environment; coordinate with other county agencies on efforts to reduce air pollution; serve on

county groups and committees such as Environmental Coordinating Committee and Environmental Improvement Program Action Group; perform legislative reviews; and participate in outreach events and encourage county residents and others to take voluntary actions to improve air quality.

3. EQAC supports the efforts of Fairfax County, VDOT, and the Commonwealth Transportation Board to provide funding to programs that further the availability and use of non-motorized transportation alternatives for Fairfax County. This includes the efforts by the Fairfax County Board of Supervisors, which has directed FCDOT to lead the effort to improve bicycle and pedestrian safety and mobility, including constructing bicycle and pedestrian improvements in high-priority areas of Fairfax County. Through FY 2020, the Board has designated over \$313 million in federal, state and county funding to construct high-priority bicycle and pedestrian improvement projects throughout the county. These include projects on major roadways, in activity centers, providing access to Metro stations and completing neighborhood missing links. From FY 2008 through FY 2014, the county has completed construction on 108 sites/segments, nine are under construction and another 63 are under design. Further, efforts by VDOT to dedicate two percent of its road paving funds to adding shoulders on Northern Virginia roadways at locations that will improve bicycle safety and travel are appreciated.

Recommendations

None.

IV. Water Resources

Background

Water resources include streams, ponds, lakes and groundwater. These resources serve as sources of drinking water, recreation, stormwater conveyance and habitat for numerous organisms. Water quality can be significantly impacted by land disturbances and surface runoff. Over the past decade, Fairfax County has demonstrated a strong commitment to restore and protect its water resources through a variety of management efforts and public outreach initiatives. Unless water resources are managed properly, increasing demands put on watersheds, such as rapid development, can create many problems. For an overview of water resources concepts and a discussion regarding impacts of point and nonpoint sources of pollution and stormwater runoff volumes on the ecological health of our water resources, please see the longer Water Resources chapter in the electronic version of this report. This summary section instead focuses on recent activities, stewardship opportunities and issues of note, and it ends with discussions of several issues of note and ongoing concerns, followed by one comment and two recommendations. For a broader discussion and some photographs of healthy and impaired streams see the on-line 2014 report at <http://www.fairfaxcounty.gov/dpz/eqac/report/>.

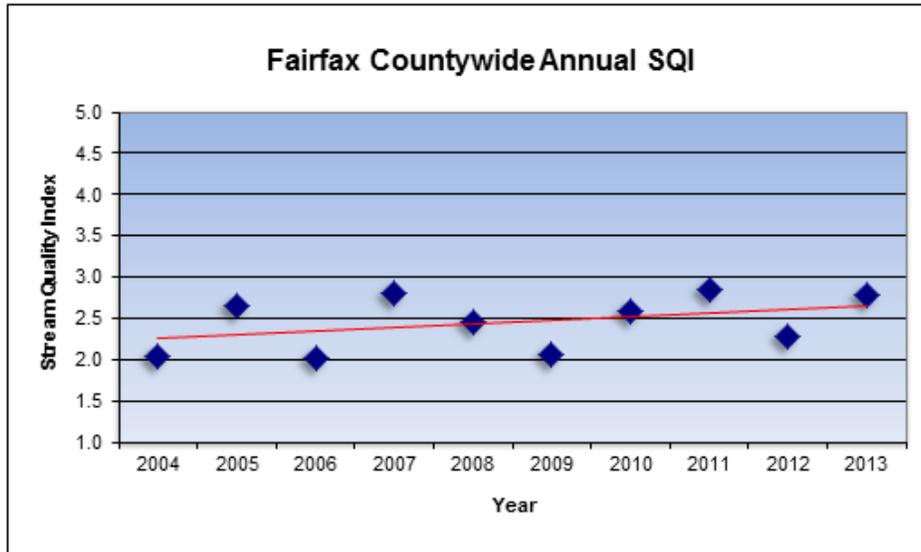
Recent Activities

Monitoring of Water Resources

- The Fairfax County Department of Public Works and Environmental Services, Fairfax County Park Authority, Metropolitan Washington Council of Governments, U. S. Geological Survey, U.S. Environmental Protection Agency, Virginia Department of Environmental Quality, local water treatment plants and other organizations continue to regularly conduct water quality monitoring and testing. The Northern Virginia Soil and Water Conservation District also incorporates water quality monitoring into its volunteer stewardship activities. For an overview of monitoring see the 2013 Fairfax Stormwater Status Report <http://www.fairfaxcounty.gov/dpwes/publications/stormwater/2013-stormwater-status-report.pdf> or the detailed version of this chapter, available on-line at www.fairfaxcounty.gov/eqac/report.

A total of 53 sites were sampled in 2013: the 40 sites randomly selected in Fairfax County plus 11 Piedmont reference locations in Prince William National Forest Park and two Coastal Plain reference sites in the Kane Creek watershed of Fairfax County. Of the 40 sites selected, all were sampled for macroinvertebrates and 16 were sampled for fish. (Only those sites with a drainage area greater than 300 acres are sampled for fish; headwater streams have few fish.) Results from the 40 randomly selected sites suggest that approximately 50 percent of the county's waterways are in "Poor" to "Very Poor" condition based on a macroinvertebrate sampling and 50 percent are in "Poor" to "Very Poor" based on fish sampling. This is an increase in the biological ratings compared to previous years. This may be a result of the random site selection (it is possible for a group of lower quality sites to be chosen in some years). **Over the past 10 years, a small increase in the benthic Index of**

Biological Integrity scores has emerged. As future sampling results are added, a trend in biological integrity should begin to emerge.



Source: 2013 Fairfax County Stormwater Status Report, June 2014

In 2013, 31 percent of Fairfax County’s bacteria monitoring locations were consistently below VDEQ’s standard of 235 units per 100 ml of water. Fairfax County staff concurs with officials from VDEQ and the Virginia Department of Health, who caution that it is impossible to guarantee that any natural body of water is free of risk from disease-causing organisms or injury.

Dry and Wet Weather Screening

- In 2013, the county selected 108 outfalls in its Municipal Separate Storm Sewer System for dry weather screening and recorded physical parameters at each outfall. Water was found to be flowing at 58 of the outfalls and was tested for a range of pollutants (ammonia, conductivity, surfactants, fluoride, pH, phenol, copper and temperature) using field test kits. Of the outfalls tested, 10 required follow-up investigations because they exceeded the allowable limit for at least one pollutant. Of the 10 sites that required a retest, five continued to exceed the screening criteria. Further testing was conducted in an attempt to track down the source.

Watershed Planning

- All watershed management plans have been completed and approved by the Board of Supervisors. Some implementation of these plans is already under way with riparian buffer restoration, stream channel stabilization and restoration and stormwater retrofits.
- Partners involved in implementation are often (but not limited to) the Fairfax County Park Authority, Fairfax County Public Schools (see the detailed version of this chapter for a chart

with school sites listed), Northern Virginia Soil and Water Conservation District, Earth Sangha and the Virginia Department of Forestry.

- The Regional Stormwater Management Plan is being replaced as countywide watershed management plans are being implemented.
- In 2013, the county and its partners continued to implement stormwater management-related capital projects, including more than eight stormwater management facility retrofits, five low impact development projects and five stream restoration and stream stabilization projects.

Gunston Cove Study

Data from Gunston Cove and the nearby Potomac River, collected since 1984, provide valuable information regarding long-term trends; this information will aid in the continued management of the watershed and point source inputs.

- First, phytoplankton algae populations in Gunston Cove have shown a clear pattern of decline since 1989.
- Accompanying this decline have been more normal levels of pH and dissolved oxygen, increased water clarity and a virtual cessation of cyanobacteria blooms such as *Microcystis*.
- The increased water clarity has brought the rebound of submerged aquatic vegetation, which provides increased habitat value for fish and fish food organisms. The SAV also filters nutrients and sediments and itself will inhibit the overgrowth of phytoplankton algae.
- This trend is undoubtedly the result of phosphorus removal practices at the Noman M. Cole, Jr. Pollution Control Plant, which were initiated in the late 1970s. A lag period of 10-15 years between phosphorus control and the later phytoplankton decline has been observed in many freshwater systems, resulting at least partially from sediment loading to the water column, which can continue for a number of years.
- Another trend of significance to managers is changes in the relative abundance of fish species. Overall, the fish assemblage in Gunston Cove is dynamic and supports a diversity of commercial and recreational fishing activities.
- Gunston Cove is now an internationally recognized case study for ecosystem recovery due to the actions that were taken and the subsequent monitoring to validate the response.

Fairfax County Total Maximum Daily Loads

Under the Clean Water Act, states are required to monitor water quality and assess compliance with water quality standards every two years. Water quality standards designate uses for waters and define the water quality needed to support each use. There are six designated uses for surface waters in Virginia: aquatic life; fish consumption; public water supplies (where applicable); shellfish consumption; swimming; and wildlife. Several subcategories of the aquatic

life use have been adopted for the Chesapeake Bay and its tidal tributaries. If a water body contains more pollutants than allowed by water quality standards, it will not support one or more of its designated uses. Such waters have “impaired” water quality and are listed on Virginia’s 303(d) list as required under the Clean Water Act. If monitoring data indicate that a water body does not meet water quality standards, the water body is listed as impaired and a Total Maximum Daily Load must be developed. A Total Maximum Daily Load is a watershed-specific plan for bringing an impaired water body into compliance with the Clean Water Act goals.

To date, the following TMDLs have been established in Fairfax County and have assigned reductions to the county’s MS4:

Bacteria (Fecal Coliform and/or E. coli):

- Accotink Creek.
- Four Mile Run.
- Bull Run (includes Cub, Johnny Moore and Little Rocky Runs).
- Popes Head Creek.
- Difficult Run.
- Hunting Creek (includes Cameron Run and Holmes Run).
- Sugarland Run.
- Mine Run.
- Pimmit Run.

Sediment (Benthic Impairment):

- Bull Run (includes Cub, Johnny Moore and Little Rocky Runs).
- Popes Head Creek.
- Difficult Run.

PCBs: Tidal Potomac (includes Accotink Creek, Belmont Bay, Dogue Creek, Four Mile Run, Gunston Cove, Hunting Creek, Little Hunting Creek, Occoquan River and Pohick Creek).

Water Quality Assessments are performed by the Virginia Department of Environmental Quality and are available at:

<http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/WaterQualityAssessments.aspx>.

- Accotink Creek TMDL
 - While sediment was identified as the pollutant of concern that is causing the benthic impairment, EPA used flow as a surrogate for sediment in establishing the TMDL. The TMDL called for a 48.4 percent overall reduction in in-stream flows in Accotink Creek. Utilizing a flow approach to the TMDL would not stabilize or reverse the evolution that has already occurred in Accotink Creek. This evolution has taken place in response to increased urbanization and development in the watershed, and flow reduction alone will not reverse its impacts or address the impairment that originally triggered development of the TMDL. Stream restoration is also required in order to stabilize the eroded banks,

reconnect the stream to its floodplain, reduce in-stream erosion and restore habitat. In July 2012, the county and the commonwealth challenged the flow TMDL in U.S. District Court. The court issued its decision in January 2013 that EPA is authorized to regulate pollutants using TMDLs, and that sediment is a pollutant, but flow is not. The flow TMDL was remanded to EPA for reconsideration. It is important to note that the court's decision applies only to the use of non-pollutants (such as flow) as surrogates for pollutants (such as sediment) in TMDLs. It is not a blanket prohibition on the regulation of stormwater.

- In March 2013, EPA decided not to appeal the court's decision and asked the commonwealth to develop a replacement TMDL. A schedule for development of the new TMDL has been established.

Chesapeake Bay TMDL

EPA established the Chesapeake Bay TMDL in December 2010. In order to provide reasonable assurance that the Chesapeake Bay TMDL can be achieved, EPA required states and the District of Columbia to develop Watershed Implementation Plans that document how each jurisdiction will partner with federal and local governments to achieve and maintain water quality standards. Phase I of the Virginia WIP was approved by EPA in December 2010 and established target loads by sector and watershed. The final Phase II WIP was submitted to EPA on March 30, 2012 and does not include explicit allocations to local communities due to issues identified with using the Chesapeake Bay Watershed Model at the local scale. The WIP does include local strategies aggregated at the state scale and organized by source sector (agriculture, urban/suburban, on-site wastewater, forest lands and resource extraction). Implementation of the urban/suburban strategies will take place through permits in MS4 communities including Fairfax County.

Information on the Chesapeake Bay TMDL is available on EPA's website at: <http://www.epa.gov/reg3wapd/tmdl/ChesapeakeBay/index.html>.

Stormwater Management Facilities and Infrastructure

- In 2013, Fairfax County inspected 1,459 of the 1,668 county-owned stormwater management facilities and 736 of the 3,716 privately maintained stormwater facilities.
- In 2013, the Maintenance and Stormwater Management Division of the Department of Public Works and Environmental Services continued its maintenance program for county stormwater management facilities. Maintenance can include repairs to stormwater management facility structures and removal of sediment. During 2013, the county cleaned and/or mowed 1,364 dam embankments, including 52 regional ponds that were maintained four times each during the calendar year. Cleaning involves removing trash, sediment and debris from the trash rack, control structure and all inflow channels leading to the control structure. At each stormwater management facility, deposited sediment is removed from the trickle ditch upstream from the control structure and deposited offsite. The cleaning helps keep the facility functioning properly by conveying water and performing the BMP function as designed. The county completed 2,760 work orders, including: un-blocking stormwater

management ponds and pipes to avoid flooding or damaging infrastructure; channel and pond cleaning; mowing; weeding; planting; outfall repair; stream restoration and bank stabilization; trail maintenance; graffiti removal; snow removal; sign repairs/installation; and responses to complaints

- The 2013 Fairfax County Stormwater Status Report provides updated information on the number and types of public and private stormwater management facilities in the county as well as detailed information about the types of projects being undertaken to improve and protect water quality.
- In 2013, the Maintenance and Stormwater Management Division continued implementation of its infrastructure inspection and rehabilitation program. Staff inspected over 13,000 pipe segments and over 12,000 storm structures with video and photo documentation. Under the rehabilitation program, more than 950,400 linear feet (47 miles) of pipe were videoed, documenting the existing structural and service conditions of the interior of the storm system. These efforts represent 2.3 million linear feet, or one-third of the storm drainage network, being screened through walking and/or video documentation for obvious deficiencies. In addition, more than 19,387 linear feet of storm pipe in the county's inventory were rehabilitated or repaired through replacement.

Erosion and Sediment Control

- In 2013, a total of 856 E&S plans for projects that would disturb a land area of 2,500 square feet or more were submitted and approved for construction. Written reports listing these individual sites were provided on a monthly basis to Virginia Department of Conservation and Recreation.
- In 2013, 23,619 E&S inspections were performed through the county's Alternative Inspection Program on all sites under construction. Those E&S inspections represented 54.5 percent of the 43,305 total site inspections that were performed by Site Development and Inspection Division personnel. The site inspections total also included 2,110 projects that were inspected for purposes other than strictly E&S control (e.g., pre-construction, streets, sanitary sewer, storm sewer, and project release).
- In 2013, SDID wrote 514 E&S control reports, which identify the E&S control deficiencies developers must correct within five days. Failure to comply within the specified time frame can result in issuance of a violation to the developer. SDID issued 68 violations in 2013 and 58 of those were later cleared. The remaining 10 violations are extended until the required corrections are made or court action is initiated. SDID held 202 escrows for either landscaping or stabilization issues
- The Land Disturbance and Post Occupancy Branch of DPWES-Land Development Services investigates complaints alleging violations of the Fairfax County's Erosion and Sediment Control Ordinance (Chapter 104). The branch also investigates complaints alleging violations of the county's Chesapeake Bay Preservation Ordinance (Chapter 118). In 2013, the branch received 250 total complaints. In most instances there was either no violation or

there was timely compliance if a violation was cited. The branch issued 23 Resource Protection Area violation notices and 44 land disturbance violation notices. The branch undertook four criminal proceedings to ensure compliance, with two proceedings resulting in fines issued by the court.

Illicit Discharges

In 2013, the Fire and Rescue Department's Hazardous Materials Investigative Services section received 579 complaints involving hazardous materials. The actual spill, leak or release of hazardous materials into the environment occurred in 283 of these cases. Of these 283 releases, 140 involved petroleum based products. There were 21 hydraulic oil spills/releases (mostly from trash trucks), 18 gasoline releases, 30 fuel oil or home heating oil releases and 37 diesel fuel releases. The remainder consisted of a variety of materials including, paint, antifreeze, cleaners, various gases, various chemicals and mercury. There were 33 incidents where the release of hazardous materials impacted storm drains or surface waters. The section tracked 10 sites for both short and long term remediation activities.

Sewage Treatment Facilities

- Upper Occoquan Service Authority

The following information has been provided by UOSA:

UOSA operates an advanced water reclamation facility in Centerville, Virginia and serves the western portions of Fairfax and Prince William counties, as well as the cities of Manassas and Manassas Park. The water reclamation plant includes primary-secondary treatment followed by advanced waste water treatment processes: chemical clarification; two-stage recarbonation with intermediate settling; multimedia filtration; granular activated carbon adsorption; chlorination for disinfection; and dechlorination. The plant's rated capacity is 54 million gallons per day. In 2013, the plant treated on average 32.4 mgd of wastewater.

- Noman M. Cole Jr. Pollution Control Plant

The NMPCP, located in Lorton, is a 67 million gallon per day advanced wastewater treatment facility that incorporates preliminary, primary, secondary and tertiary treatment processes to remove pollutants from wastewater. The original plant, which began operation in 1970 at a treatment capacity of 18 million gallons a day, has undergone three capacity and process upgrades to meet more stringent water quality standards. After treatment, the wastewater is discharged into Pohick Creek, a tributary of Gunston Cove and the Potomac River. The plant operates under a Virginia Pollutant Discharge Elimination System permit. The plant is required to meet effluent discharge quality limits established by the Virginia Department of Environmental Quality. In 2013, the plant treated on average 37.2 mgd/day. In 2013, 58,044 wet tons of sludge were generated and incinerated. Inert ash from the process was disposed of in a monofill at the county's I-95 campus.

On-site Sewage Disposal Systems

- An estimated 21,527 homes and business are served by on-site sewage disposal systems in Fairfax County. Over 700 of these systems are alternative sewage disposal systems, which require regulating the operation and maintenance on the part of the home owner. The county's Health Department reported that in 2013, 129 New Sewage Disposal Permits were issued for single family residences. There were 124 new sewage disposal systems installed—69 (56 percent) were alternative type systems and 55 (44 percent) were conventional systems. There were 885 sewage disposal system repair permits issued; repairs ranged from total replacement of the system to minor repairs such as broken piping or pump replacement. There were 4,405 septic tank pumps outs.

Sanitary Sewer System Maintenance

The Sanitary Sewer Infiltration Abatement Program conducts wastewater flow measurements and analysis to identify areas of the wastewater collection system with excessive inflow/infiltration problems; closed circuit television is used to inspect trunk sewer mains in an effort to specifically identify defective sewer lines for repair and rehabilitation.

- In 2013, 232.4 miles of old sewer lines and 8.9 miles of new sewer lines were inspected using closed circuit television, resulting in the identification of sanitary sewer lines and manholes needing repair and rehabilitation. In 2013, 138,021 linear feet of gravity sewers and 2,350 linear feet of six-inch force mains were rehabilitated using cured-in-place pipe repair. Additionally, 17 manholes were rehabilitated. Over the past 10 years, 213.6 miles of sewer lines have been rehabilitated.
- The Sanitary Sewer Extension and Improvement Program addresses pollution abatement and public health considerations and provides sanitary sewer services to areas identified by the Department of Health as having non-repairable or malfunctioning septic systems. In 2013, two Extension and Improvement projects were completed consisting of 7,175 linear feet of eight inch sanitary sewer and sanitary sewer connections for 78 existing houses.

Drinking Water

- Fairfax Water withdraws water from both the Potomac River near the James Corbalis Water Treatment Plant and from the Occoquan Reservoir at the Frederick Griffith Water Treatment Plant. Fairfax Water provides drinking water to most Fairfax County residents. Fairfax Water provided 52,637 billion gallons of drinking water in 2013.
- Federal regulations require water suppliers to provide annual reports on the quality of the drinking water to their customers through the Consumer Confidence Report Rule. The 2013 Water Quality Report is available for review on the Fairfax Water website at <http://www.fairfaxwater.org/water/water.htm>.
- Fairfax Water has been testing for lead and copper in customer tap samples in accordance with EPA's lead and copper rule since 1992 and has consistently tested below the Action

Level established in that rule. In the most recent tests in 2008, the 90th percentile value for lead was 0.77 part per billion compared to the EPA action level of 15 ppb. For copper, the 90th percentile value in 2008 was 0.064 part per million compared to the EPA action level of 1.3 ppm. Additional information on these programs and more can be found at:

www.fairfaxwater.org. Additional information on other monitoring programs can also be found in the detailed version of the Water Quality Chapter of this report, available for review at www.fairfaxcounty.gov/eqac/report.

- Every five years since 1990, the Interstate Commission on the Potomac River Basin's Section for Cooperative Water Supply Operations on the Potomac has conducted a 20-year forecast of demand and resource availability on behalf of the three major water utilities in the Washington D.C. Metropolitan Area (including Fairfax Water). The 2010 study had two parts to it. Part one of the study, "Demand and Resource Availability Forecast for Year 2040," contains the most recent demand forecast of future water use, analysis of current resources and evaluation of resource alternatives. The main focus of part one is to assess the ability of the region's water resources to meet the water supply needs of the Washington metropolitan area population as it continues to increase. Part two of this study addresses the potential impacts of climate change. Different possible climate change scenarios for the region were evaluated using climate change models and the results were incorporated into the water utility planning model to better help forecast future demands and the constraints that need to be overcome to meet the demands. Both parts one and two are available as follows:

Part One: <http://www.mwcog.org/uploads/committee-documents/ZV5YWVxX20100907131139.pdf>.

Part Two: <http://www.potomacriver.org/publicationspdf/ICPRB13-07.pdf>

ICPRB has initiated work on the 2015 study, "Demand and Resource Availability Forecast for Year 2040," which will include a range of updates such as the Metropolitan Washington Council of Governments' 8.2 demographic forecasts and a sensitivity analysis based on the information learned from the climate change results in part two of the 2010 study.

- There are approximately 13,340 single family residences and businesses in Fairfax County that are served by individual well water supplies. The Health Department permits and inspects all new well construction, existing well repairs and well abandonments. In 2013, there were 149 new well permits, 38 well repairs and 162 Water Well Abandonments issued. There were 34 Geothermal Well Permits issued.

Stewardship

There are numerous actions that county residents can and should take to support water quality protection.

- Medicines, paints and other toxics should NOT be flushed down toilets and should NOT be dumped down storm drains. Instead, they should be taken to one of the county's household hazardous materials collection sites. For a list of common household hazardous materials and how to dispose of them, go to <http://www.fairfaxcounty.gov/dpwes/trash/disphhw.htm>.

- Septic systems must be pumped out every five years—it's the law! Residents with questions or with problems with their septic systems should call the Fairfax County Health Department at 703-246-2201, TTY 711.
- Residents are encouraged to get soil tests for their yards before fertilizing and then to apply fertilizers and pesticides responsibly. Grass should not be cut to the edge of a stream or pond; instead, a buffer should be left to filter pollutants and provide wildlife habitat.
- The Northern Virginia Soil and Water Conservation District can advise homeowners on problems with ponds, eroding streams, drainage, problem soils and other natural resource concerns. More information about managing land for a healthier watershed is available from the NVSWCD publications "You and Your Land, a Homeowner's Guide for the Potomac River Watershed" (<http://www.fairfaxcounty.gov/nvswcd/youyourland/>) and the "Water Quality Stewardship Guide" (<http://www.fairfaxcounty.gov/nvswcd/waterqualitybk.htm>).
- Advice regarding drainage and erosion problems in yards can be provided by the technical staff of the Northern Virginia Soil and Water Conservation District. NVSWCD can assess the problems and advise on possible solutions. Interested parties can send an e-mail to NVSWCD at <https://www.fairfaxcounty.gov/contact/mailform.aspx?ref=9990> or call 703-324-1460.
- There are numerous opportunities throughout the year to participate in stream cleanups, storm drain labeling, volunteer water quality monitoring and tree planting projects. Interested parties can send an e-mail to NVSWCD at <https://www.fairfaxcounty.gov/contact/mailform.aspx?ref=9990> or call 703-324-1460.
- EQAC also commends the efforts of the Alice Ferguson Foundation and encourages residents, employers and employees in Fairfax County to participate in these initiatives. Visit the foundation's website at www.Fergusonfoundation.org for further information.
- Sediment runoff from construction sites can be reported to Fairfax County's Code Enforcement Division at 703-324-1937, TTY 711; e-mail reports can also be filed at <https://www.fairfaxcounty.gov/contact/mailform.aspx?ref=70003>.
- Improper disposal of motor oil, paint or other materials into streams or down storm drains should be reported through a phone call to 911. This is particularly important if the substance being dumped can be identified as motor oil or another toxic substance but also applies to any other substance; assumptions regarding the contents of the materials should not be made. Callers to 911 should be prepared to provide specific information regarding the location and nature of the incident. If the person dumping materials into the stream or storm drain has a vehicle, the tag number should be recorded.
- Storm drains are for stormwater only, NOT motor oil, paint or even grass clippings.
- If dumping is not witnessed but is instead suspected, and if no lives or property are in immediate danger, the suspected incident can be reported to the Hazardous Materials and

Investigative Services Section of the Fire and Rescue Department at 703-246-4386, TTY 711. If it is unclear as to whether or not there may be a danger to life or property, 911 should be called.

- A more comprehensive table addressing how to report environmental crimes is provided immediately following the Scorecard section of this report.

Consideration of new Stormwater Management Regulations (4VAC50-60)

- As required by of the Code of Virginia, beginning July 1, 2014, local governments became the Virginia Stormwater Management Program authorities. Prior to this date, this responsibility belonged to the Virginia Department of Conservation and Recreation. The commonwealth will maintain oversight of local programs to ensure that all applicable state regulations are applied and enforced. This oversight responsibility will now lie with the Virginia Department of Environmental Quality. Any town that does not adopt its own stormwater program will be subject to the program of the county within which that town is located.

The Stormwater Management Ordinance of Fairfax County applies to all unincorporated areas of the county and the town of Clifton. Any cities or towns that have their own MS4 permit will also have their own ordinance and stormwater management program. The VPDES (formerly known as the VSMP) General Permit for Discharges of Stormwater from Construction Activities will continue to be the vehicle by which land disturbing activities are monitored for compliance with the provisions of the Virginia Stormwater Management Act and associated regulations. Beginning July 1, 2014, the county now administers the state permit program on behalf of the Department of Environmental Quality. Also, the Virginia Soil and Water Conservation Board approved new stormwater management regulations. Compliance with these new rules is required by the 2014 VPDES permit and the localities' Stormwater Management Ordinances, both of which were to have taken effect on July 1, 2014. The Board of Supervisors approved a new Chapter 124, Stormwater Management Ordinance, as well as related Code and Public Facilities Amendments on January 28, 2014.

Lifting the ban on Uranium Mining

There has been in place in Virginia a ban on uranium mining statewide since 1982. However there have been recent legislative and/or gubernatorial efforts under way to lift the moratorium.

EQAC received presentations on this issue from Dan Holmes, Director of State Policy with the Piedmont Environmental Council, and Stephen Walz, the then-Director of Energy Programs at the Northern Virginia Regional Commission and formerly the Director of the Virginia Department of Mines, Minerals and Energy. An area of focus of these presentations were reports on uranium mining in Virginia that had been prepared by the National Academy of Sciences, Fairfax Water, Chmura Analytics, Virginia Beach and RTI Socioeconomic. EQAC has had the opportunity to review these reports.

The Chmura study indicates that the adverse economic impact under the worst case scenario is significantly greater than corresponding positive impact in the best case scenario. It appears from these studies that future substantive failure of a uranium mining site would require

significant economic support from all the residents of Virginia for remediation and would potentially result in contaminated water resources for very significant periods of time.

At this time, the only uranium deposits that appear to be potentially economically viable for mining are in Pittsylvania County, where mining would have no impact on Fairfax County. The concern exists, though, that there are other uranium occurrences in Virginia, and that past uranium mining lease agreements were established in Fauquier County, within the Occoquan watershed.

The Occoquan Reservoir is one of the county's primary sources of drinking water; and the quality of this drinking water source can be adversely affected by activities occurring within its watershed. There are serious concerns about the lifting of the moratorium in light of numerous and substantial questions and concerns regarding the potential for adverse environmental impacts to Virginia and the Occoquan Reservoir if uranium was to be mined or milled within the Occoquan watershed.

It is EQAC's view that it would be premature to lift the moratorium on uranium mining in Virginia or draft regulations pertaining to uranium mining without first addressing concerns identified by the National Academy of Sciences in its report.

Notable and Ongoing Issues

1. EQAC commends the county for developing and adopting amendments to the Public Facilities Manual's provision for adequate drainage that require analysis of adequacy of outfalls during the construction phase. This is another enforcement tool that will protect streams during the construction phase. However, EQAC cannot over-emphasize the importance and need for increased monitoring of stormwater management controls during the construction phase and for enforcement action to ensure inadequate controls are corrected during construction.
2. EQAC continues to support the full funding and implementation of the comprehensive countywide watershed management program. EQAC strongly endorses the ongoing work of county staff on the watershed planning and public outreach efforts and the comprehensive stream monitoring program. EQAC continues to support continued assessments of watersheds and development of a stream protection and restoration program that has adequate sustainable funding. EQAC continues to stress that equal importance should be devoted to environmental protection, restoration and monitoring as compared to infrastructure improvement and maintenance.
3. EQAC commends the county for its existing stream protection requirements for perennial streams. EQAC thanks the Board of Supervisors for its efforts to protect intermittent and headwater streams by the establishment of protective buffers. While the end result of the inquiry was NOT to move forward, the process did heighten awareness of the importance of intermittent streams.

4. EQAC is pleased to note the MS4 requirement to develop a long-term watershed monitoring program to verify the effectiveness and adequacy of stormwater management goals and identify areas of water quality improvement or degradation is being implemented. While EQAC is pleased to note the long term monitoring of several sites, we also understand that a comprehensive countywide program to monitor effectiveness could be cost-prohibitive.
5. Given the anticipated increase in the number of small individual low impact development facilities that will be installed throughout the county, EQAC recognizes that the county will have an additional challenge of developing a program to track, inspect and ensure adequate maintenance of these LID facilities.
6. There has been in place in Virginia a ban on uranium mining statewide since 1982. However there are now legislative or/and gubernatorial efforts under way to lift the moratorium. At this time, the only uranium deposits that appear to be potentially economically viable for mining are in Pittsylvania County, where mining would have no impact on Fairfax County. The concern exists, though, that there are other uranium occurrences in Virginia and that past uranium mining lease agreements were established in Fauquier County, within the Occoquan watershed.

Because the Occoquan Reservoir is one of the county's primary sources of drinking water, EQAC does have concerns about the lifting of the moratorium in light of numerous and substantial questions and concerns regarding the potential for adverse environmental impacts to Virginia and the Occoquan Reservoir if uranium was to be mined or milled within the Occoquan watershed. It is EQAC's view that it would be premature to lift the moratorium on uranium mining in Virginia or to draft regulations pertaining to uranium mining without first addressing concerns identified by the National Academy of Sciences in its report.

7. EQAC is pleased to note the number of innovative and significant stream restoration projects and LID installations the county has undertaken in recent years.

Comments

EQAC commends the Board of Supervisors for its actions of the past few years, initially authorizing one penny of the real estate tax to be dedicated to the stormwater management program in FY 2006 and establishing a Stormwater Service District in FY 2010 that is currently funded at two and one quarter pennies of the real estate tax. Stormwater funding has increased from the original amount of \$17.9 million for FY 2006 to \$40.2 million for FY 2014. In FY 2010, however, this amount decreased to about \$10.3 million due to the creation and structuring of the Service District as a funding mechanism halfway through the fiscal year.

The Board of Supervisors' adoption of the FY 2015 Stormwater Service District tax rate of 2.25 cents (and adoption of the five-year plan with a quarter cent increase each year to ramp up to meet the ramping up bay TMDL mandates) has allowed Stormwater Management to increase stormwater infrastructure replacement, create a more comprehensive low impact development maintenance program and rehabilitate a number of older stormwater management dams as well as other critical components. Much of the stormwater infrastructure in Fairfax County is reaching the end of its life cycle, and as the system ages it will be critical to maintain adequate

inspection and rehabilitation programs to avoid infrastructure failures and ensure the functionality of stormwater treatment systems. It is also critical for Stormwater Management to implement cost effective solutions such as trenchless pipe rehabilitation technologies, naturalized stormwater management facilities and partnerships with other county agencies such as Fairfax County Public Schools and the Fairfax County Park Authority to help protect and improve local streams.

The county's existing stormwater conveyance infrastructure includes over 1,600 miles of pipes, man-made ditches, channels and swales. This infrastructure conveys stormwater to over 850 miles of perennial streams and about 400 miles of non-perennial streams in the county. The majority of the stormwater control facilities and pipes were constructed 35 or more years ago. Prior to the board providing a dedicated penny to stormwater in FY 2006, there had never been consistent funding to proactively inspect or reinvest in these stormwater systems. When the video inspections of the inside of pipes were first undertaken in FY 2007, over five percent of the system was identified as being in a state of failure and another 10 percent in need of rehabilitation. With the recently adopted Stormwater Service District tax rate, it is estimated that the reinvestment cycle for stormwater infrastructure has been reduced from well over 1,000 years to less than 200 years. With the implementation of the next five-year funding plan, this should reduce this reinvestment cycle eventually to a 100 year plan.

In addition to the conveyance system, the county owns and maintains roughly 1,500 stormwater management facilities, ranging from large flood control lakes to LID techniques such as small infiltration swales, tree box filters and rain gardens. Again, prior to providing a dedicated funding source, there was not funding for reinvestment in these LID facilities.

Nineteen of the county's stormwater management facilities have dam structures that are regulated by the state. The county must provide rigorous inspection and maintenance of these 19 facilities in order to comply with state requirements. Significant upgrades to the emergency spillways have been required in some cases.

In addition to supporting infrastructure reinvestment, the capital program funds critical capital projects from the watershed management plans including: flood mitigation projects; stormwater management pond retrofits; implementation of low impact development techniques; and stream restoration projects. It is important to note that these projects are necessary to address current community needs, mitigate the environmental impacts of erosion and comply with the county's Municipal Separate Storm Sewer System MS4 permit. The benefits of these projects include: reducing property damage due to flooding and erosion; reducing excessive sediment loading caused by erosion; improving the condition of streams; and reducing nutrient and sediment loads to local streams, the Potomac River and the Chesapeake Bay.

The county must meet the federally mandated requirements of its MS4 permit. Fairfax County and Fairfax County Public Schools are combining their MS4 responsibilities into a single permit that will be administered by the county. Following development by the state, the new permit will be forwarded to the U.S. Environmental Protection Agency for approval. Recent permits that have been approved or issued for public hearing by the EPA have included aggressive requirements to retrofit significant amounts of impervious area, such as school and county buildings and parking lots, with more effective stormwater controls. We are anticipating that

these extensive additional requirements also will be included in the new MS4 permit that will be issued to Fairfax County.

It has been estimated that the annual cost to comply with current and anticipated stormwater regulatory requirements and to implement a sustainable infrastructure reinvestment program would likely be between \$80 and \$100 million per year. EQAC supports meeting these challenging requirements through a phased approach (as demonstrated in the five-year adopted plan) that builds capacity over a period of time that can be based on success and experience and should result in a more cost effective and efficient program.

Recommendation

1. EQAC recommends that Fairfax County continue to adequately fund and implement its ongoing stormwater program, which includes dam maintenance, infrastructure replacement, water resource monitoring and management, watershed restoration and educational stewardship programs. EQAC realizes the funding for the stormwater program will come entirely from funds generated through the Service District rates. EQAC also realizes that there is a need for increasing capacity within the Department of Public Works and Environmental Services to provide these services.

EQAC recommends that the Stormwater Service District rate be increased in FY 2016 by at least one-quarter penny, from a rate of 2.25 cents per \$100 assessed real estate value to 2.50 cents per \$100. EQAC understands that this increase would not fully meet stormwater management needs and therefore suggests that additional increases be continued each fiscal year until adequate funding to support the program is achieved. This would, once again, result in more funding for modest watershed improvement programs and a somewhat more realistic infrastructure replacement timeline. We realize that there will be a need for additional increases in funding for water quality projects to meet future permit conditions, and for infrastructure reinvestment, as the system is continually growing and aging.

V. Solid Waste

Background

The Fairfax County Solid Waste Management Program manages solid waste recycling, collection and disposal within the county through implementation of the county Solid Waste Management Plan and through code compliance activities. This section of the report highlights a number of the program's achievements and levels of performance.

Solid Waste Management Plan

The 20-year Solid Waste Management Plan was approved by the Board of Supervisors in 2004 and revalidated in 2010. Highlights of the plan include the following:

- A principal aspect of the SWMP is the Energy/Resource Recovery Facility, which is located at the county's I-95 Landfill Complex and owned and operated by Covanta Fairfax, Inc. After multi-year negotiations with Covanta, a new five-year Waste Disposal Agreement was awarded in April 2014. The contract allows for two additional five-year extensions and will help stabilize the cost of disposal for county residents over possibly the next 15 years. The contract's price will be about 14-24 percent below market price and reduces the county's annual commitment to Covanta. Covanta will pay the county a fee for every ton of merchant waste the company brings to the facility.
- Continued development of an energy plan concept for an inactive area of the I-95 Landfill.
- Support for improvements in ferrous and non-ferrous metals recovery from ash generated from the combustion of refuse. This improved recycling of these materials netted additional revenue to the county and reduced the ash capacity needs at the landfill.
- Increased construction/demolition/debris recycling. In FY 2013 about 39,900 tons of material was transported from the I-66 Transfer Station to a CDD recycling facility rather than to a landfill for disposal. Unrecyclable but combustible material from the CDD recycling facility was backhauled to the Energy Resource Recovery Facility for processing.
- Implementation of new waste handling areas at both disposal facilities to better dispose of cooking oil; this effort actually generates revenue for county operations.
- Expansion of hours of operations at the Household Hazardous Waste facilities to encourage residents to divert more of these contaminants from the waste stream to proper disposal.
- Reorganization of the functions of disposal, resource recovery, collections and recycling programs into the Solid Waste Management Program, which came into existence on July 1, 2013. Administrative, operational and engineering support functions were consolidated to improve environmental compliance, customer services and program efficiency.

- Continuation of in-kind and financial support of various outreach events and programs to support environmental stewardship in Fairfax County including: Springfest; Fall for Fairfax; and education programs at about 33 Fairfax County Public Schools and other community events.

Solid Waste Management Plan 2015 Update

Fairfax County is in the process of updating its Solid Waste Management Plan. This plan describes an integrated strategy for the management of trash and recyclables generated by businesses and residents in Fairfax County. The county's current 20-year plan requires an update in 2015. The revised plan will assist and guide the development of waste reduction, reuse, recycling, collection, transfer and disposal initiatives in Fairfax County from July 2015 – July 2035. It will serve as a strategic planning tool and will include goals to help the solid waste management program achieve environmental and financial sustainability.

Additional Recent activities

- The program moved a daily average of 105 tractor-trailer loads of municipal solid waste from the I-66 Transfer Station to the Energy/Resource Recovery Facility, Lorton Debris Landfill, Davis Industries, Loudoun Composting, Broad Run Recycling and other appropriate disposal and recycling locations.
- Fairfax County's Solid Waste Management Program's recycling rate for calendar year 2013 was 48 percent. While this represents a slight drop from 2012's 51 percent, it exceeds the Virginia minimum requirement of 25 percent. Since the recycling program's inception in 1988, the county has recycled over 8.5 million tons and continues to exceed the state-mandated requirement.
- In addition to its permanent collection sites at the I-66 and I-95 complexes that were opened to residents every day, the program held four remote household hazardous waste collection events in 2013. The four events collected about 46 tons of solvents, sprays, mercury and paints. HHW disposal is conducted at no cost for county residents.
- The program conducted monthly e-waste collection events for residents, with over 706 tons collected in FY 2014. The program will expand e-waste collection by offering drop-off service daily at both the I-66 Transfer Station and the I-95 Landfill Complex. Curbside collection of e-waste will be offered in the sanitary districts beginning in July 2014. In addition, staff organized nine document shredding events throughout the magisterial districts, processing almost 125 tons of documents from residents.
- Groundwater Protection Standards were originally established for the I-95 Sanitary Landfill on November 20, 2000, through an amendment to the facility permit. Groundwater impacts have been observed. A Corrective Action Monitoring Plan approved as part of the 2011 permit amendment required installation of eight additional performance and sentinel monitoring wells. County remedial actions have been effective in achieving their objective at each front. However, potential groundwater impacts continue. A Nature and Extent Study to further

define potential groundwater impacts has been submitted to the Virginia Department of Environmental Quality. Following the review of this document by VDEQ, the county will submit an Assessment of Corrective Measures. An interim corrective measure was implemented to immediately address these groundwater impacts. This has been effective at reducing the constituents of concern associated with this plume.

- The I-95 Landfill operates a large landfill gas collection system, with over 350 installed wells extracting landfill gas for energy recovery. Approximately 2,300 cubic feet per minute of this gas is distributed to a variety of energy recovery systems, including the six-megawatt Landfill Energy Systems electric generating facility and the three-mile landfill gas pipeline that provides fuel as a substitute for natural gas at the Noman M. Cole, Jr. Pollution Control Plant.
- The Energy Resource Recovery Facility combustion process reduces the processed waste to only 10 percent of its original volume and about 25 percent of its original weight. Therefore, ash disposal requires significantly less landfill space than that which is consumed by the disposal of unprocessed municipal solid waste. Incinerator ash from the Energy Resource Recovery Facility, a similar Covanta facility serving the City of Alexandria and Arlington County and from the Noman Cole Plant is disposed of at the I-95 Ash Landfill (Area Three Lined Landfill).
- The Recycling and Disposal Center allows county residents and small businesses to bring their municipal solid waste and recyclables directly to the I-95 Complex for disposal. The center offers a full range of recycling opportunities as well as household hazardous waste disposal service. Recycling of paper, cardboard, cans and bottles is free to residents. In FY 2013 there were over 41,360 visits by residents to the RDC.
- The management of compact and other fluorescent lamps from residences in the county is addressed in several ways. These lamps can be taken to either of the county's Household Hazardous Waste facilities at the I-66 Transfer Station complex in Fairfax or the I-95 Landfill complex in Lorton. Both of the facilities recycle these lamps at no charge to county residents.
- The Solid Waste Management Program continued its *Electric Sunday* program whereby, on one Sunday each month, residents can bring their e-wastes, including televisions, for recycling to either the I-66 Transfer Station or the I-95 Landfill Complex.
- Recycling of yard waste (brush, leaves and grass) is required for all residential properties in Fairfax County, and collection of that yard waste is required to be provided as part of the base level of service by all permitted collection companies operating in the county from March 1st through December 24th of each year. Yard waste recycling is suspended in the months of January and February because very few leaves and virtually no grass are generated during that part of the year.
- Public education and outreach are key components of any successful municipal recycling program. To that end, the Solid Waste Management Program has focused on developing creative education programs that take advantage of its partnerships with county agencies,

Fairfax County Public Schools, community organizations, commercial businesses and privately-owned collection companies. Outreach programs consist of: activities and displays at county festivals; support and publicity for several events specifically dedicated to recycling; public speaking opportunities; and technical support in the research of recycling technologies and issues. Other Solid Waste Management Program public education and outreach examples include the following:

- The program works closely with the Northern Virginia Regional Commission on a regional public information program entitled “KnowToxics.” It also supports a rechargeable battery recycling program, in collaboration with the Rechargeable Battery Recycling Corporation Program.
- The program continues to be a prime sponsor of Fall for Fairfax and participant in Celebrate Fairfax. These events provide great opportunities to conduct public outreach and disseminate technical guidance and practical information on using the county’s solid waste management system.
- The program is a financial sponsor of the annual Earth Day/Arbor Day celebrations promoted by Clean Fairfax Council. The program also supports the Johnnie Forte, Jr. Environmental Scholarship, which awarded fifteen \$500 grants to applicants from the Fairfax County Public Schools. It also supports Fairfax County’s Employees for Environmental Excellence. The group meets monthly and works on projects designed to encourage county employee participation in recycling and other environmental protection activities.

Alice Ferguson Foundation

In addition to the county’s outreach efforts, the nonprofit Alice Ferguson Foundation has implemented programs throughout the Potomac River watershed, with benefits to the main stem of the river as well as tributaries in Washington, D.C., Maryland, Pennsylvania, West Virginia and Virginia. The foundation’s mission is “to provide experiences that encourage connections between people, the natural environment, farming and the cultural heritage of the Potomac River Watershed, which lead to personal environmental responsibility.” The foundation organized the April 2014 - 26th annual Potomac River Watershed Cleanup. Preliminary reports show that over 11,375 volunteers removed almost 220 tons trash and debris from the region at 318 cleanup sites throughout Washington, D.C., Maryland, Virginia, West Virginia and Pennsylvania. The trash collected during the cleanup included 938 tires, 205,200 beverage containers, 35,500 plastic bags and 18,600 cigarette butts. Other programs implemented by the foundation include: 1) Trash Free Potomac Watershed Initiative; 2) Potomac Watershed Trash Summit; and 3) Campaign to reduce littering and illegal dumping through enforcement of local laws.

Solid Waste Disposal Fee

The contract waste disposal fee, offered to companies that sign agreements with the county, was \$54.00 per ton in FY 2014 and will remain the same for FY 2015. Disposal fees support all solid waste public benefit programs such as household hazardous waste disposal, electronics recycling,

personal document shredding, enforcement of the county's solid waste ordinance and solid waste public outreach/education. Covanta electrical revenues are used to keep the disposal fees low. The base solid waste disposal fee remained at \$60.00 per ton for FY 2014 but increased to \$62.00 in FY 2015. A complete list of fees for various materials is posted on the county's website and at the facilities.

Comments

1. The five year contract with Covanta should provide stability and reasonable cost to county residents.
2. Improved metals recovery from Covanta ash is beneficial by increasing recycling and lowering the ash that consumes landfill space.
3. The newly expanded hazardous waste disposal hours will assist in making it easier for residents to properly dispose of these materials and make it less likely such wastes will be released into the environment. See the Hazardous Materials chapter for additional discussion.
4. The county's education programs help support environmental stewardship.
5. Portions of the I-95 Landfill predate modern landfill environmental protection requirements. As a result the potential for groundwater contamination requires careful attention and remediation actions. The county has been exemplary in doing what is needed. This program should continue to be a priority for environmental protection.
6. The landfill gas recovery program assists in reducing methane release, an important action to ameliorate greenhouse gas emissions.
7. The county continues to examine alternate waste reduction methods to the Covanta facility. These alternatives are unlikely to be implemented in the near future. The county is encouraged to continue examining these alternatives to Covanta with a focus on overall environmental benefit.
8. The county uses single stream recycling where glass, paper and plastics are all collected in a single stream. While this is efficient in collection, it results in lowering the value and environmental benefit of the recycled material.
9. The county provides trash and recyclables collection to a little over 10 percent of county households. The remainder of households and commercial needs are met by private haulers. While this approach provides for competition and choice, the result can be excess traffic, increased greenhouse gas generation and increased fuel use. Redundant truck traffic exerts extreme wear on county roads requiring additional maintenance and unnecessary traffic that risks increased traffic accidents. Traffic safety is the major concern in trash collection; reductions in truck traffic would result in traffic safety improvements.

Recommendations

1. While the County's 48 percent recycling rate exceeds the minimum state requirement, it is considerably less than Montgomery County Maryland's rate of 58 percent. Additional means of increasing recycling should be investigated and implemented. In particular, recycling requirements for commercial properties should be enforced and additional requirements should be considered.
2. EQAC recommends the continued investigation of alternative waste stream reduction including food waste composting. Regional cooperation should be considered.
3. EQAC recommends that opportunities to minimize redundant trash truck collection trips in the same neighborhoods be examined for implementation while not increasing cost.
4. To increase the value and environmental benefit of recycled materials, the county should investigate ways to improve the quality of recyclables collected at residential and commercial properties. Removing glass from residential collection systems could significantly improve the quality of paper and plastic recycled. As such, alternative methods of glass recycling should be considered in addition to other ways to improve the quality of recyclables collected. One potential method to reduce the quantity of glass in the waste stream would be to establish a container redemption fee; such a fee would also reduce litter and increase the recovery of containers. EQAC therefore supports a statewide container redemption fee.
5. The county should investigate the potential for increased county participation in recycling of materials such as asphalt, glass and organic materials.

References

Much of the narrative and illustrations were supplied by the Solid Waste Management Program of the Department of Public Works and Environmental Services. EQAC also acknowledges Clean Fairfax and the Alice Ferguson Foundation for the information each organization provided.

VI. Hazardous Materials

Fairfax County hazardous materials issues have not changed much in the last few years. Although the resources that address hazardous materials have been reduced during the budget challenges of the past few years, the county has adapted and become more efficient and effective. Fairfax County is relatively “clean.” Nevertheless, the county does have its share of problems. The main concerns are hazardous materials incidents involving spills, leaks, transportation accidents, ruptures or other types of emergency discharges. Secondary is the use and disposal of hazardous materials in either daily household activities or by small quantity commercial generators. The final concern is the clean-up and regulation of hazardous materials.

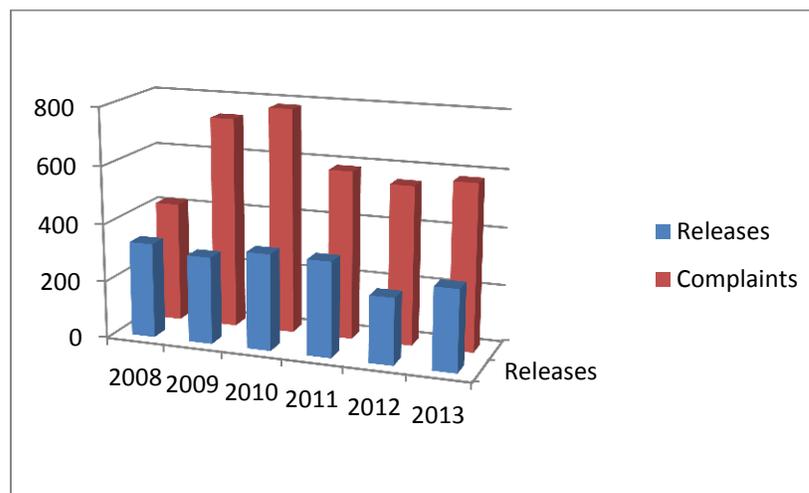
Although the news media report industrial and transportation related hazardous materials incidents, there is a general lack of awareness by the public of health and safety risks associated with the use, storage and disposal of common household hazardous materials. Educating the public on the implications of these hazardous materials on peoples’ lives remains a significant goal.

Recent Activities

- The Fire and Rescue Department’s Fire and Hazardous Materials Investigative Services Section reported receiving 579 complaints involving hazardous materials in 2013. The number of actual releases of hazardous materials was 283 in 2013. The trend of such incidents is shown below:

Fire and Rescue Department’s Fire and Hazardous Materials Investigative Services (FHMIS) Incident Trends		
Fiscal Year	Complaints/Case Entries	Spills, Leaks, or Releases of Hazardous Materials
FY 2013	579	283
FY 2012	552	231
FY 2011	585	331
FY 2010	782	335
FY 2009	735	303
FY 2008	418	330

FHMIS Incident Trends



- FY 2010 budget impacts that had direct impact on environmental programs relating to hazardous materials include: reorganization of the Hazardous Materials and Investigative Services Section; the loss of the Local Emergency Planning Committee Coordinator; and the elimination of the Environmental Hazards Investigation Section of the Fairfax County Department of Health. The HMIS reorganization did not involve any reduction in service or mission objectives for the section. Resources were reallocated to better distribute workload and address concerns for officer safety and staffing. The Environmental Hazards Investigation Section had provided valuable services by responding to complaints about mold, radon, asbestos and indoor air quality. These services will now need to be provided by private contractors.
- In addition to the efforts of the operations Division and Hazardous Materials Investigative Services Section personnel, the Fire and Rescue Department maintains a contract with a major commercial hazardous materials response company to provide additional support for large scale incidents. The Fire and Rescue Department has stressed its commitment to protecting the environment and residents through proper enforcement of Fairfax County Fire Prevention Code and through rapid identification, containment and cleanup of hazardous materials incidents.
- Since 2010, the Fire and Rescue Department, in conjunction with the Fairfax Joint Local Emergency Planning Committee, has maintained an online software program called Tier 2 Manager. This program allows companies that use, store or manufacture chemicals in the county to report this information electronically to the fire department and FJLEPC so that the community and first responders will be aware of these chemicals within our community as required by the Emergency Planning and Community Right to Know Act. Emergency planners and response personnel have instant access to chemical inventories and Emergency Response Plans for each facility deemed to be a Critical Hazard Facility. Additionally, Emergency Response Plans are developed for critical infrastructure facilities such as sewage and water treatment plants and bulk petroleum storage facilities.

- The Fire and Hazardous Materials Investigative Services Section initiated a records management system in 2012 called Fire Files. This new RMS combines previously collected data from the section’s Hazardous Materials Complaint Database and its Fire Investigations Case Files into one single records management system.
- The biggest news this year was that the Solid Waste Management Program realigned resources and planned for opening the HHW areas of the disposal facility to coincide with regular operations of the Recycling Disposal Facilities at both of the major collection sites. The new hours were in effect as of July 1, 2014. EQAC has long advocated for expanded collection capability at permanent and remote sites for the growing amount of household hazardous waste. Expanded collection of the previous monthly Electric Sunday program to an every-day service is very commendable. Remote collection events were conducted quarterly in 2012 through 2014, but they are not planned for 2015. This is a concern to EQAC because the remote collection events target a different customer engagement, but we will review the use of the daily collections at the two sites to see if they offset the necessity for the remote events.
- The trend for collection of Household Hazardous Waste is shown below:

Fairfax County Household Hazardous Waste Program: Record of Fiscal Year Disposal			
Fiscal Year	Participation (# of users)	HHW (pounds)	Cost per household
FY 2013	28,723 households	470,775	\$23.07
FY 2012	26,889 households	423,275	\$25.30
FY 2011	21,909 households	416,110	\$25.62
FY 2010	23,110 households	350,815	\$27.11
FY 2009	19,951 households	404,896	\$32.66
FY 2008	22,112 households	452,552	\$30.59
FY 2007	21,958 households	428,064	\$27.77
FY 2006	21,471 households	440,076	\$26.32
FY 2005	22,866 households	411,315	\$18.84
FY 2004	18,600 households	373,220	\$22.92
FY 2003	16,140 households	359,840	\$23.30
FY 2002	16,272 households	368,060	\$20.97
FY 2001	15,312 households	356,275	\$18.75
FY 2000	15,564 households	330,325	\$18.33

Source: Fairfax County Department of Public Works and Environmental Services, Solid Waste Management Program.

- Any person, business or other entity can use the services of Call2Recycle.org. This is an industry-funded product stewardship initiative through which the manufacturer of a product known to contain hazardous constituents pays for the collection and appropriate disposal of the item at the end of its useful life. Program users sign up on-line and they will receive a cardboard box with a prepaid shipping label. The user fills the box with rechargeable batteries after the batteries are placed into individual plastic bags (to prevent arcing and potential fires in shipping). The user calls for pickup by UPS, which will send the container

to a permitted hazardous waste disposal facility, as previously stated, at no charge to the user. The Solid Waste Management Program strongly encourages users of rechargeable batteries to use this free program to responsibly manage their batteries.

- The Fairfax Joint Local Emergency Planning Committee member organizations have been focused on many exercises, ranging from community response to incidents at the Upper Occoquan Service Authority and the Fairfax City tank farm to active shooter incidents at hospitals and many schools. This activity is a great example of maximizing scarce resources by teaming with city resources and conducting joint planning and training.

Stewardship

- What is considered to be hazardous material has changed in recent decades. Formerly, hazardous materials were primarily associated with industrial releases or transportation of chemicals. Hazardous materials now include items used in everyday life, such as rechargeable batteries, compact fluorescent light bulbs, computers and televisions. To address the proper management of these materials, the county implemented its Electric Sunday program to divert electronics from disposal to recycling.

Issues of note

- Compact fluorescent light bulbs contain small amounts of mercury; the bulbs must be disposed of properly after they are no longer functional. Fairfax County has two locations where county residents can recycle fluorescent lamps at no cost. Residents can recycle these materials and other household hazardous wastes at either the I-66 Transfer Station in Fairfax or the I-95 Solid Waste complex in Lorton.

Legislative Update

- None.

Comment

1. EQAC has long advocated for expanded collection capability at permanent and remote sites for the growing availability of household hazardous waste collection. Expanded collection of the previous monthly Electric Sunday program to an every-day service at the two permanent collection sites is very commendable. Remote collection events were conducted quarterly in 2012 through 2014, but they are not planned for 2015. This is a concern to EQAC because the remote collection events target a different customer engagement, but we will review the use of the daily collections at the two sites to see if they offset the necessity for the remote events.

Recommendation

- None.

VII. Ecological Resources

Background

Open space and natural habitat continue to be reduced in Fairfax County, primarily because of development (both residential housing and commercial buildings) and road building. As this resource is reduced, increased emphasis must be placed on protecting, preserving and enhancing the remaining open space and natural habitat in Fairfax County.

Fairfax County contains a total of 227,873 acres (excluding roads and water). Of this total, 33,457 acres (14.7 percent) are in parks and recreation as of January 2013. Another 15,361 acres (6.7 percent) are vacant or in natural uses. This compares to the approximately 26,700 acres (11.7 percent) that were vacant or in natural uses as of January 2003. However, not all this acreage can be considered as open space that is valuable for natural habitat. First, the park acreage consists of active recreation (ball fields, etc.) as well as passive recreation (stream valley parks, nature centers, etc.) Ball fields, while greatly needed in Fairfax County, do not do much for protecting natural habitat. In a like fashion, much private open space consists of mowed areas and isolated trees (not woodlands). Again, this does little for protecting natural habitat. Both active recreation areas and private open space, however, if properly designed can help the environment by reducing storm water runoff (by allowing storm water to infiltrate into the soil).

Second, while vacant land is often wooded, this land is subject to development. Considering the continuing rapid pace of development in Fairfax County, much of this land will soon become residential space, office space, retail space, etc., and not provide much in the way of protecting natural habitat. In 1980, vacant land accounted for 32.2 percent of the total land in Fairfax County. By 1990, this had dropped to 19.5 percent and the figure was 6.1 percent as of January 2013.

Therefore, Fairfax County needs to undertake stronger efforts in order to protect, preserve, and enhance the environmentally sensitive open space in the county. These efforts should include the establishment of a countywide Natural Resource Inventory, followed by a countywide Natural Resource Management Plan. Additionally, the county needs an aggressive program seeking easements on privately owned environmentally sensitive land and, as opportunities arise, to purchase environmentally sensitive land.

Recently, two significant efforts have occurred that should help in the county's preservation and protection of natural resources. First, as reported in the 2004 Annual Report on the Environment, the Fairfax County Board of Supervisors adopted an environmental vision for Fairfax County – *Environmental Excellence for Fairfax County: a 20-Year Vision*. This vision cuts across all activities in Fairfax County and outlines guidelines that hopefully will be followed in future planning and zoning activities in Fairfax County.

Second, as also reported in the 2004 Annual Report on the Environment, the Park Authority approved the Natural Resource Management Plan for park properties. Park Authority staff began revision of this agency Natural Resource Management Plan in fall 2012. The Park Authority staff held a public review in fall 2013 and adopted the revised Natural Resource Management Plan in January 2014. If this plan is implemented, improved preservation and protection of environmentally sensitive land should be the result. However, the Park Authority needs additional funding if to implement the plan.

EQAC continues to commend a number of organizations for their activities in protection, preservation and enhancement of environmentally sensitive areas. These organizations include: the Northern Virginia Soil and Water Conservation District, the Virginia Department of Forestry, the Northern Virginia Conservation Trust, Fairfax ReLeaf, the Fairfax County Restoration Project, the Fairfax County Department of Public Works and Environmental Services and the Fairfax County Park Authority and its staff. EQAC especially commends the Fairfax County Board of Supervisors for its vision and activities in environmental areas.

EQAC also commends those residents of Fairfax County who give donations and time to a number of county organizations involved in environmental activities. EQAC encourages such volunteer activity. The following paragraphs describing organizations' activities mention opportunities for such stewardship. Open space and natural habitat continue to be reduced in Fairfax County, primarily because of development (both residential housing and commercial buildings) and road building. As this resource is reduced, increased emphasis must be placed on protecting, preserving and enhancing the remaining open space and natural habitat in Fairfax County.

Recent activities

Fairfax County Park Authority

- Between July 2013 and June 2014, the Park Authority added 49.44 acres to its parkland inventory. This brings the parkland inventory to a total of 24,775 acres as of June 2014.
- The Park Authority adopted a revised Natural Resources Management Plan in January 2014. (The original plan was adopted in 2004.) This revised plan more closely focused on adaptive management of natural resources. However, the Park Authority lacks sufficient funding to fully implement the plan. Some funding has been secured through the Environmental Improvement Program plus a combination of proffers, bonds, telecommunications fees and others. Much more needs to be added to the budget to fully fund the plan.
- FCPA's invasive plant control projects occur at over 60 park sites throughout the county. The Resource Management Division's nature centers such as Ellanor C. Lawrence Park, Huntley Meadows Park and Riverbend Park also work collaboratively with the Invasive Management Area program to remove the most

highly invasive plant species from selected areas of parkland. The partnership with Earth Sangha, a local nonprofit organization, continues to be a highlight of invasive plant control efforts at both the Marie Butler Leven Preserve and Wilburdale Park. In addition, in 2013, Earth Sangha donated native plants to restore areas previously controlled for invasive plants throughout the Park Authority. Overall, Earth Sangha contributed thousands of volunteer hours to park projects.

- The Invasive Management Area program began the eighth year by celebrating Take Back the Forest in April and May 2013. During those two months, over 850 volunteers logged 2,200 hours. The IMA program continues to capture the enthusiasm of volunteers for unstaffed parks; there are currently 37 sites with 40 active volunteer leaders. Nearly 35,000 volunteer hours have been contributed to the IMA program since its inception in 2005. In 2013 nearly 2,000 volunteers spent 5,665 hours restoring habitat through the removal of invasive plants and the planting of native species. EQAC notes that this is a very successful, highly-leveraged program (through the large investment of labor by volunteers).
- The Early Detection Rapid Response volunteer program, a program to detect new non-native invasive plant populations, surveyed over 300 acres at 20 parks.
- In the 1970s and '80s, Huntley Meadows' central wetland was known for its regional significance as one of the most productive and diverse non-tidal wetlands in the mid-Atlantic area. It was a hemi-marsh, a shallow wetland less than three feet deep of approximately 50% open water and 50% vegetated water. Since the late '80s, silt from surrounding neighborhoods, storm water runoff and poorly regulated construction sites flowed into the wetlands. That silt combined with the colonization and spread of aggressive plant species and with the changing activity of nomadic beavers to slowly reduce the wetlands' habitat and wildlife diversity. Cattails and rice-cut grass grew on the deposited silt and took over areas that used to be open water while beavers abandoned key dams. The wetland lost about one-third of its water depth. To restore the wetland to its 1980s condition and provide long-term wildlife habitat, the Fairfax County Park Authority and the Huntley Meadows Park community engaged in wetland restoration. There were five primary aspects of the project: 1) an earthen berm to hold back water; 2) a water control structure to manage water levels; 3) expansion of the wetland into the surrounding forest; 4) five deep pools to provide year-round wildlife habitat; and 5) brush shelters and logs to provide additional wildlife habitat. Construction started in April 2013 and was completed in March 2014. The \$3 million cost of design, permitting and construction was funded by park bonds and grants and managed by Park Authority staff. Park staff and volunteers will now monitor, manage and maintain the restored wetland.

NOVA Parks (Northern Virginia Regional Park Authority)

- NOVA Parks owns and operates 30 regional parks and owns 11,265 acres of land throughout the region. It also holds conservation easements on 115 parcels covering more than 665 acres. NOVA Parks acquired the half acre Tinner Hill site

straddling the boundary of Fairfax County and Falls Church, adding needed open space in a developed part of the county.

- Tree planting efforts that are part of implementing NOVA Parks' 2012 Strategic Plan initiatives include the following activities: Bull Run Regional Park planted 400 trees in riparian areas along Bull Run and Cub Run; more than 30 new tree saplings were planted at Sandy Run Regional Park; and 14 new trees were planted at Occoquan Regional Park as part of the Fairfax County Department of Environmental Services Springfest.
- The W&OD Trail regularly offers invasive removal as a scout project option, along with the planting of butterfly gardens. In 2013, Eagle Scouts removed kudzu along the trail at the Gallows Road intersection in Dunn Loring and removed mile-a-minute vine at Old Reston Avenue station. The W&OD Trail staff selectively applies herbicides to the park's fence lines for invasive vines and woody plants such as tree of heaven, mile-a-minute vine and oriental bittersweet, allowing natives to have less competition. Invasive plant control efforts also continued at: Occoquan Regional Park; Bull Run Regional Park and Bull Run Shooting Center; and Meadowlark Botanical Gardens. Bull Run Shooting Center works on invasive vine removal through hand-cutting, pulling and clipping. At Hemlock Overlook Regional Park, NOVA Parks controls invasive autumn olive by cutting. At Upton Hill Regional Park, volunteers work weekly on invasive removal. During the Earth Day event at Upton Hill Regional Park, NOVA Parks' roving naturalist presented a program about invasive plants and management techniques. At Pohick Bay Regional Park, an Eagle Scout performed a project to remove invasive bamboo from the property.

Fairfax ReLeaf

- Fairfax ReLeaf is a nonprofit (501(c)(3)), non-governmental organization of private volunteers who plant and preserve trees in Northern Virginia, preserve native habitat and educate the public about the benefits of trees. Fairfax ReLeaf planted and distributed 5,219 trees and shrubs in calendar year 2013. Over 1,000 volunteers spent over 2,400 hours planting tree seedlings, removing invasive species and maintaining planting sites. Highlights of Fairfax ReLeaf's 2012 plantings were: the planting of 500 trees and shrubs in riparian areas; the planting of 1,151 trees and shrubs on homeowner association and private property; and the planting of 1,707 trees and shrubs in parks, including private, county, and national parks. Volunteers removed nearly 900 pounds of invasive mile-a-minute from a reclaimed RPA site.
- Fairfax ReLeaf provided many opportunities for community groups to serve Fairfax County in 2013. These included five school group plantings, three Girl Scout and Brownie projects, a Boy Scout project and an Eagle Scout project. ReLeaf led five corporate workdays when employees from workplaces such as Level Three, Deloitte, CGI, AlterEcho and Winchester Homes gave their time to improve Fairfax County. Fairfax ReLeaf also conducted two workshops to prepare individuals to lead plantings.

Northern Virginia Conservation Trust

- The Northern Virginia Conservation Trust was founded in 1994 as the Fairfax Land Preservation Trust. In 1999, the trust changed its name to The Northern Virginia Conservation Trust. NVCT is a 501(c)(3) nonprofit land trust dedicated to preserving and enhancing the natural and historic resources of Northern Virginia. NVCT added a 15-acre easement to its portfolio at the end of 2013 and has now preserved nearly 700 acres through conservation easements, fee-ownership and partnerships throughout Fairfax County. NVCT has several ongoing projects in Fairfax County and is currently pursuing over a dozen prospects for protecting land in partnership with interested landowners. These lands encompass diverse landscapes, from stream valleys and wetlands to historic properties and forested tracts in residential areas.

Potomac Conservancy

- The Potomac Conservancy was formed in 1993 by individuals concerned about inappropriate development, clear cutting and other activities that were beginning to have a negative impact on the unspoiled character of the Potomac gorge. This led to the formation of the nonprofit land trust now known as the Potomac Conservancy. The conservancy was incorporated on August 24, 1993 in Maryland as a nonprofit corporation. The conservancy is registered in Maryland, Virginia and West Virginia and is an easement holder in Maryland's Conservation Reserve Enhancement Program.
- The Potomac Conservancy currently holds easements of four properties in Fairfax County. These properties total 13.46 acres, with 0.14 of that being river frontage. In 2013, its seed collections program collected 377 pounds of seeds. One hundred hours were donated by 25 volunteers for this effort. They collected seeds from the following species: Black Walnut, Shagbark Hickory, Chestnut Oaks and Black Oak
- For further information on the Potomac Conservancy, see <http://www.potomac.org>.

McLean Land Conservancy

- The McLean Land Conservancy was formed to promote and foster the preservation, protection, conservation and balanced use of the McLean area's unique natural, cultural, recreational and historic resources. The conservancy's main objective was to preserve open green space.
- MLC is a 501(c)(3) land trust organization that was incorporated in the Commonwealth of Virginia in January 2000. MLC holds a 16-acre conservation easement on Scotts Run in McLean. This important property is vital for the health of Scotts Run, which provides stormwater drainage for Tysons Corner. MLC, however, is now dissolving; it has transferred its one 16-acre easement to the Northern Virginia Conservation Trust.

Northern Virginia Soil and Water Conservation District

- The Wakefield Stream Restoration project is a partnership among Fairfax County Park Authority, Northern Virginia Soil and Water Conservation District, Braddock District Supervisor's Office, Fairfax County DPWES – Stormwater Planning and Utilities Design and Construction Divisions, Dominion Virginia Power, Fluor/Transurban, Virginia Department of Transportation, Friends of Accotink Creek, Fairfax County Parks Foundation, Mid-Atlantic Off-Road Enthusiasts, Vanasse, Hangen, and Brustlin, Inc., and Environmental Quality Resources, Inc. Located within Wakefield Park, this 800 linear foot project begins at the outfall under I-495 and ends at the confluence of the creek with the mainstem of Accotink Creek. This highly unstable stream yields large amounts of sediment due to significant stream bed and bank erosion after storm events. To bring attention to the project and to the issues facing the watershed, the partners worked together to host a competition to name the creek and connect it to the broader community. Don Wayne, a Burke resident, submitted the winning entry. The design is based on natural channel design concepts and includes a number of in-stream best management practices to provide stable bed and bank and habitat. Construction began in October 2013 and was complete in April 2014. Ribbon cutting and plantings by volunteers took place in May 2014.
- NVSWCD performs site investigations and conservation planning for land owners interested in creating and renewing Agricultural and Forestal Districts and administers the Virginia Agricultural Best Management Practices Cost-Share and Tax Credit program in Fairfax County. To support these efforts, NVSWCD provides soil and water quality conservation planning to suburban horse farms, small farmettes, plant nurseries and golf courses. In 2014, NVSWCD prepared plans covering 31 parcels, totaling 491 acres and providing recommendations for the protection of approximately 33,556 linear feet of RPA.
- NVSWCD's annual seedling program emphasizes the role of vegetation in preventing erosion, conserving energy and decreasing and filtering stormwater runoff. Seedlings planted in riparian areas also help to protect stream channel stability and stream water quality, as well as improving the surrounding habitat. This seedling program offered residents a package of native tree and shrub seedlings for a small cost. The 2014 "Bee Friendly" Themed Seedling Sale featured native tree and shrub varieties that provide food and refuge for honey and other native bees, including American Plum, Black Gum, Persimmon, Buttonbush, Elderberry, Indigobush, Serviceberry and Winterberry. The theme was a great success and the packages quickly sold out. This resulted in over 380 customers purchasing a total of 6,220 seedlings, who in turn planted them across Fairfax County and surrounding areas. In addition to the benefits the trees and shrubs provide to bees, the plants were selected for their adaptability across the piedmont & coastal plain provinces and for many different growing conditions.

- NVSWCD interacts with residents in many ways through efforts such as citizen science programs (Volunteer Stream Monitoring), the Green Breakfast Series, Watershed Friendly Garden Tour and build your own programs (rain barrels and composters).

Fairfax County Wetlands Board

- The Center for Coastal Resources Management of the Virginia Institute of Marine Science estimates that Fairfax County's tidal shoreline is approximately 111.85 linear miles. The county's tidal shoreline within the coastal plain extends from Cameron Run on the north, traversing south along the Potomac River and extending to the Occoquan Reservoir on the south where the tidal influence terminates at the dam.
- The Wetlands Board jurisdiction is that area between mean low water and mean high water in non-vegetated wetland environment and between mean low water and the equivalent of 1 1/2 mean high water in a vegetated environment. Since 2010, after the Board of Supervisors adopted the beach ordinance, the Wetlands Board has also reviewed tidal projects which may involve beach. Beach can extend beyond or it can be contiguous with non-vegetated tidal wetland area.
- In an effort to assist localities to implement the state policy that requires localities in Tidewater Virginia to incorporate coastal resource management guidance and best practices into the locality's comprehensive plan, the Virginia Institute of Marine Science has developed a Comprehensive Coastal Resource Management Portal. The portal is designed to provide guidance and resources to the public, especially to shoreline property owners in Virginia and to local governments. The website provides information on the current condition of the shoreline and information to help determine if shoreline stabilization is justified. VIMS also recommends the type of stabilization that would be most appropriate based on the shoreline conditions. The Comprehensive Coastal Resource Management portal is available at <http://ccrm.vims.edu/ccrmp/fairfax/index.html>.
- VIMS provided a public training session for the Wetlands Board members and interested members of the public on April 17, 2014 at the Mount Vernon Government Center. Glenda Booth, Wetlands Board Chair, was appointed to the VIMS Council.
- The Wetlands Board welcomes VIMS guidance and has adopted a living shorelines policy, available at <http://www.fairfaxcounty.gov/dpz/environment/finallivingshoreline.pdf>. The Wetlands Board has also adopted a mitigation policy that can be found at http://www.fairfaxcounty.gov/dpz/environment/wetlands/mitigation_compensation_policy_adopied.pdf.
- The Wetlands Board has received two permit requests for 2014 to date. One permit request was granted and the other request was withdrawn by the applicant after the

Wetlands Board held a public hearing. The Wetlands Board continues to work on several wetlands ordinance violation issues.

Virginia Department of Forestry

- In 2013, the Virginia Department of Forestry participated in several efforts aimed at improving riparian areas. In these efforts, VDOF partnered with the Northern Virginia Soil and Water Conservation District, the Department of Public Works and Environmental Services, the Fairfax County Park Authority and Fairfax ReLeaf. VDOF also provided project leadership and technical support to tree planting efforts in partnership with elementary school children, private landowners, Fairfax ReLeaf and the Potomac Conservancy.
- The Virginia Department of Forestry participates in the Fairfax County Arbor Day on the last Saturday in April each year. The county earned again, for the 30th year, the Tree City USA award. The award is applied for by the Fairfax County Urban Forest Management Division and given through the Virginia Department of Forestry. Tree seedlings are distributed by VDOF to people attending the Arbor Day celebration. In 2013, 400 donated short leaf pine seedlings were distributed for planting by volunteers in their communities.
- The Virginia Department of Forestry sponsored a drop-off site in Fairfax County for the Growing Native project. This project involves the collection of tree seeds (acorns, hickory nuts, black walnuts, etc.) which are transported to VDOF nurseries where the seeds are planted and seedlings are grown. In 2013, approximately 600 pounds of seeds (mostly acorns) were collected. Each year, 500-700 seedlings are given to volunteers for planting on public lands in Fairfax County.
- The conservation of the forested land base in Fairfax County is a part of the VDOF plan. The Fairfax County office works closely with the Fairfax County Department of Planning and Zoning to review Agricultural and Forestal District applications. A&F District forest management plans are prepared by VDOF; these efforts support the management of forested land for conservation purposes. One new A&F plan covering 47 acres was prepared in 2013 and five A&F plans covering 610 acres were reviewed and updated. VDOF also wrote a Stewardship Management Plan and provided less formal advice to a number of homeowners associations, civic groups and residents. All plans and advice provided by the VDOF are informed by the water quality and conservation benefits of protecting and maintaining forests and street trees.
- The Virginia Department of Forestry also helps protect water quality and forest resources in the county by reviewing and commenting on rezoning applications and development plans. VDOF reviewed 68 applications and plans in 2013. In addition, VDOF annually inspects dry hydrants to make sure they are available to fight wildfires in the county.

- The department maintains an active public education and outreach program. Audiences range from school groups to adults. In 2013, VDOF conducted 63 talks on the general benefits of urban forests and riparian buffers.
- The Virginia Department of Forestry website (www.dof.virginia.gov) contains many pages on forest management and urban forestry. Topics range from tree identification to proper planting under power lines. The pages contain information developed by VDOF and links to many other sources of information on urban forestry and tree care.

Virginia Department of Transportation

- On April 10, 2008, the Environmental Protection Agency and the U.S. Army Corps of Engineers jointly issued a Federal Mitigation Rule giving preference first to mitigation banks, second to in-lieu funds and third to permittee responsible mitigation (i.e., preservation, enhancement and creation) as compensation for impacts to aquatic resources. The Virginia Department of Environmental Quality also supports this preference hierarchy presented in the Rule. As a result, VDOT now purchases wetland and stream credits from approved mitigation banks to compensate for unavoidable impacts to wetlands and streams in lieu of constructing mitigation sites. For the 2013/2014 fiscal year, VDOT purchased one-tenth of a wetland mitigation credit as required compensation for unavoidable wetland impacts associated with VDOT projects within Fairfax County.
- The wetland and stream mitigation at the recently completed I-95/Telegraph Road interchange improvement project is one of that last remaining on-site mitigation sites under active permit-required success monitoring by VDOT staff over the next five years. The compensatory mitigation requirements included wetland enhancement/creation of 1.71 acres of tidal wetlands, 0.63 acre of non-tidal wetlands near the confluence of Taylor Run and Cameron Run and 0.36 acre of stream restoration to relocated tributary to Cameron Run.

Virginia Department of Environmental Quality

- In 2013 the Northern Regional Office of the Virginia Department of Environmental Quality received nine applications to impact surface waters in Fairfax County. A total of nine new Virginia Water Protection Wetland Permits were issued. Compensation for impacts to surface waters was proposed to be provided through the purchase of bank credits and on-site stream restoration or riparian buffer enhancement.

Urban Forestry

- In 2013, the Urban Forest Management Division, in cooperation with the county GIS office, began running modeling software on the Difficult Run Watershed to simulate the effects of changes in tree and impervious cover within a defined watershed on stream flow and water quality. The tree canopy analysis, along with field-collected

inventory data, hourly stream flow and weather data is used to quantify the value of trees on the watershed level. Theoretical gains or losses in tree canopy and/or impervious surfaces can be modeled to demonstrate the effects on water quality and stream flow. Preliminary findings for the Difficult Run Watershed show that with decreasing tree cover, the amount of total suspended solids within streams compared to the base flow concentration increased on average when measured over a monthly timeframe for each month of the year. In contrast to this, an increase in tree cover within the Difficult Run Watershed resulted in concentration decreases in the amounts of total suspended solids within streams compared to the base flow on average when measured over a monthly timeframe for each month of the year. The modeling software has already been demonstrated as a valuable tool in setting realistic tree canopy goals for the 30 major watersheds in the future.

- In fall 2012, UFMD entered a data exchange agreement with Casey Trees Foundation in order to obtain an updated remote sensing analysis that quantified countywide tree canopy levels based on 2011 high-resolution satellite imagery and LIDAR data. The new analysis indicates that 53 percent of the county's landmass was covered by tree canopy in fall 2011 (the date of the most recent imagery acquisition). This 53 percent tree canopy level exceeded the 45 percent goal adopted by the Board of Supervisors in 2007. UFMD presented this information to the board's Environmental Committee in October 2013. Recommendations for a revised canopy goal are likely to feature a "no-net-loss" approach or a modest canopy gain over a 10 to 20 year period. Both paths will still require funding for tree planting programs and a continuation of robust tree conservation efforts during the land development process.
- At the close of 2013, Fairfax County reached a milestone with its involvement with the Arbor Day Foundation's Tree City USA Program. For the 30th consecutive year, the county was recognized for its excellence in urban forest management. This milestone was followed in April 2014, when the county was again recognized for its efforts and awarded the Tree City USA Growth Award for the fifth time.
- Gypsy Moth Caterpillar: In calendar year 2013, gypsy moth caterpillar populations remained very low. There was no measurable defoliation reported in Fairfax County or elsewhere in the Commonwealth of Virginia. The reason for the extremely low gypsy moth populations in Fairfax County and other areas is due to effective control programs in past years and the fungal pathogen *Entomophaga maimaiga*. The gypsy moth staff will continue to monitor populations, but no control treatments were applied in 2013 or 2014. It is important to note that gypsy moth populations are cyclical in nature and it is not uncommon for outbreaks to occur following dormant phases.
- Fall Cankerworm: The fall cankerworm (*Alsophila pomataria*) is an insect native to the eastern United States and feeds on a broader variety of hardwood trees than the gypsy moth. Periodic outbreaks of this pest are common, especially in older declining forest stands. Fairfax County is currently experiencing a cankerworm outbreak. The Mount Vernon and Lee magisterial districts have in recent years

experienced the most severe infestations and associated defoliation. Forest pest staff observed similar population outbreak levels in the winters of 2012 and 2013. Approximately 2,000 acres within the same magisterial districts were treated by aerial application of the biological control pesticide *Bacillus thuriangiensis* in the springs of 2013 and 2014.

- **One-Thousand Cankers Disease of Black Walnut:** In August 2010, a fungal disease was detected in black walnut (*Juglans nigra*) in Tennessee. During spring 2011, this disease was identified near Richmond, Virginia. This disease and the beetle that spreads the disease are native to the western United States. In its native range, this disease causes minor damage to western walnut species. Unfortunately, eastern walnut trees are very susceptible to the disease. Trees die within a few years of infestation with the beetle/fungus. Staff is monitoring the development of this disease and has petitioned the Virginia Department of Agriculture and Consumer Services to include this pest/disease to the list of pests that can be controlled by service districts in Virginia. Staff established trapping sites for this pest during summer 2012. Results of this trapping effort proved that the beetle and fungus are found in Fairfax County. Following this discovery, the Virginia Department of Agriculture placed a quarantine around Fairfax County that prohibits the transportation of walnut wood products. Forest Pest staff will continue to monitor walnut tree health and educate homeowners on this condition.
- **Emerald Ash Borer:** The emerald ash borer (*Agrilus planipennis*) is an exotic beetle from Asia and was discovered infesting ash trees in the state of Michigan in 2002. This beetle is known to attack only ash trees and can kill trees in as little as two years. In July 2008, two infestations of emerald ash borer were discovered in Fairfax County in the Town of Herndon and in the Newington area. The U.S. Department of Agriculture's Science Advisory Council has recommended that no eradication action be taken in Fairfax County. This decision was made due to the extent of the infestations and due to the fact that similar eradication attempts in other U.S. states have failed. Since July 11, 2008, a federal order has quarantined Fairfax County for Emerald Ash Borer. This means that all interstate movement of ash wood and wood products from Fairfax County is regulated, including all hardwood firewood, nursery stock, green lumber, waste, compost and chips from ash trees. The Virginia Department of Agriculture and Consumer Services has initiated similar quarantines for the counties of Fairfax, Arlington, Loudoun, Fauquier, Prince William and the cities of Falls Church, Fairfax City, Alexandria, Manassas and Manassas Park. Trapping efforts since 2008 have revealed that beetle populations extend to all areas of the county. The Forest Pest Program has appointed an Urban Forester as its Emerald Ash Borer Outreach Coordinator. This staff member is responsible for educating the public on how to deal with the impending death of many thousands of ash trees. Education efforts emphasize how to hire a private contractor to remove dead and dying trees and how to properly apply pesticides that might keep trees alive.
- **Hemlock Woolly Adelgid:** Hemlock woolly adelgid is a recent addition to the Virginia Department of Agriculture and Consumer Services' list of insects that can be

controlled by the Forest Pest Program. This is an insect that infests and eventually kills hemlock trees. Forest Pest staff is considering various control options for this pest including injected pesticide treatments and releasing predatory insects that feed on HWA. In 2014, staff recommended that the Board of Supervisors approve a limited pilot treatment program for HWA. Plans to conduct small scale treatment efforts on naturally occurring hemlock stands found on public property are underway.

- The Forest Pest Management Branch, in cooperation with VDACS, is monitoring for pests that are not yet known to exist in Virginia but would be problematic should they become established. Current trapping efforts include Asian longhorned beetle (*Anoplophora glabripennis*), oak ambrosia beetle (*Platypus quercivorus*) and sudden oak death disease (*Phytophthora ramorum*). Ongoing monitoring is conducted by strategically placing traps throughout the county that contain lures that are unique to each pest.

Agricultural and Forestal Districts

- Landowners may apply to place their land in special Agricultural and Forestal Districts that are taxed at reduced rates. A&F Districts, which are created by the Commonwealth of Virginia, must have 200 or more acres. A&F Districts of local significance, governed by the Fairfax County A&F District ordinance, must have at least 20 acres and must be kept in this status for a minimum of eight years.
- There was a change in the Dranesville District, resulting in a loss of one local district. This was due to loss of Newcomb which was redistricted into Hunter Mill. There was the gain of one local district in Hunter Mill due to the redistricting of Newcomb. There was the loss of three local districts in the Springfield District. Podolnick and Kincheloe local districts were consolidated and transferred to the Kincheloe statewide district. Additionally, the Whitehall local district was converted to a statewide district. These two actions resulted in the loss of three local districts and the additional of two statewide districts in Springfield. Sully District gained two new local districts with the establishment of the Hickox (Bull Run Winery) and Kulbok Districts.
- The above actions resulted in the decrease of two local districts and the creation of two statewide districts. Overall, there was a net gain of 72.35 acres in A&F districts.

Fairfax Chapter of the Virginia Master Naturalists Program

- Formed in 2006, the Fairfax Chapter of the Virginia Master Naturalist Program provides local residents with naturalist training and then connects them with volunteer stewardship, citizen science and outreach opportunities in parks and natural areas. The process for becoming a certified Virginia Master Naturalist takes from six to 12 months. Two times a year, approximately twenty candidates are selected for a class. They begin with a 60-hour basic training course, which is a combination of classroom lectures and field work that grounds them in natural history and forest and

aquatic ecology. Subject matter experts from NOVA Parks (the Northern Virginia Regional Park Authority), Fairfax County Park Authority, Virginia Department of Forestry, Virginia Tech, Northern Virginia Soil and Water Conservation District, EPA and National Academy of Sciences make up the faculty. Master Naturalists are expected to provide much-needed support to the many environmental organizations striving to protect natural resources in Fairfax County. To be certified, graduates must provide 40 hours of volunteer service and receive eight hours of advanced training each year.

- In 2012, 118 FMN members provided 7,270 volunteer hours to its partners and other organizations. Seventy-one members received Virginia Master Naturalist certification by providing 40 hours or more of volunteer service and completing eight hours of advanced training; 31 members have reached the cumulative 250-volunteer-hour mark, and 11 have contributed over 500 cumulative volunteer hours.
- The Fairfax Master Naturalist chapter successfully ran two basic training classes in 2013, recruiting 40 new members. This brought the number of trained volunteers to 245. With 169 current members, FMN provided over 4,200 hours of volunteer service in 2013, of which 1,371 hours were in education and outreach, 2,556 in citizen science projects, and 2,018 in stewardship efforts. Through this volunteer service, FMN members provided a significant role with the Fairfax County Park Authority's Invasive Management Area program, in both removal and Early Detection-Rapid Response efforts, nature center programs and wildlife surveys. They also made significant contributions to the school system through the development of discovery gardens and support of teachers in developing outdoor activities tied to Standards of Learning requirements.

Fairfax County Restoration Project

- FCRP has continued its coordination with the Virginia Department of Transportation and homeowners on reforestation efforts in areas cleared for the Capital Beltway Express Lanes project.
- In 2011, FCRP began considering a media campaign to raise awareness of the relationship between runoff and pollution. A primary focus of the campaign was to be how replacing turf with trees and other plants could reduce runoff and improve water quality. FCRP became aware that The Chesapeake Club had already developed a similar campaign called www.plantmoreplants.com, which the organization felt was very well done and extremely effective. Working with the club and Chairman Bulova's office, FCRP was able to bring the campaign to Fairfax County. Beginning in fall 2012, Cox Communications has placed the ads in its normal public service announcement schedule. FCRP is now streaming the video clips through its website to further promote the message. Supporting materials developed by The Chesapeake Club have been distributed at functions and are available to any of FCRP's partner organizations, and banners can be seen at retail & landscaping outlets. Ad buys are being done collectively throughout the state to further the message.

- Reforest Fairfax was launched on October 13, 2011. Reforest Fairfax is a tree-gifting program designed to help replenish the tree canopy and to help the county achieve its tree canopy goals. For each \$35 gift purchased, five seedlings are planted by Fairfax ReLeaf during a spring or fall planting season. An on-line locator is available so once the trees are planted the locations of the gifts can be identified. There is also an optional on-line registry for supporters of the program. The program can be accessed at <http://www.fcrpp3.org/reforestfairfax/>. In 2013, the total reached 56 gifts purchased and 280 trees planted.
- Additional FCRP activities are noted in the detailed report and on the project's website at <http://www.fcrpp3.org/>.

Stewardship

- The Fairfax County Park Authority offers a number of opportunities for volunteers, and EQAC encourages county residents to take advantage of these opportunities. Information about these opportunities is available at <http://www.fairfaxcounty.gov/parks/volunteer/>. More information about FCPA and its programs is available at <http://www.fairfaxcounty.gov/parks/resources>.
- Fairfax County residents and other interested parties can donate to the Fairfax County parks through the Fairfax County Park Foundation. The Fairfax County Park Foundation is a 501(c)(3) not-for-profit organization and donations are tax deductible to the fullest extent allowed by law. The foundation's mission is to raise funds to support the parks and land under the stewardship of the Fairfax County Park Authority. Those interested in giving tax-deductible donations to the foundation can contact the foundation at:

Fairfax County Park Foundation
12055 Government Center Parkway
Fairfax, VA 22035
(703) 324-8581
SupportParks@aol.com
<http://www.fairfaxparkfoundation.org>

- NOVA Parks (the Northern Virginia Regional Park Authority) also has opportunities for volunteers. These environmental stewardship opportunities for volunteers are available at Meadowlark Botanical Gardens, Potomac Overlook Regional Park, Upton Hill Regional Park, Pohick Bay Regional Park and various other parks on occasion. More information can be found at http://www.nvrpa.org/park/main_site/content/volunteer.

- Fairfax ReLeaf offers a number of opportunities for stewardship. For further information on Fairfax ReLeaf, visit its website at <http://www.fairfaxreleaf.org>. The organization can be reached at:

Fairfax ReLeaf
12055 Government Center Parkway
Suite 703
Fairfax, VA 22035
Telephone: (703) 324-1409
Fax: (703) 631-2196
Email: trees@fairfaxreleaf.org

- The Northern Virginia Conservation Trust offers many stewardship opportunities for Fairfax County residents. Additional information on NVCT can be found on its website, <http://www.nvct.org>. Landowners whose property contains environmentally sensitive land such as wetlands, stream valleys and forests can also participate in environmental stewardship. If these landowners grant easements to NVCT, they will not only protect sensitive land, but can realize some financial benefits. A perpetual easement donation that provides public benefit by permanently protecting important natural, scenic and historic resources may qualify as a federal tax-deductible charitable donation. Under the Virginia Land Conservation Act of 1999, qualifying perpetual easements donated after January 1, 2000 may enable the owner to use a portion of the value of that gift as a state income tax credit. Fairfax County real estate taxes could also be reduced if the easement lowers the market value of the property.
- For stewardship information on the Potomac Conservancy, see <http://www.potomac.org>.

Comments

1. The Fairfax County Board of Supervisors has endorsed the goals and actions within the Tree Action Plan, adopted a new tree canopy cover goal for the county of 45 percent coverage by the year 2037 and adopted a tree conservation ordinance to strengthen tree preservation policies and procedures. In addition, trees were identified as a special area of interest in the FY 2008 Environmental Improvement Program. An analysis of high-resolution satellite imagery and LIDAR data indicates that 53 percent of the county's landmass was covered by tree canopy in fall 2011 (the date of this most recent imagery acquisition). This figure is much higher than those produced by previous remote sensing and also exceeds the 45 percent goal. Some of the unexpected gain may be attributable to an explosion in the number of invasive trees (such as Callery pear and Tree of Heaven) along transportation and utility corridors--this has contributed large areas of canopy in areas once occupied by other vegetation types. Such invasive trees should not count toward the tree canopy cover goal.

EQAC commends the Board of Supervisors for its progressive approach to improving the retention and expansion of this valuable ecological resource. It is imperative that these programs not be allowed to weaken or be given less priority in future years. EQAC believes that continued emphasis of tree actions in the Environmental Improvement Program document is necessary to assure continued emphasis and eventual meeting of goals.

2. In past Annual Reports, EQAC recommended that the Board of Supervisors emphasize public-private partnerships that use private actions such as purchase of land and easements by existing or new land trusts to protect forests and other natural resources, including champion/historic trees. With the signing of a Memorandum of Understanding between the Board of Supervisors and the Northern Virginia Conservation Trust, such a public-private partnership came into being. Thus, EQAC's recommendation has been satisfied. EQAC continues to commend the Board of Supervisors for this action and recommends continued support for this partnership.
3. In past Annual Reports, EQAC recommended that the Board of Supervisors develop and implement a countywide Natural Resource Management Plan – an ecological resources management plan that can be implemented through the policy and administrative branches of the county government structure. Two necessary tasks should be accomplished first -- prepare and adopt a unified Natural Resource Conservation Policy, and complete a countywide Baseline Natural Resource Inventory. EQAC notes that slow progress is being made in this area by the Fairfax County Park Authority staff in its efforts to establish a natural resources baseline inventory. FCPA has developed a countywide green infrastructure map that appears to be a basis for a Natural Resource Inventory. Additionally, the Urban Forest Management Division is continuing efforts to devise a countywide map for use as a layer on the county's GIS that will delineate the distribution of naturally occurring and landscaped vegetation. However, these efforts must be supplemented by an inventory of the county that accounts for flora and fauna. EQAC also notes the accomplishment of the Park Authority in preparing and publishing a revised Natural Resources Plan in January 2014 for management of the county's parks and urges the Park Authority to fully implement this plan. Additionally, EQAC notes that the Park Authority has taken some steps in implementing the plan, but much more needs to be done. EQAC fully supports these efforts, urging that they culminate in a countywide Resource Management Plan. EQAC's intent is that Fairfax County should have all the tools in place (the policy and the data) to create a plan that will support the active management and conservation of the county's natural resources.
4. While recurring funding to implement the Natural Resource Management Plan has not been secured, progress has been made in identifying positions within the Park Authority. The Park Authority continues to be successful in obtaining project specific funding for resource management. Some funding has been secured through the Environmental Improvement Program plus a combination of proffers, bonds,

telecommunications fees and other sources. Much more needs to be added to the budget to fully fund the plan.

Recommendation

1. The Fairfax County Park Authority approved a Natural Resource Management Plan in 2004. This partially fulfilled a long-standing EQAC recommendation to develop and implement a countywide Natural Resource Management Plan. In 2014, the Park Authority adopted a revised Natural Resource Management Plan that more closely focused on adaptive management of natural resources. However, full funding to implement the plan is not yet in the Park Authority budget. The Park Authority has managed to secure some funding from several sources but lacks most of the amount to implement fully the plan. For the 2004 plan, FCPA staff estimated that full implementation would require approximately \$8 million per year and dozens of staff positions. This included about \$3.5 million to focus on general natural resource management and \$4.5 million for a non-native invasive plant control program. A more phased approach to funding would have allowed FCPA to begin to manage 10 percent of parklands and set up the program to be phased in over time. Phase 1 with this approach would have required \$650,000 and six positions. Implementation of the new plan will require similar funding and positions. EQAC strongly feels that the Natural Resource Management Plan needs to be fully implemented. Therefore, EQAC recommends that the Board of Supervisors provide sufficient funding to implement an initial phase for natural resource management efforts and that the Fairfax County Park Authority Board apply this funding accordingly. EQAC further recommends that, over time, the full plan be funded.

VIII. Wildlife Management

Background

Adult deer consume some six to seven pounds of vegetation per day. This coupled with the growth in the number of deer in the county has resulted in unacceptable destruction of residential landscaping and the understory of our parks and woodlands. The loss of understory has, in turn, cost us many of our birds and small animal species. The Board of Supervisors implemented the Deer Management Program in 1999 in accordance with recommendations that had been developed by the county executive's Deer Management Committee and established the position of county Wildlife Biologist to lead many of the program activities.

The two methods found most effective in reducing the county's deer herd to more acceptable levels are managed hunts and sharpshooters. Due to state law limitations on the discharge of firearms in or near residential neighborhoods, both of these methods have been conducted primarily in parkland. Managed hunts require qualifying participants beforehand and providing supervision during events. Sharpshooter events are conducted by the Tactical Teams of the Police Department Operations Support Bureau. In situations close to residences, archery is the preferred method, since the projectiles travel relatively short distances and are correspondingly less hazardous.

In parks where these measures have been used for three successive years, the understory has shown considerable regeneration; with moderate annual attention to limit the size of the local deer herd, these efforts can achieve full restoration of a biodiverse habitat.

Geese, and to a lesser extent ducks, are primary polluters of our streams and ponds. While they have been federally protected as migratory waterfowl, they have increasingly become permanent residents and thus a year-round problem. Under the protection of the federal laws, the main control measure has been coating the eggs with corn oil and replacing them in the nests. The oil coating prevents oxygen from penetrating the shell and thus the eggs from hatching; replacing them in the nest makes the goose think they are okay and prevents more eggs from being laid. The county and the Park Authority have been conducting egg-oiling at some sites for more than ten years.

Recent Activities

- The county Wildlife Biologist position became vacant in 2008 and there was a considerable lapse in program activities until a suitable replacement could be identified and brought aboard. At the same time, the nationwide recessionary environment severely impacted the county budget and caused additional reductions in program activities. The county Wildlife Biologist position was filled by a highly qualified individual who conducted a thoroughgoing assessment of the wildlife management programs and introduced some additional activities. The position again became vacant in 2014. During the interim, the program was overseen by Animal Control Services Division, Fairfax County Police Department. A new Wildlife Management Specialist was brought on

board in summer 2014. This position now reports to the Director of Fairfax County's Animal Shelter.

- However, despite these difficulties the deer management program was able to conduct some managed hunts and sharpshooter events. The Park Authority on its separate federal permit was able to oil substantial numbers of goose eggs.
- The Wildlife Biologist and the Director of Animal Services have conducted an extensive program review in order to maximize the ongoing effectiveness of the program and the most efficient application of fiscal resources.
- An archery program has been implemented, which will make it possible to address deer control in residential areas where discharge of firearms is prohibited.

Issues of Note

- EQAC feels that it is essential to maintain the programs for controlling the deer population. Otherwise: (1) each year we will lose ground and the damage to key vegetation will increase; and (2) the diet of the excessively large deer herd will become less adequate and the health of the individual members of the herd will suffer.

Comments

Impacts of Deer in Fairfax County

1. While limited program activities were conducted during the vacancy in the position of Wildlife Biologist it is apparent that there was considerable additional damage to the vegetation of the vital understory throughout the county.
2. Due to the current recessionary environment in which the county has been operating, it was necessary to cancel the Assistant Wildlife Biologist position that had been authorized but not yet filled. It is hoped that economic recovery will make it possible to restore program staff to an appropriate level.
3. Public understanding and perceptions of the deer management program were assessed through a survey conducted in mid-2010. The results of the survey are available on the county website <http://www.fairfaxcounty.gov/living/animals/wildlife/deer-management-survey-results.htm>.

Impacts of Geese in Fairfax County

1. The Park Authority has recently held exploratory discussions to examine the feasibility of using managed shotgun hunts for reduction of resident goose populations and the regulatory limitations that may be applied to this approach. An initial pilot test has been conducted on a county-owned privately-managed golf course. This approach has

considerable promise for efficiently meeting FCPA control needs and should be expanded and fully supported.

Coyotes in Fairfax County

1. A small number of coyotes are becoming resident in Fairfax County. Currently the potential advantages and disadvantages seem about evenly balanced. Thus, there are no recommendations at this time except that the county Wildlife Biologist should monitor the situation and keep the relevant county agencies and the public informed.

Wildlife Borne Diseases of Concern in Fairfax County

1. EQAC commends the Board of Supervisors for providing continued active support to the following ongoing programs:
 - The Stream Monitoring Program in which the Stream Protection Strategies Program of the DPWES performs sample collection and field testing and the Health Department performs laboratory testing and analysis functions.
 - Enhanced public education programs and initiatives in key areas, such as control of rabies and of wildlife contributing to pollution of surface waters, epidemiology and abatement of insect borne diseases such as West Nile Virus and Lyme Disease.
 - EQAC commends the Health Department for its excellent public education programs and advocates posting of advisories on the county website when polluted waters are identified.
2. EQAC feels that the Board of Supervisors should monitor these programs by scheduling periodic reports to its Environmental Committee by county staff.
3. Recently, there has been an incident of a feral cat that bit both an adult and child and when apprehended by Fairfax County Animal Control was found to have rabies, which necessitated rabies treatment for the victims. Since feral cats often live in small groups they should be closely monitored as a potential rabies hazard.

Recommendations

Impacts of Deer in Fairfax County

There are three recommendations for continuance of activity in the deer management program:

1. Managed hunts should be continued as they have become both cost-effective and efficient in reducing excesses in the deer herd.
2. The sharpshooter events should be continued because they are both humane and cost-effective.

3. The archery program should be continued as a means of controlling deer depredation of vegetation on residential properties where firearms cannot be used. Archery is also particularly cost-effective, relying on hundreds of qualified volunteers contributing thousands of hunt hours to the program at no cost.

Impacts of Geese in Fairfax County

1. EQAC strongly recommends that the goose management program be continued, particularly the public outreach and training activities so that a cadre of volunteers can be created to provide the labor to do the actual egg-oiling that is the principal control measure. In addition, the shotgun hunt pilot test conducted by the Park Authority should be expanded into an established program.

IX. Noise, Light Pollution and Visual Pollution

The final chapter of the Annual Report on the Environment addresses a series of environmental concerns that may be considered by some to be byproducts of our lives in a populous urbanizing locality and by others as avoidable (or at least mitigatable) intrusions on our health and quality of life.

Noise, and transportation-generated noise in particular, can have a variety of adverse impacts on individuals and communities. The Annual Report focuses on noise from aircraft operations, noise from motor vehicle traffic on highways and noise from a Metrorail maintenance yard.

Improperly designed lighting can have adverse effects on safety and quality of life. The trespass of light from one property to another, excessive brightness (“glare”), urban sky glow and excessive energy use are all avoidable results of improper lighting.

Our quality of life can also be degraded by a variety of visual pollutants. Previous Annual Reports have reported on signs, billboards, telecommunication towers and utility transmission lines; this year’s report focuses specifically on illegal signs.

As is the case with all of the issues addressed in this summary report, EQAC has prepared overviews of these issues and concerns in considerable detail in the larger report that is available electronically through EQAC’s website (www.fairfaxcounty.gov/eqac/report).

Noise

Background

While transportation-generated noise impacts cannot be eliminated from the urban or suburban environment, they can be minimized through careful planning and through mitigation efforts. For example, there may be opportunities for air traffic controllers to route aircraft operations over commercial and industrial areas as opposed to residential areas. Further, local governments with land near airports can encourage, through planning and zoning measures, noise-compatible uses in areas with high projected noise exposures. Noise from highways can be mitigated to a certain degree through the use of noise barriers, and noise sensitive structures that are built near highways or airports can incorporate building materials with acoustical properties that reduce substantially the amounts of noise that are transmitted into interior spaces.

Recent Activities

Airport Operations

- The numbers of operations in 2013 relative to 2012 rose slightly at Reagan National Airport, balancing out a slight decrease at Dulles Airport, thus maintaining almost the same level of operations in 2013 (600,449) as in 2012 (600,246).

Noise Monitoring

- The Metropolitan Washington Airports Authority, which operates both airports, replaced its aging noise monitoring system with a new monitoring system. The new system, which became operational in late 2008, monitors noise at 35 locations throughout the metropolitan Washington, D.C. area, including 14 sites in Fairfax County. Noise data from the monitors are reported in an Annual Aircraft Noise Report, which can now be accessed from the home page of the MWAA website by searching “noise” from the box at the top right of the page.
- Previously, there were 32 monitoring locations, with 11 in Fairfax County. The four new monitoring stations in Fairfax County were located near Dulles Airport; the other four new monitoring sites were established in Loudoun County. In 2012, noise data from five of the Fairfax County monitors were missing or unreliable due to a wide range of issues including power losses and vandalism. Details on the unavailable data are listed in the Noise Report on the MWAA website.
- Noise data for 2013 will not be available until late fall 2014, due to the workload of MWAA staff.

Washington Dulles International Airport

- Construction of a new north-south runway has been completed, and the new runway opened to operations in November 2008. With the new runway open for service, the older runways have been closed, one at a time, for maintenance, which continued into 2011. All four runways are temporarily open during the busy holiday season. The first full year of service, with all four runways operational, was 2012.
- A number of other construction projects at Dulles Airport are under way, including four new noise barriers along the Dulles Toll Road and Dulles Airport Access Highway. Construction was scheduled to have begun in FY14-15.

Ronald Reagan Washington National Airport

- In early 2008, the Federal Aviation Administration completed its review of the Part 150 Noise Compatibility Study for Reagan National Airport. Only four of the eight proposed noise abatement measures in the study were approved, as were all six of the mitigation measures, with the acknowledgment that these measures were beyond the authority of

FAA. The four measures that were disapproved were done so because there are “no present or forecasted incompatible land uses within the DNL 65 dB” noise contour. While FAA rejected noise abatement measures that were proposed outside the DNL 65 dBA impact area associated with Ronald Reagan National Airport, EQAC feels that noise impacts do not stop at DNL 65 dBA and that areas beyond the DNL 65 dBA noise contour both north and south of the airport continue to be affected by noise associated with operations at the airport.

Aviation Policy Committee

- The Metropolitan Washington Council of Governments’ Aviation Policy Committee was discontinued effective January 2011, and oversight for regional aviation policy from 2011-2013 was returned to the COG board, with The Honorable Mary Hynes, Vice-Chair of the Arlington County Board, serving as Aviation Policy Liaison. Her duties included coordinating with MWAA and coordinating with COG staff in advising the board on aviation policy issues.
- The liaison position was discontinued effective January 2014, and concerns regarding airport noise issues for commercial flights should be directed to MWAA. MWAA maintains an on-line tracking and reporting system, as well as a telephone number, for airport noise complaints for [Reagan National](#) and [Dulles](#) Airports.

Helicopter Noise

- Recognizing both the vital need for helicopters in the region as well as community concern over related noise impacts, COG asked the Aviation Policy Liaison to work with local elected officials, citizens and officials from the Federal Aviation Administration and the Military District of Washington to look for a solution that aggregates community noise concerns and is able to address “hot spots.” To that end, Aviation Policy Liaison Mary Hynes convened a Helicopter Noise Forum in February 2011. One proposal that emerged from the forum was a community noise portal that could manage helicopter noise complaints and pinpoint “hot spots.” While such a portal could help alleviate community concerns, Liaison Hynes noted that COG would need to find funding before it could be adopted. Since the second forum, according to Liaison Hynes, there have been fewer community complaints about helicopter noise, suggesting that the helicopter noise forums, combined with two noise mitigation policies, have been effective.

Highway Noise Barriers

- The I-495 Express Lanes Project has been completed. As part of the project, nine new sound barrier systems were constructed, along with the replacement/enhancement/extension of eight previously existing sound walls. Sound walls have been constructed to protect almost all residential areas on both sides of the highway adjacent to the 14-mile stretch of the project. Barrier heights range from seven to 39 feet.

- Three of the four new noise barrier systems on the I-95 Express Lanes have been completed. The fourth is under construction and will be completed for the opening of the I-95 Express Lanes in early 2015.
- Noise barriers have also been approved for the following projects: the Dulles Connector Road; an I-66 Spot Improvement project; and the I-95 Express Lanes.
- Noise barriers are also under consideration for the Richmond Highway (U.S. Route 1) improvement project between Telegraph Road and Mount Vernon Memorial Highway.

Metro Yard Noise

- As part of the proposed expansion of the Metro Service and Inspection Yard located near the West Falls Church Metro station, a sound box was built over the noisiest portion of a loop track at the site to protect residents from noise generated from the tracks. The sound box was completed in summer 2014 and satisfied all of the development conditions and requirements relating to noise.
- Residents have complained about loudspeaker noise and wheel squeal from another loop, and the Department of Planning and Zoning is working with the Washington Metropolitan Area Transit Authority to resolve some outstanding issues.

Tysons Corner Noise Study

- A contract was awarded in June 2011 to Phoenix Noise and Vibration to complete a study of transportation-generated noise for the Tysons Corner Urban Center. The Tysons Corner Areawide Urban Center Transportation Noise Study was completed by the consultant in December 2012. The study focused on all major roadways, within and bordering the urban center, with a posted speed limit of 35 mph or greater. The study provided noise contours for both ground level and vertical estimates of existing and projected transportation generated noise in this area. Staff continues to rely on the findings of this study as a resource for determining the need for more detailed, site-specific noise studies.

Fairfax County Noise Ordinance Revisions

The Board of Supervisors requested staff to review and revise the Noise Ordinance to better address noise measurement methodology, to consider requiring separate daytime and nighttime noise levels and to address other objective criteria to regulate noise. Staff presented a draft, which received extensive and conflicting comments from the public that provided no clear consensus on the issues. Staff then presented options on how the board could advertise the proposed amendment, given the diversity of the public comments. EQAC will report further on the revision of the county's Noise Ordinance in its next Annual Report.

Stewardship

- The Fairfax County Restoration Project, a Public-Private Partnership, launched in spring 2010 with its initial focus on restoration of areas negatively impacted by the I-495 Express Lanes Project. FCRP is working with VDOT to modify VDOT's landscaping plans to include restoration of cloverleaf areas and areas inside and outside the sound walls. Vegetation planted inside and outside the sound walls will provide many benefits, including reduction in stormwater runoff, habitat for pollinators, birds and small mammals and visual relief for both motorists and residents. In recognition of its many projects already under way in different parts of the county, FCRP was awarded a 2011 Environmental Excellence Award (see Appendix C of the detailed version of this report). Anyone interested in joining the efforts should contact FCRP at info@fcrpp3.org.

Comments and Ongoing Concerns

1. The noise monitor at Great Falls Elementary, which primarily served Reagan National Airport, has been decommissioned with no plans for a replacement as there are currently few complaints about noise at that site. In the 2012 Annual Report, EQAC recommended that the Airports Advisory Committee review MWAA's decision. After its review, the committee recommended that the Board of Supervisors request to MWAA that the monitor be placed in the area with the most complaints not currently served by a monitor. The committee now plans to review MWAA complaint data, determine a location and identify a public building on which to place the monitor. However, given the many problems associated with the external monitors currently used by MWAA and MWAA's interest in researching different noise measurement technology, EQAC is interested in tracking any options that may be presented by MWAA and may comment on changes to the monitoring program that may be proposed by MWAA in the future.
2. EQAC had recommended that the Board of Supervisors request to MWAA that results from MWAA's Noise Report be reported more promptly and on a quarterly basis. Staff had made the request of MWAA, and MWAA had indicated that it would comply. However, given MWAA's possible switch to a different technology, this action has not been taken, and it is not clear to EQAC that any particular frequency of posting of data should be pursued until MWAA has completed a broader evaluation of its monitoring program and provided recommendations. EQAC will track this issue and may provide comments on any changes to the monitoring program that may be proposed by MWAA in the future.
3. Continue to support airport noise-compatible land use planning near airports in the county through the implementation of policies and regulations that reference the most current airport noise contour projections for the airports and that are at least as stringent as federal noise compatibility guidelines.
4. Staff should continue to review all airport and highway studies that require Environmental Assessments or Environmental Impact Statements under the National

Environmental Policy Act for consistency with county policies addressing transportation-related noise and mitigation and report its findings to the board. In turn, the Board of Supervisors should, when appropriate, adopt resolutions with specific requests and/or recommendations and transmit these to the Metropolitan Washington Airports Authority, Federal Aviation Administration, Commonwealth Transportation Board, Virginia Department of Transportation and other state and federal agencies as applicable.

5. Encourage the retention and planting of noninvasive vegetation to provide visual shielding of residents from highways. Where possible, support the provision of vegetated areas adjacent to highways that are wide enough and dense enough to provide noise reduction benefits to residential areas near the highways. Where feasible and appropriate, pursue such approaches in lieu of noise walls.
6. Once one year of reliable community noise impact data from the new runway configuration at Dulles Airport, with all four runways fully operational, are available, the Metropolitan Washington Airports Authority should review and analyze the data to identify operations on the new runways as they relate to community noise impacts and whether or not such impacts would suggest the need for consideration of operational changes.

Light Pollution

Background

Light pollution is a general term used to describe light output, primarily from exterior (outdoor) sources, in commercial, residential and roadway settings that is excessive in amount and/or that causes harmful glare to be directed into the path of travel or into residential neighborhoods. Light pollution is thus both a safety issue and a quality of life issue. A major effort was undertaken in 2002 to write a totally new and modern Outdoor Lighting Ordinance. This highly successful effort came to fruition in early summer 2003 with the adoption of the new Outdoor Lighting Ordinance. However, there were a few areas that could not be addressed adequately by the new ordinance, since suitable standards and convenient measurement technology were not available at that time. This report can now focus on the most pressing of these areas.

In order to achieve more efficient usage of its existing athletic fields, the Fairfax County Park Authority installed pole-mounted lights on several fields so they could be used into the evening hours. However, in some cases, where the fields were located adjacent to residences, there were complaints that the lights eroded the quality of life for the residents. In an effort to assure that effects on surrounding neighborhoods were minimized, the Park Authority had consultants prepare design specifications that would limit light spilling beyond the field area and limit the glare from the high-intensity, pole-mounted light fixtures. Unfortunately, the glare problem and complaints continued. In an earlier report, EQAC

recommended that it work with the Park Authority do a proper study of these problems and produce an improved set of specifications.

Recent Activities

- There have been several revisions to the Outdoor Lighting Ordinance that were needed to address specific problems. There have been several task force meetings to define the scope of these revisions and drafts of the revision have been prepared.
- The Fairfax County Park Authority's efforts to achieve more efficient usage of its athletic fields is both commendable and highly cost-effective despite the presence of some problems with lighting disturbance in residential neighborhoods. EQAC has noted these problems in prior reports and, during the past two years, has worked closely with the Planning and Development Division of the Park Authority to address the problems of light spill beyond the park property and the problem of glare from the high-intensity, pole-mounted athletic field lights. Fortunately, light spill has become a non-problem since recent tests have shown that the Park Authority specifications for spill light are being well met. Recent Park Authority beta tests of LED lights along paths and walkways in McLean Central Park have been extremely successful and indicate that this technology should become the Park Authority standard. EQAC has collaborated with the Park Authority in preparing an extensive report, sometimes known as a "white paper," on the problems of athletic field lighting including the limitations on solutions of the glare problem and a detailed set of technical specifications for design of field lighting that will, insofar as possible, minimize problems for surrounding neighborhoods.

It should be noted that residential communities desire that schools and parks should be located convenient distances from residences in order for children to have convenient pedestrian access to such facilities. Thus, it will never be possible to completely avoid some lighting problems.

Comments and Ongoing Concerns

1. In response to recommendations in earlier EQAC Annual Reports on the Environment, the Fairfax County Park Authority commissioned several studies of sports field lighting design and technology. The Park Authority issued a set of specifications, dated November 2006, for new athletic field lighting installations that addressed most of the issues adequately except for glare. The Park Authority then commissioned a special study of the glare problem. The Park Authority Director of Planning and Development requested EQAC to collaborate with his staff to develop this study. The final document, based on the underlying science, reveals that much of the glare problem is dependent on source-to-background contrast ratio, which is a fundamental law of nature and not under the control of man.
2. The earlier EQAC Annual Report recommendations that the Department of Planning and Zoning undertake some modest but needed revisions of the Outdoor Lighting Ordinance

has come to fruition in the form of several meetings of a task force of stakeholders to develop specifications for such revisions.

3. The originally scheduled revisions have been expanded to include consideration of light emitting diode lamps. The Park Authority has recently begun to use these for walkway lighting due to their much lower operating and maintenance costs. Some of these revisions are soon to be in final form.
4. EQAC continues to support that the Board of Supervisors work with VDOT and Virginia elected officials to eliminate unnecessary roadway lighting and whenever possible to accelerate replacement of existing poorly designed fixtures under the control of VDOT with full cut-off fixtures.

Visual Pollution

This section focuses on visual pollution/blight issues, addressing the issue of roadway signs, which has been a topic of discussion for several years within EQAC. Due to limitations with EQAC members' availability, EQAC has chosen to focus on this one aspect of visual pollution, but also reserves the prerogative to further discuss other aspects of visual pollution at a later date, such as those associated with cigarette butts, litter, dumps, junkyards and the like, which are important components of visual pollution.

Simply stated, "blight" is something that impairs or destroys appearance and results in a deteriorated condition. In recent times, urban blight has come to include a wide range of visual pollutants that degrade the ambience of our communities, including such things as trash and litter on roadsides, unkempt properties, above-ground power and communications transmission lines, communication towers, intrusive and objectionable advertising signage and other forms of visual impairments. Without doubt, signage that is excessive in amount and inappropriate in placement is the most ubiquitous of these "pollutants."

Addressing the Problem

Creating sign regulations developed with community input encourages business owners to erect less intrusive signs that reflect an area's spirit, contributing to civic pride and helping to revitalize commercial districts. Regulations should encourage signs that quickly communicate their message, complement their surroundings and enhance the visual character of the community. Attractive on-premise signs can help encourage residents and business owners to work together to improve and revitalize local appearance.

For many years, EQAC has issued recommendations regarding illegal signs, including support for an agreement between Fairfax County and the Virginia Department of

Transportation regarding removal of illegal signs from highway rights-of-way. EQAC supported the legal agreement as it would have the effect of reducing the number of illegal signs that are found within the county.

In February 2013, the Board of Supervisors directed the county executive to enter into an agreement with the state of Virginia allowing for the removal of illegal signs in the public rights-of-way by the county. That agreement includes an initial phase and a second phase of an enforcement program. During the initial phase, county staff was to educate the public and business groups about the sign removal agreement. This effort had the Department of Code Compliance working in coordination with the Sheriff's Office, Office of Public Affairs and VDOT's public affairs staff. These efforts included outreach to homeowners and civic groups, outreach to business and trade organizations, public service announcements and outreach to the news media.

On July 1, 2013, the Community Labor Force of the Sheriff's Office began a countywide cleanup of illegally posted signs in the rights-of-way on the major roadways in the county. Details of this program are available at <http://www.fairfaxcounty.gov/signs/signremovalprogram.htm>.

It was estimated that the cost of this program will be \$150,000 on an annual basis. Community Labor Force crews will remove all signs located in the designated public rights-of-way between Tuesdays and Fridays. Special event signs are only permitted from Saturday through Monday. If they are present during the weekdays they will be subject to removal. These signs will then be stored at a county facility for five days, which will allow the owner of the sign to reclaim it as required by Va. Code Ann. §33.1-375.1(D). After this five day period, unclaimed signs would be destroyed.

Assuming that this program is maintained for a period of one year in the county, at the end of the one year period, it will be evaluated by staff and an analysis of its successes and/or failures will be forwarded to the Board of Supervisors. If it is determined by the Board of Supervisors that the program should be retained, any modifications suggested by the board will be reviewed and a recommendation will be forwarded to the board, with resource requirements, for its consideration.

As of June 2014, the Fairfax County Department of Code Compliance reported that no evaluation of this program has been conducted to date, but will be conducted in the near future as this program reaches its first full year of operation.

Related Information

The Fairfax County Department of Code Compliance provided the following information for 2013:

- Total number of zoning complaints received in 2013: 3,607 (2012 data: 3,581)
- Number of sign-related zoning complaints received in 2013: 343 (2012 data: 288)
- Number of lighting-related zoning complaints received in 2013: 27 (2012 data: 37)

The Fairfax County Police Department provided information about littering and related complaints that were handled by the department during 2013:

LITTERING AND RELATED COMPLAINTS, FAIRFAX COUNTY POLICE DEPARTMENT, 2013

Citations	Number
Dumping: Dump Trash/etc. on Highway/Private Property	1
Traffic: Leaking Contents; Uncovered Loads	37
Z-Dump Trash on Hwy/Right of Way	1
Arrests	
Dumping Trash, Comp Animal, etc. on Hwy/Property	15
Dumping: Dump Trash/etc. on Highway/Private Property	141

The Alice Ferguson Foundation provided information about the 25th Annual Potomac River Watershed Cleanup in April 2013, as well as a regional litter prevention campaign. A full report for Litter Enforcement Month can be found online at:
<http://fergusonfoundation.org/trash-free-potomac-watershed-initiative/litter-enforcement/litter-enforcement-month/>.

Comment

EQAC applauds the county’s efforts to enter into, and begin to implement, a legal agreement with the Virginia Department of Transportation that addresses removal of illegal signs from highway rights-of-way. Further, EQAC supports the plan noted by the county to evaluate the program following its first year of operation in the county. EQAC intends to follow the results from this program and to provide further input regarding both the county staff’s analysis of its successes and/or failures and staff’s recommendations about retention of and possible modifications to the program.